JBS&G 63325 - 140,443
L08 (CENVP Review - Precinct 3 Lot 5 DSI&RAP) Rev 0

28 February 2023

Jared Marsh
Landcom
Via email: jmarsh@landcom.nsw.gov.au

**Review of Precinct 3, Lot 5 Detailed Site Investigation, Addendum DSI, and Remedial Action Plan – Campbelltown Road, Edmondson Park, NSW**

Dear Jared,

JBS&G Australia Pty Ltd (JBS&G) has been engaged by Landcom (the client) to provide environmental consulting services with regards to land identified as Lot 5 and Part Lot 3 in DP1272931 located at Campbelltown, Edmondson Park, NSW. The services included preparation of environmental site assessments and remedial action plan for Precinct 3 of the Edmondson Park development site, as documented in *Edmondson Park, Precinct 3, Lot 5, Detailed Site Investigation, Campbelltown Road, Edmondson Park*, 63325/148699 (Rev1), 8 February 2023 (JBS&G 2023a), *Addendum DSI – Additional Investigation Residential Land use - Precinct 3, Edmondson Park, NSW*, 63325/149,643 (Rev 0), 8 February 2023 (JBS&G 2023b), and *Edmondson Park, Precinct 3, Lot 5, Remedial Action Plan, Campbelltown Road, Edmondson Park*, 63325/149,630 (Rev1), 14 February 2023 (JBS&G 2023c).

The Precinct 3, Lot 5 Detailed Site Investigation (DSI), Addendum DSI and Remedial Action Plan (RAP) reports were subsequently submitted for consideration by Liverpool Council for Development Application 83/2023. It is understood Liverpool Council requires confirmation that each report was prepared or reviewed and certified by a suitably qualified and experience consultant, which Council considers includes an environmental consultant who is a Certified Environmental Practitioner Site Contamination Specialist (CEnvP(SC)) through the Environment Institute of Australia & New Zealand (EIANZ) CEnvP Scheme.

I, John de Martin, a JBS&G employee and CEnvP(SC) (No. SC41026), confirm that I have reviewed the Precinct 3 DSI, Addendum DSI and RAP (JBS&G 2023a, JBS&G 2023b and JBS&G 2023c respectively) and verify that each report was prepared by suitably qualified and experienced environmental consultants as consistent with the NEPC (2013) *National Environment Protection (Assessment of Site Contamination) Measure 1999* as amended 2013 (ASC NEPM), whom I have worked with for several years, and that the documents are appropriate for the stated objectives.

Should you require clarification, please contact me on 02 8245 0300 or by email jdemartin@jbsg.com.au.

Yours sincerely:

John De Martin, CEnvP(SC)
Principal
**JBS&G Australia Pty Ltd**

Attachments:
Limitations

## Attachment A – Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquiries.

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

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

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

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

Landcom

Edmondson Park, Precinct 3, Lot 3

# Detailed Site Investigation

Campbelltown Road, Edmondson Park

20 January 2023

63325/148,860 (Rev 0)

JBS&G

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Landcom
Edmondson Park, Precinct 3, Lot 3

# Detailed Site Investigation

Campbelltown Road, Edmondson Park

20 January 2023

63325/148,860 (Rev 0)
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# Abbreviations

| Term | Definition |
|---|---|
| ACM | Asbestos Containing Material |
| AHD | Australian Height Datum |
| Bgs | Below ground surface |
| BTEX | Benzene, Toluene, Ethylbenzene and Xylenes |
| COPC | Contaminant of Potential Concern |
| CSM | Conceptual Site Model |
| DGI | Data Gap Investigation |
| DQI | Data Quality Indicators |
| DQO | Data Quality Objectives |
| DSI | Detailed Site Investigation |
| EILs | Environmental Investigation Levels |
| EMP | Environmental Management Plan |
| EPA | Environmental Protection Agency |
| ESLs | Environmental Screening Levels |
| HILs | Health Investigation Levels |
| HSLs | Health Screening Levels |
| LOR | Limit of reporting |
| NATA | National Association of Testing Authority |
| NEPM | National Environmental Protection Measure |
| OCPs | Organochlorine pesticides |
| PAHs | Polycyclic Aromatic Hydrocarbons |
| PARCC | Precision, accuracy, representativeness, comparability and completeness |
| PFAS | Per- and polyfluoroalkyl substances |
| PCBs | Polychlorinated biphenyls |
| PID | Photo Ionisation Detector |
| QA/QC | Quality Assurance / Quality Control |
| RPD | Relative Percentage Difference |
| SAQP | Sampling Analysis and Quality Plan |
| TRH/TPH | Total Recoverable Hydrocarbons / Total Petroleum Hydrocarbons |
| VOCs | Volatile Organic Compounds |

## Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Landcom (the client) to provide environmental consultancy services for the combined contamination and geotechnical assessment for a portion of Precinct 3 of the Edmondson Park development site, located at Campbelltown Road, Edmondson Park, NSW (the site) as shown in Figure 1. The site is legally identified as Lots 5 and Part Lots 2 & 3 on DP1272931, totalling approximately 17.91 hectares (ha).

This investigation forms part of a broader land parcel formerly part of the Ingleburn Defence Site (IDS), Edmondson Park South within the Liverpool City Council local government area. The broader land parcel has previously been the subject of several environmental assessments, remediation and validation activities and a subsequent site audits (Coffey 2009[1]; AECOM 2009[2] & AECOM 2011[3]).

This report has been generated to support a development application for the proposed subdivision of the investigation area for which the concept plan indicates proposed public open space landuse, excluding the areas identified for general residential and road reserve areas, as shown on **Figure 2**, with an approximate site area of 6.65 ha.

Given the age of previous investigations and removal of previous structures and spoil since, the current contamination status of the investigation area was considered to require further assessment to enable conclusions to be drawn on site suitability such that the subdivision consent may be granted.

In order to investigate the data gaps identified in previous reports, JBS&G prepared a Preliminary Site Investigation (PSI) (JBS&G 2022a[4]) and a Sampling Analysis and Quality Plan (SAQP) (JBS&G 2022b[5]) based on a review of available historical reports and a site inspection in August 2022. The SAQP was submitted to the appointed site auditor, Rowena Salmon of Ramboll Australia, for comment prior to implementation of the plan. This report has been developed to address Landcom's requirements, in general accordance with the requirements of ASC NEPM[6] and NSW Environmental Protection Authority (EPA) made or endorsed guidance.

The objective of the investigation was to evaluate from a land contamination perspective, whether the investigation area is suitable for the proposed land use, or alternatively, to make recommendations to enable such conclusions to be made.

The scope of works completed in preparation of this investigation comprised: completion of intrusive sampling activities comprising 24 test pits within accessible areas of the investigation area previously identified as areas of concern (AECs), building footprints or areas of potential fill; comparison of available historical data compared to the adopted assessment criteria; assessment of environmental data collected, including comparison of field and analytical data for contaminants of potential concern (COPC) against appropriate EPA-made or endorsed investigation / screening levels for the proposed land use(s); and preparation of this investigation report in accordance with relevant EPA guidelines.

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1 *Department of Defence Non-Statutory Site Audit Report and Site Audit Statements Defence Ingleburn Site Ingleburn NSW*. Mr Tony Scott NSW EPA Accredited Site Auditor of Coffey Environmental, ref: ENVILCOV00208AB, July 2009 (Coffey 2009)

2 *Site Audit Statement (and Report) - Defence Ingleburn Site Campbelltown Road, Ingleburn NSW*. AECOM Australia Pty Ltd, D1056701, 07 December 2009 (AECOM 2009)

3 *Site Audit Report – Defence Ingleburn Site, Campbelltown Road, Ingleburn, NSW*. AECOM Australia Pty Ltd, 60152865, 25 July 2011 (AECOM 2011).

4 *Edmondson Park, Precinct 3, Lots 3 & 5 – Preliminary Site Investigation. Campbelltown Road, Edmondson Park*. JBS&G Australia Pty Ltd. Ref 63325/147,248 (Rev 0) 13 October 2022 (JBS&G 2022a)

5 *Edmondson Park, Precinct 3, Lots 3 & 5, Sampling Analysis and Quality Plan, Campbelltown Road, Edmondson Park*, JBS&G Australia Pty Ltd, 63325/147,791 (Rev 0), 14 October 2022 (JBS&G 2022b)

6 ASC NEPM (2013) *National Environment Protection (Assessment of Site Contamination) Measure 1999*. National Environmental Protection Council, Office of Parliamentary Counsel, Canberra, Australia.

Based on the scope of works completed, the following conclusions are provided:

- The data gap investigation included the implementation of 24 soil testpits to facilitate analysis of selected representative soil samples for a broad range of COPCs identified in the Conceptual Site Model (CSM) including heavy metals, Polycyclic Aromatic Hydrocarbons (PAHs), Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), Organochlorine pesticides (OCPs), Polychlorinated biphenyls (PCBs), Per- and polyfluoroalkyl substances (PFAS) and asbestos. With consideration to the adopted site assessment criteria, the following conditions were identified that require further consideration from a health and/or ecological risk view point with regard to the suitability of the investigation area for the proposed land use:
    - Identification of one location (DG05_0_0.1) where lead in surface fill material concentrations exceeded the adopted health and ecological investigation criteria; and
    - During the site inspection of the investigation area, no surficial ACM was observed. Given that the investigation area was observed to be highly vegetated, there is a potential of ACM fragments to be present given the consistent historical site use, as was observed in the adjacent non vegetated areas of Lot 5. Limited anthropogenic material e.g., bricks, was also observed on the surface and within the fill, often associated with further asbestos impacts.
- Laboratory analysis of representative soil samples for PFAS compounds as contaminants of potential concern did not identify the presence of elevated contaminant concentrations with regard to the adopted health and/or ecological based site assessment criteria appropriate for open space landuse scenario.
- In the short term, the presence of asbestos in soil at the investigation area should be identified via implementation of an Asbestos Register incorporated into an Asbestos Management Plan (AMP) in accordance with Work Health and Safety (WHS) Regulations such that potential occupational exposure scenarios may be appropriately addressed during maintenance of the investigation area in its current state.
- Remaining infrastructure associated with former use of the investigation area, including inground water hydrant infrastructure, roadways, stormwater, Telstra Pits etc will also require decommissioning works and removal during site preparation activities to ensure that no minor areas of inground impact occur within these areas of the investigation area. The presence of inground ACM pipework and ACM containing Telstra pits will require decommissioning and removal under the AMP.
- In the absence of gross and/or widespread contamination at the investigation area, no potential issues relating to off-site migration of contaminants were identified under the current site conditions. Should existing vegetative cover be significantly disturbed, management actions would be necessary in portions of the investigation area to appropriately manage the potential risk of airborne asbestos fibre generation and subsequent contaminant migration; and
- It is considered that the site the investigation area is readily able to be made suitable for the proposed residential development and less sensitive supporting land uses subject to preparation and successful implementation of an appropriate remedial action plan (RAP) to address the areas of concern as outlined above.

Based on the conclusions of the investigation it is recommended that:

- Management of the identified lead in soil hotspot and assumed asbestos contamination in relation to development of the investigation area is undertaken via preparation and implementation of a RAP;

- In the meantime, appropriate site management procedures should be implemented via preparation and implementation of an AMP/asbestos register to ensure occupational exposure risks are appropriately managed during any/all activities that result in ground surface disturbance; and
- During development of the investigation area, a construction environmental management plan (CEMP) is prepared (in conjunction with the RAP), which incorporates an unexpected finds protocol (UFP) to address any unexpected contamination conditions encountered during development of the investigation area.

# 1. Introduction

## 1.1 Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Landcom (the client) to provide environmental consultancy services for the combined contamination and geotechnical assessment for a portion of Precinct 3 of the Edmondson Park development site, located at Campbelltown Road, Edmondson Park, NSW (the site) as shown in **Figure 1**. The site is legally identified as Lots 5 and Part Lot 3 on DP1272931, totalling approximately 17.291 hectares (ha).

This investigation forms part of a broader land parcel formerly part of the Ingleburn Defence Site (IDS), Edmondson Park South within the Liverpool City Council local government area. The broader land parcel has previously been the subject of several environmental assessments, remediation and validation activities and a subsequent site audits (Coffey 2009[7]; AECOM 2009[8] & AECOM 2011[9]).

This report has been generated to support a development application for the proposed subdivision of the investigation area for which the concept plan indicates a proposed public open space landuse, excluding the areas identified for general residential and road reserve areas as shown on **Figure 2**, with an approximate site area of 6.65 ha.

Given the age of previous investigations and removal of previous structures and spoil since, the current contamination status of the investigation area was considered to require further assessment to enable conclusions to be drawn on site suitability such that the subdivision consent may be granted.

In order to investigate the data gaps identified in previous reports, JBS&G prepared a Preliminary Site Investigation (PSI) (JBS&G 2022a[10]) and a Sampling Analysis and Quality Plan (SAQP) (JBS&G 2022b[11]) based on a review of available historical reports and a site inspection in August 2022. The SAQP was submitted to the appointed site auditor, Rowena Salmon of Ramboll Australia, for comment prior to implementation of the plan. This report has been developed to address Landcom's requirements, in general accordance with the requirements of ASC NEPM[12] and NSW Environmental Protection Authority (EPA) made or endorsed guidance.

## 1.2 Objective

The objective of the investigation was to evaluate from a land contamination perspective, whether the investigation area is suitable for the proposed land use, or alternatively, to make recommendations to enable such conclusions to me made.

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7 *Department of Defence Non-Statutory Site Audit Report and Site Audit Statements Defence Ingleburn Site Ingleburn NSW*. Mr Tony Scott NSW EPA Accredited Site Auditor of Coffey Environmental, ref: ENVILCOV00208AB, July 2009 (Coffey 2009)

8 *Site Audit Statement (and Report) - Defence Ingleburn Site Campbelltown Road, Ingleburn NSW*. AECOM Australia Pty Ltd, D1056701, 07 December 2009 (AECOM 2009)

9 *Site Audit Report – Defence Ingleburn Site, Campbelltown Road, Ingleburn, NSW*. AECOM Australia Pty Ltd, 60152865, 25 July 2011 (AECOM 2011).

10 *Edmondson Park, Precinct 3, Lots 3 & 5 – Preliminary Site Investigation. Campbelltown Road, Edmondson Park*. JBS&G Australia Pty Ltd. Ref 63325/147,248 (Rev 0) 13 October 2022 (JBS&G 2022a)

11 *Edmondson Park, Precinct 3, Lots 3 & 5, Sampling Analysis and Quality Plan, Campbelltown Road, Edmondson Park*, JBS&G Australia Pty Ltd, 63325/147,791 (Rev 0), 14 October 2022 (JBS&G 2022b)

12 ASC NEPM (2013) *National Environment Protection (Assessment of Site Contamination) Measure 1999*. National Environmental Protection Council, Office of Parliamentary Counsel, Canberra, Australia.

### 1.3 Scope of Works

The scope of works completed in preparation of this investigation comprised:

- Completion of intrusive sampling activities comprising 24 test pits within accessible areas of the investigation area previously identified as areas of concern (AECs), identified stockpiles, building footprints or areas of potential fill;
- Completion of a groundwater monitoring event across four locations;
- Comparison of available historical data compared to the adopted assessment criteria;
- Assessment of environmental data collected, including comparison of field and analytical data for contaminants of potential concern (COPC) against appropriate EPA-made or endorsed investigation / screening levels for the proposed land use(s); and
- Preparation of this investigation report in accordance with relevant EPA guidelines.

# 2. Site Conditions and Surrounding Environment

## 2.1 Site Identification

The site location is shown on **Figure 1**. The investigation area layout and associated cadastral boundaries are shown on **Figure 2,** with site details summarised in **Table 2.1** and described in detail in the following sections. For the purposes of this investigation, the site has been segregated into areas of potential landuse. This reported assessment has been completed on the areas that have been identified for open space and areas not currently certified for vegetation removal.

**Table 2.1: Summary Site Details**

| | | |
|---|---|---|
| **Lot/Deposited Plan (DP)** | Parts Lot 3 & Lot 5 DP1272931 | |
| **Address** | Campbelltown Road, Edmondson Park | |
| **Local Government Authority** | Liverpool City Council | |
| **Approximate MGA Coordinates (GDA94-MGA56)** | East: 301605.858<br>North: 6238642.289 | |
| **Site Zoning (State Environmental Planning Policy (Precincts—Western Parkland City) 2021)** | Lot 3<br>RE1: Public Recreation<br>SP2: Infrastructure (Classified Road & Substation) | Part Lot 5<br>RE1: Public Recreation |
| **Current Use** | Vacant Land | |
| **Previous Use** | Former Ingleburn Defence Site | |
| **Site Area** | Approximately 6.65 ha | |

## 2.2 Site Description

The investigation area was formerly part of the Ingleburn Defence Site (IDS), and is located to the north of Campbelltown Road and the east of Zouch Road. The investigation area, being part lot 3 and the north-western part of Lot 5, is an irregular shaped parcel of land of which the northern extent is bound by vacant and vegetated land comprising the Edmondson Regional Park, and Zouch Road and off-site electrical substation to the west. The southern site boundary comprises Campbelltown Road and to the eastern boundary, the residual parts of Precinct 3, comprising remainder lot 5, being the area proposed for residential landuse and roadways.

A site inspection was undertaken by two of JBS&G's trained and experienced environmental consultants, including a Licensed Asbestos Assessor (LAA) on the 17 August 2022, with field investigation works completed on 17-19 and 28 October 2022. Observations of the current site conditions and layout are discussed below and photographs of general conditions taken during the inspection are presented in **Appendix A**.

At the time of the inspection the majority of the investigation area was covered by dense vegetation including overgrown grass, shrubs and trees. Four vegetated stockpiles of material were identified in the southern portion of the investigation area, as shown on **Figure 3A**. These stockpiles were identified to be between 1 m and 3 m in height and range in estimated volume of between 100 $m^3$ and 180 $m^3$. In addition, three stockpiles of fly tipped wastes were observed across the site investigation area. These stockpiles were observed to contain building and green wastes. The locations of these stockpiles are presented on **Figure 3A**, with their volumes estimated to range between 2 $m^3$ and 16 $m^3$.

Across the investigation area, a range of residual building footprints were observed to remain as exposed concrete and tiled pads. In addition, concrete pathways remained in the proximity of these former structures. Asphalt paved roadways were also located on site, with a large hardstand area identified in the location of the former Petrol Oil and Lubricant (POL) depot along the western boundary, adjacent to the off-site electrical substation

Remnants of services infrastructure were identified across the investigation area, including fire hydrants and associated hose mounts. Telegraph poles were identified parallel to roadways

throughout the investigation area and in areas where historical buildings were formerly located. Remnant garden beds and retaining walls were identified to generally be of concrete, brick and/or rock materials and were observed adjacent to roadways and historical building footprints.

Vanguard Park was observed as a manicured lawn area in the south-west corner of the site. This open space area was not open to public use at the time of the investigation.

No standing or flowing water was observed across the investigation area at the time of the investigation.

### 2.3 Surrounding Land Use

Surrounding land-uses at the time of site inspection are described following:

- **North**: vegetated areas of the Edmondson Regional Park and Landcom Lot 2, including the former Ingleburn Defence Site parade ground;
- **East**: Remainder of Lot 5, identified as vacant land proposed for future residential landuse development, with MacDonald Rd and a new residential estate beyond;
- **South**: Campbelltown Rd with new residential developments and associated recreational open space / community facilities beyond. Road widening works and infrastructure improvements have recently been completed, or were in progress along Campbelltown Road; and
- **West**: An electrical substation compound in the south-west, outside the investigation area with the Zouch Rd corridor to the west of the site/this infrastructure. Vanguard Park manicured areas and garden beds was identified in the south-western corner of the site. Beyond the road is a continuation of the Edmondson Regional Park in the north of the site with a Jehovah's Witness Church compound to the west of the balance of the site.

### 2.4 Topography and Hydrology

Review of the regional topographic information from NSW Spatial Services (Spatial Services, 2022[13]) indicated that the investigation area lies at an elevation of between 66 m Australian Height Datum (AHD) at the eastern streamline and 84 m AHD on the most western point of the investigation area. The overall slope of the investigation area was towards the central east boundary of the investigation area and towards the north. The topography drains towards an unnamed drainage line in the centre of the investigation area as shown in **Figure 2**.

As discussed in **Section 2.1**, the investigation area is predominately surfaced with grass or shrub/tree cover, whereby it is anticipated surface water generated during periods of rainfall is likely to result in infiltration into the ground surface. In periods of heavy or prolonged rainfall, excess water is likely to result in overland flow toward the internal site drainage lines. Some redundant street guttering and associated stormwater drainage infrastructure may remain, otherwise it is anticipated that drainage will occur in line with the investigation area topography, following which the water would flow toward the more central surface water drainage features within the Edmondson Regional Park.

This drainage line extends away from the investigation area in a north-east direction through the Regional Park and extending around the north of the Edmondson Park Town Centre. Regionally, this surface water feature continues through a series of formed channels in Glenfield toward Glenfield Creek located approximately 4 km to the north-east of the investigation area. This creek intersects with the Georges River approximately 6 km to the east of the investigation area.

[13] NSW Spatial Services, Department of Finance, Services & Innovation – NSW Elevation and Depth Contours, accessed 25 August 2022, (Spatial Services, 2022)

## 2.5 Geology and Soils

Review of the Penrith 1:100 000 Geological Series Sheet 9030, NSW Department of Mineral Resources, 1991 indicated the investigation area is underlain by shale, carbonaceous claystone, claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff of the Wianamatta Group.

Reference to the online eSPADE 2.2 tool hosted by the NSW Office of Environment and Heritage (OEH 2020[14]) indicates that the investigation area is present within the Blacktown soil landscape. The Blacktown landscape generally comprises gently undulating rises on Wianamatta Group shales. Local relief to 30 m and slopes usually >5% are expected with broad rounded crests and ridges with gently inclined slopes. Natural vegetation is typically charactered as (cleared) Eucalypt woodland and tall open-forest (dry schlerophyll forest). The Blacktown soil profile is typically shallow to moderately deep (>100 cm) hard setting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines. It is characterised by limitations including localised seasonal waterlogging, localised water erosion hazard, moderately reactive highly plastic subsoil, localised surface movement potential.

Details of historical subsurface investigation observations are summarised in relevant portions of **Section 3**.

## 2.6 Hydrogeology

A search of the registered groundwater bores identified 1 bore within 1.5 km of the investigation area. The bore record did not include information relation to bores within this area. Within 2 km of site an additional 5 bores were identified. The relevant information from the 6 wells is summarised in **Table 2.2**.

**Table 2.2: Registered Groundwater Bore Search Summary**

| Bore ID | Use | Standing Water Level (m bgs) | Depth (m) | Distance from Site & Direction | Lithology |
|---|---|---|---|---|---|
| GW115531 | - | - | 222 | 0.85 km northwest | - |
| GW105200 | Domestic | 13 | 303 | 1.65 km northwest | 0-0.3m: Topsoil<br>0.3-1.5m: Clay<br>1.5-86m: Shale<br>86-298m: Sandstone<br>298-303m: Slate |
| GW111677 | Monitoring | - | 300 | 1.65 km southwest | 0-89m: Shale<br>89-300m: Sandstone |
| GW111676 | Monitoring | - | 150 | 1.7 km southwest | 0-91m: Shale<br>91-150m: Sandstone |
| GW111675 | Monitoring | - | 84 | 1.75 km southwest | 0-84m: Shale |
| GW113061 | Monitoring | - | 8.5 | 1.9 km southwest | 0-1m: Soil<br>1-7m: Clay<br>7-8.5m: Shale |

Based on the geological conditions, groundwater at the investigation area is expected to occur within the shale bedrock underlying the investigation area at variable depths, typically associated with changes in permeability at the soil-rock interface and within faults/fractures in the shale bedrock. Given the residence time and rock formation conditions, groundwater within these profiles is anticipated to be saline and non-potable. The potential for groundwater movement is likely to be low given the low permeability of the clay and shale profile.

[14] *ESPADE 2.2*. https://www.environment.nsw.gov.au/eSpade2Webapp NSW Office of Planning, Industry & Environment accessed 22 August 2022, (DPIE 2022).

It is anticipated that regional groundwater flow will occur towards the east-north-east and the unnamed drainage lines extending toward Glenfield ultimately moving toward the Georges River over 6 km to the east of the investigation area.

Based on review of eSPADE 2.2, the investigation area exists within the Upper South Creek Variant A Hydrogeological Landscape. Aquifers in this landscape are reportedly characterised as follows:

- Unconfined in unconsolidated alluvial sediments;
- unconfined to semi-confined along structures (bedding, joints, faults) in the fractured bedrock;
- Lateral flow occurs through alluvial sediments on slopes and plains;
- Local perching above clay-rich layers (seasonal);
- Hydraulic conductivity is moderate: $10^{-2}$ to 10 m/day;
- Hydraulic transmissivity if low to moderate: <2 – 20 $m^2$/day;
- Hydraulic gradient is gentle: <10 %;
- Groundwater is generally brackish 1.6 – >4.8 dS/m; and
- Depth to groundwater is between 2 and 6 m bgl.

Details of historical groundwater investigation are summarised in relevant portions of **Section 3**.

### 2.7 Acid Sulfate Soils

Based on a review of the NSW Office of Environment and Heritage Acid Sulfate Soils Risk database (2011 Revision) there is "no known occurrence" of acid sulfate soils identified for the investigation area or the surrounding areas. As such, no further consideration of potential requirements for acid sulfate soils management is considered necessary.

### 2.8 Meteorology

A review of average climatic data for the nearest Bureau of Meteorology monitoring location Bankstown Airport (BOM, 2022[15]) indicates the investigation area is located within the following meteorological setting:

- Average minimum temperatures vary from 5.2° C in July to 18.3° C in January;
- Average maximum temperatures vary from 17.4° C in July to 28.5° C in January;
- The average annual rainfall is approximately 868 mm with rainfall greater than 1 mm occurring on an average of 82.2 days per year; and
- Monthly rainfall varies from 43.9 mm in July to 115 mm in March with the wettest periods occurring on average in January, February and March.

[15] *Commonwealth of Australia, 2022 Bureau of Meteorology*, http://www.bom.gov.au/climate/averages/tables/cw_066137.shtml prepared on 22 August 2022 (BOM, 2022)

# 3. Assessment of Background Records and Site History

As noted in **Section 1**, a range of historical environmental site investigations have previously been undertaken across the site as part of the former IDS, with more recent targeted investigation activities also completed within Lots 3 and 5 on behalf of Landcom. A summary of historical site use information, in addition to up to date statutory searches are discussed in the following sections.

## 3.1 Available Historical Documents

The following previous site assessment reports provided by Landcom to JBS&G were reviewed for this project:

- *Preliminary Geotechnical and Contamination Review, Ingleburn Defence Site.* Dames and Moore, Ref: 12343-063-070 January 1999 (D&M 1999)
- *Department of Defence Non-Statutory Site Audit Report and Site Audit Statements Defence Ingleburn Site Ingleburn NSW.* Mr Tony Scott NSW EPA Accredited Site Auditor of Coffey Environmental, ref: ENVILCOV00208AB, July 2009 (Coffey 2009);
- *Site Audit Statement (and Report) – Defence Ingleburn Site Campbelltown Road, Ingleburn NSW.* AECOM Australia Pty Ltd, D1056701, 07 December 2009 (AECOM 2009)
- *Ingleburn Defence Site Stage 3 Remediation Works Validation Report*, ERM 13 July 2011, ref: 0113181RP07_Final (ERM 2011a).
- *Development Environmental Management Plan – Ingleburn Defence Site*, ERM July 2011, ref: 0113181RP08_final (ERM 2011b).
- *Site Audit Statement (and Report) – Defence Ingleburn Site, Campbelltown Road, Ingleburn, NSW*. AECOM Australia Pty Ltd, 60152865, 25 July 2011 (AECOM 2011).
- *Detailed Site Investigation, Lot 5, Precinct 3 Edmondson Park Campbelltown Road, Edmondson Park, NSW.* JBS&G Australia Pty Ltd, 6 July 2021 (JBS&G 2021)

The site audit reports (Coffey 2009, AECOM 2009, and AECOM 2011) each provide a summary of the findings of the previous investigations completed by various other parties across the investigation area, inclusive of site investigation plans and summary analytical tables documenting assessment results. The Site Audit Reports provide an independent assessment by the auditor of the conduct of the investigation, results and conclusions with regard to their suitability and adequacy to meet the guidance provided by the NSW EPA as in force at the time of the audit statement preparation. As such, some of the detailed information included in the original reports reviewed by the auditor is not available for JBS&G review, however a broad understanding of site conditions has been obtained.

## 3.2 Historical Site Assessment Activities Overview

Broadly, an initial stage of site investigation/assessment activities was undertaken on behalf of the Department of Defence (DoD) that were commenced in approximately 1998 and completed around 2011. This comprised investigations of areas of the Site that were considered to represent a high risk of contamination and included areas:

- Where underground storage tanks (USTs) and associated infrastructure was known to occur, or have previously occurred;
- That had been used for the storage of hazardous chemicals;
- That had been used for military training; and/or
- That had been subject to known filling or otherwise burial of waste.

Works were carried out by mainly by URS Australia Pty Ltd (URS) with the first stage of investigations resulting in a number of areas being remediated and validated as suitable for a range of potential urban redevelopment uses, depending upon the area of the site. The works completed during this first stage of the investigation were the subject of the Coffey (2009) site audit.

A second stage of site investigations was carried out by SKM Australia (SKM) between around 2008 and 2009 and comprised assessment of the balance of the IDS, including areas generally considered to have a lower risk of site contamination as a result of activities completed at the site.

The works completed during this second stage of investigation were combined with those completed in first stage to support a site RAP[16], prepared by Ryall Environmental Pty Ltd (RE) in 2009 (not available to JBS&G for review at the time of writing). It is understood that Frank Mohan of AECOM as an accredited Site Auditor, completed a site audit of works up to and inclusive of implementation of the RAP in 2009.

DoD commissioned Environmental Resources Management Australia (ERM) as validation environmental consultants and Synergy Resource Management (Synergy) in approximately 2010 to 2011 to undertake Stage 3 site remediation works and associated validation assessments associated with implementation of the RE (2009) RAP and document works undertaken to make the site suitable for the proposed future mix of landuses under the Landcom Concept Plan, as shown in **Appendix B1**. These works, undertaken broadly across the IDS included:

- Removal and off-site disposal of fly-tipped and identified buried waste materials;
- Building demolition and associated removal of hazardous building materials (lead and/or asbestos);
- Excavation and off-site disposal of a small number of surface soil contamination hotspots;
- Decommissioning and removal of USTs and associated infrastructure in addition to excavation and on-site treatment/off-site disposal of hydrocarbon impacted soil and rock;
- Reinstatement of resulting excavations via backfill with validated fill material or regrading and contouring of ground levels to facilitate surface water drainage.

AECOM (2011) documents the site audit prepared following the Stage 3 remediation works within the proposed Precinct 3 footprint. Upon completion of these works, AECOM agreed with ERM's conclusions that the various areas of the site could be considered suitable for the proposed land uses, subject to ongoing implementation of a Development Environmental Management Plan (DEMP, ERM 2011b) that would apply until the completion of the proposed development works. This was designed to address the residual risk associated with unexpected finds and/or unexploded ordnance (UXO) as may be encountered during earthworks associated with the future development activities.

Subsequent to transfer of the site from the DoD to Landcom, various activities are documented to have been undertaken across portions of the IDS, in areas external to the current investigation area.

Exceedances identified in the 2009 site audit were identified to have been re-investigated as part of the 2011 site works, with hotspot remedial activities undertaken where required. Heavy metals exceedances in the ERM (2011) validation report were documented and statistics were conducted on the available dataset by ERM to show that the isolated exceedances were not seen to adversely impact the site suitability.

Given the current health screening criteria applicable for asbestos, historical asbestos identified in the ERM (2011) investigation at building validation location F74 and grid sample J70 were re-

[16] *Department of Defence Remedial Action Plan Ingleburn Defence Site Ingleburn NSW*, Ryall Environmental Pty Ltd (Ref: 216 RAP_Ingleburn_Final_25Nov09) November 2009 (RE 2009)

investigated as part of the JBS&G (2021) investigation, with no asbestos in soil conditions identified to exceed the current adopted criteria.

Specific discussion of the outcomes of various reports are further detailed in the following sections.

### 3.3 Review of Historical Reports

#### 3.3.1 D&M (1999) Preliminary Contamination Review

This assessment, prepared for DoD included a review of conditions associated with a 308 ha site known as the IDS which had been occupied by DoD since 1939 and primarily used as an infantry training camp. The objective of the review was to identify major constraints to future redevelopment and to provide a sound basis for planning of future intrusive site investigations.

D&M identified that in 1999, the current assessment site and immediate surrounds site was defined by Defence as Blocks D, E and F. The Block F infrastructure was still in use, being occupied by the Army Second Training Group, whilst the balance of current assessment site and immediate surrounds was vacant.

D&M reported the following historical land use details with regard to the IDS. Prior to 1939, the site was reported to have been a mixed of densely timbered land and rural uses, typically dairy farming. The IDS was initially established as a World War II (WWII) training and embarkation camp in October 1939, which resulted in the construction of 139 buildings across the IDS. It was reported that training activities included basic fitness, weapons and transport operations, officer training and conscript basic training.

Whilst the IDS was mostly for infantry training, other units including artillery, engineers, transport, signals, anti-aircraft artillery, medical, services, works and ordnance were also present in some form across the IDS site.

Post WWII and prior to the Korean War (1951-54) parts of the site were reportedly leased to local farmers. During the Korean War the site was used as a major training centre after the re-introduction of National Service. Sports ovals, vehicle parking areas and larger buildings were generally constructed at IDS by 1959. Following the abolition of National Service in 1972 operations at the site were scaled down, but the majority of facilities remained active to some extent until the 1990s. Block F (Bardia Barracks area) in addition to Blocks D and E being the areas east of Zouch Rd and north of Campbelltown Rd were the headquarters of the Army Second Training Group since 1973 and so were some of the last active camp areas.

D&M review of historical imagery indicated that large blocks of barracks buildings had been constructed across Block F prior to 1947, comprising a standardized plan of parallel accommodation huts flanking central open areas. The northern most portion of the current assessment site and immediate surrounds, comprised an area of exposed/disturbed ground surrounded by vacant grassed areas. By 1961, the majority of site features north of Campbelltown Road were consistent with the 1990s layout, with collections of buildings (likely mess halls) having been constructed during the period since the late 1940s. This included the construction of the parade ground paved area and associated vehicle access roads.

By 1999, it was reported that the majority of former buildings across the broader site had been removed, with the remainder still occupied either by military units or by civilian tenants and there were many areas where illegal fly tipping had occurred.

D&M identified that potential areas of impact or activities that may have caused impacts across the IDS (incorporating the current assessment site and immediate surrounds) comprised:

- Unidentified buried waste and buried objects across the main site area;
- Unexploded ordnance (UXO);

- Small arms range (remote from the current assessment site and immediate surrounds);
- Maintenance compounds, fuel stores and workshops (including various USTs)
- Transformers and switch gear;
- The poisons shed south of Block I (remote from the current assessment site and immediate surrounds);
- The margins surrounding former site buildings that may have been impacted by lead paint particulates;
- The nursery/ground maintenance compound (remote from the current assessment site and immediate surrounds);
- Site area road margins, fence lines, parade grounds and ovals; and
- Fly tipped material around the site.

On the basis of information from one interviewee, D&M identified that historical burial of waste (landfilling) may potentially have been completed in the area to the north of Block F. The nature of the material was not known but it may have comprised general refuse from the nearby barracks. The experience of the author indicated that "localised burial of waste would probably have been conducted at locations around the site on an ad-hoc basis. Such burial is particularly likely to have occurred in raised and graded areas such as the ovals, parade grounds and some of the transport compounds".

It was expected that UXO issues on the remainder of the site, beyond the direct training areas would be limited to isolated imported artefacts.

Within the current assessment site and immediate surrounds, Block F had a Transport Compound close to the Zouch Rd boundary with a footprint of 0.39 Ha. Likely impacts if present, were expected to be associated with USTs, use of petroleum hydrocarbons, solvents and metals. The USTs would have contained diesel for motor transport or fuel oil for boilers and/or backup generators. Block F was reported to have 3 USTs, two for petrol and 1 for boiler fuel. There was a suggestion that there was also 1 boiler fuel UST within the Block D portion of the site, whilst the Block B UST infrastructure was identified to be located well to the east of the current assessment site and immediate surrounds boundary.

In addition to the transport compounds, electrical transformer units were also identified as having the potential for localised soil impacts from TRH (and PCBs) as a result of past oil spills. PCBs were reported to typically have been replaced in transformer units at the site in the late 1970s.

The D&M limited site investigation included within the current assessment site and immediate surrounds – comprised one testpit (TP7) to the east of the parade ground and one testpit (TP6) in the eastern portion of the current assessment site and immediate surrounds, as seen on D&M (1999) **Figure 3**, in **Appendix B2**. Several intermittent drainage channels were shown on the site plans commencing in the current assessment site and immediate surrounds and extending to the north and east respectively.

Plans provided in D&M (1999) also indicated the potential for a large incinerator to have previously been located to the north-east of Block D in the northern section of the current assessment site and immediate surrounds.

The limited subsurface investigation works documented in D&M (1999) were reported to have encountered shallow fill material at sampling locations, or alternatively clayey sand/sandy clay topsoil. The surface soils were underlain by red/orange/brown clay to depths of 0.6-1.2 m below ground surface (bgs), becoming white/grey clay from approximately 0.6 m to 1.2 – 3.0 m bgs, which was in turn underlain by shale. Some perched seepage was encountered in excavations/boreholes

within the broader IDS, present within soil/fill or otherwise groundwater seepage occurred in shale, stabilizing at depths of 5.1 to 8.5 m bgs. Groundwater was expected to flow toward the east.

### 3.3.2 Coffey (2009) Site Audit Report

The Coffey (2009) document comprised a non-statutory audit of investigation, remediation and validation activities of limited areas of the IDS considered in D&M (1999) to have a high risk of site contamination based on historical activities. The site audit was designed to determine the nature and extent of contamination and the appropriateness of an investigation/remedial action plan.

Within the current assessment site and immediate surrounds, these high risk areas comprised:

- Block B UST area – approximately 4 m by 8 m; and
- Block F UST area – approximately 20 m and 23 m.

In addition, JBS&G also note that the SAR documented that others had completed investigation of the Sporting Field Area, situated to the north of the current assessment site and immediate surrounds, along the Zouch Rd boundary, which had been identified as a potential historical waste burial area. It was further noted that potential USTs associated with fuel storage on Kelly Road within Block F, identified as an anomaly by geophysics survey, were beyond the scope of this 2009 audit.

For the two areas above where USTs were positively identified, the USTs and associated infrastructure fill were reported to have been removed. All associated hydrocarbon impacted soil was reported to have been removed and the excavations also validated via sample collection and analysis for contaminants of concern by URS in 2003. In Block F, the hydrocarbon impact was reported to have been removed to the extent practicable as limited by the reach of the excavator, with residual soil impact remaining at the base of the excavation. The excavated material was stockpiled adjacent to each UST location and left for future assessment. Excavations were backfilled with validated stockpile backfill sand and fill material excavated from the sports field portion of the IDS (to the north of the current assessment site and immediate surrounds).

Groundwater in Block F UST area was reported to have been assessed via installation of 2 monitoring wells – one downgradient of the excavation and one through the excavation beneath the former tankpit. Significant groundwater impact was reported to not have been identified in proximity to the Block F USTs via installation of monitoring wells and subsequent analysis of collected groundwater samples.

A copy of Figure 20B from the Coffee (2009) Site Audit Report has been included in **Appendix B3**, showing the locations of validation samples and monitoring wells installed for the validation purposes.

At the time of the audit, features including septic tanks, pits/sumps, oil/water separators, oil drums, etc had not been removed from the IDS site and it was recommended that they should be. Further characterisation of residual hydrocarbon impact at the base of Block F excavations was also required to establish the requirements for ongoing management of the residual contamination impact.

Assessment of risk from potential asbestos containing materials across the IDS was also considered warranted by the auditor. This included high risk areas – margins of existing and previously demolished buildings, underground services and areas of fill, building rubble and waste disposal. Pieces of suspected ACM were reported to have been observed in large amounts of rubbish associated with the Block F transport compound.

Based on the auditor's review of the various reports issued by URS on the investigation, remediation and validation works completed on the high risk areas, the auditor considered that the limited areas described in the reports had been appropriately remediated and validated. However, it was acknowledged that the areas actually validated by URS were limited in extent and did not necessarily

represent the whole of the sub-site in which the high risk area was located. Consequently, the auditor listed additional issues that required addressing in the sub-site where investigation, remediation and validation of high risk areas had occurred.

The issues identified in Coffey (2009) with regard to the current assessment site and immediate surrounds, or parts thereof, that required further assessment and audit included:

- Validation of impacted soil from around removed USTs including clarification of the location of stockpiled materials;
- Further assessment of residual contamination at depth in the Block F UST areas;
- Assessment of potential groundwater impact in and down gradient of UST areas; and
- An assessment for a potential UST at a fuel store on Kelly Road in Block F.

The auditor (Coffey 2009) listed outstanding possible issues for consideration during future audits, mainly related the limited areas that had been addressed in the Coffey (2009) audit not being adequate to provide a sign off of the Site as a whole. The copy of Figure 3 from the Site Audit Report (Coffey 2009), is included at **Appendix B** indicates the spatial extent of the IDS covered by the Coffey (2009) audit.

### 3.3.3 AECOM (2009) Site Audit Report

The AECOM (2009) site audit comprised an audit of investigations, remediation and validation reports completed by URS, SKM and others as completed between 2003 and 2009, as well as reviews of the Coffey (2009) audit and of the RAP (RE 2009). Figures showing the Stage II Environmental Assessment Investigation Areas has been included in **Appendix B4**. The site was reported to comprise a total footprint of 311 Ha, which for the purposes of the site assessment activities were divided by SKM during the Stage 2 investigation works into the proposed land use zones. The current assessment site and immediate surrounds fell within areas identified as areas Liverpool Council public recreational area (LRP1 comprising 10 ha), Liverpool Council residential developing communities (LRDC1, 10.7 ha) and Liverpool special uses (LSU1, 6.5 ha).

The audit report identified that significant intrusive investigation works were completed for each proposed land use area, including:

- Review of previous reports and historical aerial photographs to support the design of a site specific investigation methodology;
- Visual survey of site areas to assess potential for contamination indications, including fly tipped waste, fill areas, surface staining, etc;
- Implementation of a field investigation program, including surface and subsurface soil sampling using a drill rig or test pits and groundwater monitoring wells and subsequent laboratory analysis of samples for contaminants of potential concern;
- Assessment of the resulting data against NSW EPA endorsed land use criteria (NEPC 1999[17] and NSW EPA 1994[18]) for the proposed future land use scenario;
- Preparation of a characterisation report documenting the extent of contamination concerns, identification of potential management strategies and nominated clear conclusions on the suitability of each area for the proposed land use.

[17] *National Environment Protection (Assessment of Site Contamination) Measure* NEPC (1999)
[18] *Guidelines for Assessing Service Station Sites, sensitive land use criteria for TPH and BTEX* (NSW EPA 1994).

This audit report identified that Blocks D, E and F, formerly known as the Bardia Barracks were some of the first areas constructed in 1939. The barracks were used for sleeping, ablutions, mess halls, administration/offices, stores, transport compounds, recreation facilities and training.

In addition to the above, several issues identified in Coffey (2009) as issues requiring further assessment/consideration have also been addressed to the satisfaction of AECOM, including:

- The geophysical anomaly identified at the Block F fuel store (Kelly Rd) was likely associated with buried concrete, with no UST or conditions of concern identified;
- The RAP (RE 2009) has documented the requirements for further groundwater monitoring and assessment of residual soil impacts at the base of the Block F UST tankpit;
- Former material stockpiles associated with UST removal works had been validated and the materials removed or reinstated;
- Assessment of the potential for significant and/or widespread contamination from demolition of buildings containing hazardous materials and/or fly tipping, etc has not identified a significant issue, RAP documented procedures for the removal of fly tipped material during site works; and
- A site wide groundwater investigation was completed to close out the potential risks to human health and/or the environment from groundwater contaminant migration.

The types of contamination identified in the subsequent RAP to require further remediation and/or management comprised (across the broader IDS site):

- Fly tipped waste;
- Fragments of bonded and friable asbestos/ACM in surface soils;
- Heavy metal, PAH and petroleum (TPH) contamination in soils; and
- TPH contamination in groundwater in the vicinity of several former USTs (including Block F).

The RAP also identified the need for development and implementation of a Development Environmental Management Plan (DEMP) to manage the possible identification of small scale unexpected features as may be encountered between completed sampling locations given the long history of use by DoD. It was noted that inground features including asphaltic concrete pavements, sewerage systems, septic tanks, grease pits etc were only required to be removed during remedial works if it was required to access contaminated materials, otherwise such items would typically be removed during future development works.

The AECOM SAS (AECOM 2009) comprising a Part B SAS, certified that:

- “the nature and extent of the contamination HAS been appropriately determined; and
- the remedial action plan IS appropriate for the purpose stated above; and
- Provided the site is remediated in accordance with the RAP (RE 2009), the site CAN BE MADE SUITABLE for the following uses:
    - Residential with accessible soil, including gardens (less than 10 % fruit and vegetable contributed to intake) excluding poultry;
    - Day care centre, preschool, primary school;
    - Residential with minimal opportunity for soil access, including units;
    - Secondary school;
    - Park, recreational open space, playing field;

- Commercial/industrial; and
- National Park/Nature Reserve".

It is noted that the AECOM (2009) SAS did not certify that the Site was suitable for any particular use, only that it could be made suitable, provided certain conditions (i.e. implementation and compliance with the requirements of the RAP (RE 2009)) were met.

In his overall comments, the auditor generally concurred with the conclusions presented in the investigation, remediation and validation reports reviewed and with those in the previous site audit report (Coffey 2009) and the RAP (RE 2009). The auditor also concurred with the recommendations in those documents and noted that some of the issues raised in the Coffey (2009) audit report had not been addressed during the more recent 'Stage 2' investigation works, and so were required to be addressed during future remediation and validation works to be conducted at the Site.

### 3.3.4 AECOM (2011) Site Audit Report

The AECOM (2011) site audit comprised an independent audit of investigation, remediation and validation works referred to as Stage 3 works undertaken at the IDS site as undertaken by ERM as consultant, Synergy as remediation contractor and G-tek Australia Pty Ltd (G-tek) as unexploded ordnance (UXO) contractor respectively . The current assessment site falls entirely within the site extent the subject of this audit. The objective of the audit was to review the Stage 3 validation documentation and establish whether the IDS could be considered suitable for the various proposed land use scenarios as defined by the adopted masterplan land use zones.

The Stage 2 works as discussed in the AECOM (2009) audit included a largely systematic sampling and analysis program across the IDS site. These works identified a number of contamination 'hotspots', primarily comprising surface and near surface fill/soils impacted with heavy metals (lead and arsenic), TPH and/or ACM which required additional assessment and/or remediation. The remedial actions, in addition to clean up of identified fly tipped waste, further investigation of groundwater conditions and works to address any additional areas of concern (unexpected finds as may have been identified during the balance of the remediation works) were documented in this audit report.

The ERM works were undertaken during the period 2010 and 2011. The data gap investigation works included delineation of various identified soil 'hotspots' and groundwater monitoring to assess potential TPH impact associated with the Block F UST area, which included the installation of three additional downgradient monitoring wells given the existing wells were reported to be blocked.

The groundwater assessment downgradient of the Block F USTs did not identify residual hydrocarbon concentrations in groundwater and as such, ERM considered no further management/remediation was required with regard to groundwater in this portion of the site. In addition, it was reported that the original tankpit excavation was reopened and extended to identify the extent of the original excavation. Hard sandstone bedrock was encountered at depths of approximately 2 m below ground surface. Based on ERM notation of anthropogenic inclusions in the previous tankpit reinstatement material, the excavation spoil was disposed of from the site following successful validation of the new, extended tankpit margins (25 m by 10 m by 2 m).

The hotspot investigation activities included identified ACM fragment contamination conditions in the northern portion of the current assessment site (to the east of the parade ground) that required remediation. Whilst previously suspected ACM hotspots were not confirmed via delineation sampling and so no further actions were required.

A number of former sumps were removed from the Block F Transport Compound. These were reported to include 6 potential sumps/interceptor pits, the contents of which were pumped into drums for off-site disposal prior to excavation and removal of the infrastructure.

In addition, where buildings were demolished during the project works, ERM environmental staff and an occupational hygienist completed visual inspections of the resulting ground surface to assess the potential for contamination of the surface soils as a result of demolition activities. These works included manual removal of hazardous materials (ACM), clearance inspections, demolition of the building and then scraping of surface soils within the former building footprint and a 2 m zone surrounding the footprint, to generate a stockpile that was then removed from site. Where appropriate, validation sampling was completed. The extent of these locations as applicable the current investigation area are further documented in detailed plans from ERM included in **Appendix B5**.

It was reported that during removal of fly tipped waste in the drainage line down gradient of the parade ground, ACM fragments were identified and a subsequent surface scrape revealed significant quantities of material buried at this location, which extended beneath the creek channel. It is noted that validation samples did identify trace levels of friable asbestos fibres, less than the reporting limit at a number of locations within this excavation that remained on site at the completion of works.

The IDS ERM Stage 3 validation report was considered by the AECOM (2009) audit report to have documented works completed to close out identified data gaps. The auditor confirmed that based upon validation results, remediated areas had been completed in accordance with the requirements of the RAP (RE 2009), the groundwater conditions in the vicinity of the former USTs were considered to not be significantly impacted with regard to future residential land uses and that the balance of soils at the site were considered suitable for the proposed land uses.

However, with regard to the historical use of site and its overall size, the auditor noted that the potential remained for unexpected finds of either military origin, or contamination that may remain at the site that may be identified during future development works and as such a DEMP should be implemented.

The auditor concluded that based upon the outcomes of the review, the IDS had been remediated and validated to a standard suitable for the land use specified in the current Liverpool LEPs as well as for unrestricted uses, subject to implementation of the EMPs relevant to various portions of the site.

### 3.3.5 JBS&G (2021) Detailed Site Investigation

JBS&G was engaged by Landcom (the client) to complete a Due Diligence Data Gap Investigation for of Lot 5 within the Precinct 3 portion of the Landcom Edmondson Park property, located at Campbelltown Road, Edmondson Park. Landcom intend to divest proposed Lot 5 to facilitate proposed residential development works. A previous desktop evaluation of potential contamination status undertaken by JBS&G identified a number of data gaps within the existing assessment reports that resulted in uncertainty with regard to requirements for management of potential contamination at the site. As such, targeted investigation was proposed to provide Landcom and potential purchasers with additional information to support transaction negotiations.

The scope of works included a more detailed review of historical development records and site inspection to map areas for potential investigation of contamination issues, primarily related to ACM, buried waste, fly tipped stockpiles and per- and poly fluoroalkyl substances (PFAS) impacts to guide a subsequent intrusive investigation and laboratory analysis program. Given the limited timeframe for the investigation, groundwater assessment for PFAS was limited to sampling of existing viable monitoring wells identified upgradient of the site as historically installed for assessment of the former Block F USTs. Given the associated depot was a potential AEC for historical use of PFAS, this was considered a suitable assessment strategy in addition to assessment of soil conditions within the site. The outcomes of the assessment were to include preparation of an updated Conceptual Site Model (CSM) as part of the assessment report providing updated guidance

on potential contamination issues requiring management prior to, or during redevelopment of the site.

In addition to documenting residual site infrastructure features, the field investigation activities included the installation of testpits at targeted judgemental locations (as shown in Figure 4, **Appendix B6**). Fill material was identified across the site to a depth of between approximately 0.05 m and 0.6 m bgs across 44 testpits. A total of 30 soil samples were collected and analysed for asbestos in soil (WA 500 ml) and PFAS in addition to 5 fragments for asbestos ID. One water sample was obtained for PFAS in groundwater in addition to pH, electrical conductivity and total dissolved solids (TDS).

Bonded ACM was observed on the ground surface at scattered locations across the site. ACM fragments were identified in fill material at three sampling locations, TP25_0.2-0.3, TP06_0.2-0.3 and TP42_0-0.1, with asbestos quantification identifying concentrations of bonded ACM in fill exceeding the adopted assessment criteria at two locations (TP25 and TP42).

Limited anthropogenic material including bricks, was also observed on the surface and within the fill, often associated with further asbestos impacts. Additionally an ACM pipe, recognised to be associated with the fire hydrant, was identified in situ in the central east of the site (associated with JBS&G TP35) and a Telstra Pit containing ACM was also seen in the south-west section of the site close to the Heritage Precinct.

No other indications of significant or gross contamination in fill soils across the site, inclusive of staining, odorous soil conditions, or other visual impacts were identified during the investigation.

Laboratory results reported the absence of asbestos as asbestos fines (AF) or friable asbestos (FA) at or above the reporting limit of 0.001% w/w or the presence of respirable fibres within samples scheduled for laboratory analysis. On this basis, the impacts at the site are currently classed as non-friable (ie. bonded ACM) impacts.

Laboratory analysis of representative soil samples for PFAS compounds as contaminants of potential concern did not identify the presence of contaminant concentrations above the laboratory limit of reporting (LOR), being less than the adopted health and/or ecological based site assessment criteria appropriate for residential landuse scenarios. Further, limited groundwater analysis downgradient of former fuel infrastructure locations upgradient of the site did not identify PFAS impacts in groundwater. On this basis, there was considered to not be significant health or ecological based risks from PFAS impacts with regard to future site development proposals.

The site assessment activities were reported to have confirmed the presence of residual ACM impacts at the site associated with former infrastructure including, limited Telstra pits, underground pipework and fragments/sheeting associated with remnants of former buildings. Whilst there was no evidence of significant widespread impacted soil volumes at the site, it should be anticipated that future site development earthworks may identify further isolated areas of ground surface impacts and fill material containing ACM.

As such, it was recommended that an appropriate site management plan, including an interim AMP and development RAP be prepared to address procedures for management of occupational exposures and site contamination risks such that upon the completion of works the site may be confirmed as suitable for the proposed urban uses.

While it is noted that the vast majority of the investigation locations completed in JBS&G (2021) are outside the current investigation area, given the consistency of historical site use, the details included are still being used to inform the current investigation area CSM.

### 3.4 EPA Records

An updated search of the NSW EPA database was undertaken for the investigation area and surrounding properties. EPA records are provided in **Appendix C**. The search was completed through the following public registers:

- NSW EPA *Protection of the Environment Operations Act 1997* (POEO Act) public register of licences, applications and notices (maintained under Section 308 of the POEO Act).
    - No prevention, clean-up or prohibitions notices has been issued under the POEO Act for the site.
- NSW EPA contaminated land public register of record of notices (under Section 58 of the *Contaminated Land Management Act 1997* (CLM Act)).
    - No notices have been issued under the CLM Act for the investigation area and immediate surroundings.
- NSW contaminated sites notified to the EPA (under Section 60 of the CLM Act).
    - The investigation area or immediate surrounding are not on the list of NSW contaminated sites notified to the EPA.
- The closest contaminated site is a service station in Leppington, 3.5 km north-west of the site. The service station was listed as not required to be regulated under the CLM Act.

### 3.5 Per- and polyfluoroalkyl substances (PFAS) Investigation Program.

The investigation area is not listed by the NSW EPA on the NSW Government PFAS Investigation program website. The closest PFAS investigation areas identified by the EPA are detailed below:

- Kemps Creek NSW Rural Fire Service (Devonshire Rd, Kemps Creek, NSW 2178) approximately 9 km north-west of the site; and
- Holsworthy Barracks (Macarthur Drive, Holsworthy, NSW 2173) approximately 10 km north-east of the site.

The adjoining site to the north, east and south comprises land formerly known as the Ingleburn Defence Site (IDS) site. Specifically, the POL depot, Block F UST area and former barracks areas were located within the investigation area, with additional buildings present across the investigation area assumed to comprise training areas, and officers quarters. The IAC land has not been identified as having an elevated risk of PFAS compounds given the land was primarily ground infantry training grounds and has not formally been nominated for inclusion on the NSW Government Investigation Program, and as such, is considered to not present a concern with regard to potential on-site migration sources for the investigation area.

### 3.6 Australian and NSW Heritage Register

A search of the NSW Heritage database did not identify any heritage listed items at the investigation area.

Ingleburn Military Heritage Precinct (IMHS) and Mont St Quentin Oval, are listed sites, located immediately adjacent to the site, being Lot 4 to the north of Campbelltown Road and the Oval to the south of the investigation area and Campbelltown Road.

A search of the Australian Heritage database identified the investigation area as part of a heritage listed item, Ingleburn Defence Site, located at Campbelltown Road.

Both Australian Heritage Trust and NSW Heritage information are included in **Appendix D**.

### 3.7 Aerial Photographs

Historical aerial photographs provided by the Land and Property Information Division of the Department of Finances, Services and Innovation or Near-Map Imagery were reviewed for this assessment (**Appendix E**). The aerial photograph review identified the following features in relation to historical use of the investigation area:

1947 The investigation area appeared to be partially developed by buildings associated with IDS, with evidence of large barracks buildings present in the east and the west of the investigation area. Vegetation was observed sparsely across the investigation area, specifically aligning with established roads. The central portion of the investigation area appeared to comprise a vacant open grassed area with a drainage line extending across this portion in a south-west to north-east orientation.

The surrounding land to the north west, east and south appeared to be similar to the investigation area with constructed army barracks buildings and associated access roads. The land to the north was observed to be vegetated with evidence of roads crossing the investigation area. The land to the west across an established road appeared to be agricultural/orchard fields.

1956 The investigation area appeared largely similar to the 1947 image apart from additional buildings having been constructed specifically in the central and northern portions of the investigation area. The vegetation present in the 1947 image was identified to be more established.

A parade ground had been constructed to the north of the investigation area, with sports fields identified to the north of the parade ground and south of Campbelltown Road. Further to the north, the rifle range had been constructed within what was known as the training ground area to the east of Zouch Road.

1965 The investigation area appeared largely similar to the 1956 image.

A portion of structures, identified to the south and east of the site had been removed, with the balance of the surrounding land uses appeared similar to the 1956 image.

1975 The investigation area appeared to be similar to the 1965 image apart from evidence of ground disturbance/construction in the south-east and north-western portions of the investigation area.

The former agricultural site to the west of Zouch Road had been developed with several additional buildings in the south-east portion of the property (consistent with JW layout). The balance of the surrounding land uses appeared similar to the 1965 image.

1984 The investigation area appeared largely similar to the 1975 image.

Additional structures were evident to the west of the investigation area beyond Zouch Road. The former rifle range structures within the IDS training grounds appeared to have been demolished or reshaped. The balance of the surrounding land uses appeared similar to the 1975 image.

1991 The investigation area appeared largely similar to the 1984 image.

Additional structures appeared on the adjacent properties to the north and west of the investigation area, with the balance of the surrounding land uses similar to the 1984 image.

1998 The investigation area appeared largely similar to the 1991 image.

Additional structures appeared to be situated on the lot to the west of the investigation area. Former barracks structures had been removed in the areas to the south of the investigation area, within the broader IDS area.

2009 The majority of the former buildings within the investigation area had been demolished, with limited vegetation remaining across the investigation area.

Buildings in the surrounding area to the east and south of the investigation area had been removed since the 1998 image. Additional residential structures were present further to the north-west of the investigation area associated with new residential development.

2015 Further demolition of remaining buildings had occurred since the 2009 image with limited building footprints remaining within the investigation area. A recently constructed electrical substation compound was apparent to the south-west of the site. Additional vegetation and tree cover were present across the investigation area.

The Edmondson Park Railway line and road infrastructure had been established north-east of the site, with demolition of former defence buildings and establishment of additional residential structures and road infrastructure. A residential subdivision had been constructed to the south of the site, beyond the recreational open space.

2022 All buildings across the investigation area have been removed with residential paved areas remaining apparent. The canopy cover had increased across the investigation area.

The surrounding areas were characterised by recent construction of the Edmondson Park Railway line infrastructure and associated Town Centre development to the north-east of the investigation area residential structures to the south and apartment buildings east of the investigation area. Increased vegetation appeared in the north and north-western portions of the investigation area, in the areas of Edmondson Park Regional Park.

### 3.8 Integrity Assessment and Summary of Site History

Historically, the investigation area appeared to have been used as part of the Ingleburn Defence Site. Based on aerial imagery, the investigation area is assumed to have been utilised in this capacity until demolition of buildings was begun in 1998. The surrounding areas to the north, east and south were all observed to form part of the IDS, with the land to the west as a Jehovah's Witness development. No works have been observed within the investigation area since 2015.

Based on the range of sources and the general consistency of the historical information along with historical aerial imagery, it is considered that the historical assessment has an acceptable level of accuracy with respect to the potentially contaminating activities that historically occurred at the investigation area. These appear to relate predominantly to use of the land for use as a defence purposes.

# 4. Conceptual Site Model

## 4.1 Potential Areas of Concern

Based on the history review and previous investigation activities as documented in **Section 3** and observations made during the JBS&G inspection of the investigation area, potential areas of environmental concern have been identified at the site as presented in **Table 4.1**.

**Table 4.1: Areas of Environmental Concern and Associated Contaminants of Potential Concern**

| Areas of Potential Environmental Concern (APECs) | Constituents of Potential Concern (COPCs) |
|---|---|
| The presence of fill material and/or associated waste materials of unknown origin used to create current site levels | Heavy metals, Petroleum Hydrocarbons (TRH), Polycyclic Aromatic Hydrocarbons (PAHs), Benzene, Toluene, Ethylbenzene and Xylene (BTEX Compounds), Polychlorinated Biphenyls (PCBs), Organochlorine Pesticides (OCPs), Organophosphorus Pesticides (OPPs), Per and poly-fluoroalkyl substances (PFAS) and Asbestos |
| Potential for training activities completed within the investigation area and/or surrounds to have resulted in residual contamination beyond that previously identified and remediated by DoD programs | TRH/BTEX, PFAS, Asbestos, PFAS |
| Potential for hazardous building materials to be present within soil as a result of historical site features, infrastructure, etc remaining at the site | Lead and Asbestos |
| Potential for fly tipped materials, inclusive of identified waste materials and vegetated stockpiles. | Heavy metals, TRH/BTEX, PAHs, Asbestos |

The identified APECs and COPCs as noted above are consistent with those identified during the investigation area audit in 2011 apart from PFAS as an emerging contaminant of concern since 2011, in addition to activities as have occurred at the investigation area in the period since completion of the audit. All former buildings within the investigation area have been demolished since 2009 and portions of the investigation area have been the subject of limited earthworks, such that there remains the potential that near-surface impacts resulting from post-2011 activities may have resulted in impacts across the current site footprint.

As noted in **Section 3.3**, whilst the investigation area comprises former IAC land, there is no definitive evidence available indicating the historical use of PFAS within the investigation area, or portions therefore. However, given the historical presence of DoD personnel, depot facilities for the storage and use of hydrocarbons, etc within the investigation area, it is considered appropriate to identified PFAS as a COPC warranting further assessment.

## 4.2 Potentially Contaminated Media

Potentially contaminated media comprise:

- Fill materials;
- Surface and near surface natural soils;
- Groundwater; and
- Soil Vapour.

While no specific historical information is available identifying sources of potential fill material, or specific activities beyond those previously identified in previous site audits and JBS&G (2019), it is assumed that fill material present at the investigation area is either a result of localised cutting activities and/or material sourced more broadly from the IDS site or nearby surrounds during historical development of the investigation area. With regard to the age of the infrastructure and site history, whilst it is anticipated that there was limited occurrence of potentially contaminating activities at the investigation area prior to construction, given the scale of the apparent cut/fill

works, there is the possibility that fill material placed within the site (inclusive of potential burial of waste material) may have been contaminated prior to placement.

On this basis, fill material identified across the investigation area and potential underlying natural soils have the potential to be impacted. It is noted fill was not encountered in some portions (west) of the investigation area and as such natural soils in these areas are not likely impacted as a result of filling activities, however may have been contaminated as a result of activities completed across the investigation area.

Based on the potential leachability of COPCs within the surface soils/fill materials, the risk of vertical migration of contamination from the surface soils/fill material into the underlying natural soils and groundwater is considered a possibility, but of low potential given the low permeability clayey nature of the fill material and underlying natural soil/shale profile.

On this basis, the potential for groundwater to be a contaminated medium is considered low. Subject to identification of significant soil contaminant conditions within fill and/or natural soil at the investigation area, groundwater is considered to not require extensive further consideration as a potentially contaminated media at this time. However, in order to close out the existing data gap with respect to the potential for PFAS impacts, groundwater has been identified as a potentially contaminated media at this point in time. Soil vapour is a potentially contaminated medium in the event that volatile organic impacts are identified in soil or groundwater, which is considered to be of low probability. As with groundwater, in the absence of significant soil impacts, soil vapour will not require further consideration as a potentially impacted medium.

As there are no permanent water bodies located at the investigation area, surface water is not considered to be a potentially contaminated media. However, given the potential for concentration of surface water flows during rainfall events, surface soils associated with these drainage channels are identified as potential areas of contamination concern associated with migration of contaminants.

### 4.3 Potential for Migration from Site

Contaminants generally migrate from the investigation area via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

The COPCs identified at the site are generally in solid (e.g. asbestos, PAHs and metals), liquid (e.g. TRH, BTEX and PFAS) or gaseous (e.g. BTEX, volatile TRH, semi-volatile PAHs) form. Given the current character of the site, generally being permanently paved, well vegetated with grass cover or otherwise covered with mulch, there is limited potential for migration of solid contaminants from the site via windblown dust. As such, this is considered not to be a current complete exposure pathway, however further consideration may be required with respect to the proposed development works.

Surface water is expected to primarily leave the site via overland flow off the paved/well vegetated ground surface, however, infiltration of water into underlying soils is possible in the landscaped/mulch covered areas. Therefore, infiltration of water-soluble contaminants into the surface soils and eventually groundwater is considered be a potential offsite migration pathway, particularly with regard to PFAS should historical use at the site occurred in areas close to ephemeral drainage lines.

The potential migration of liquid and/or volatile contaminants through the subsurface is low given the anticipated sources of potential liquid/volatile contaminant sources at the site and the low permeability nature of the subsoils and shale bedrock.

### 4.4 Exposure Pathways and Receptors

Based on the COPC identified in various media as discussed above, the exposure pathways for the site include:

- Potential inhalation of airborne asbestos fibres and/or impacted dust particles (if present) during future site development activities associated with pavement/infrastructure removal and other ground disturbance activities; and/or
- Potential dermal and oral contact with and ingestion of impacted soils as present at shallow depths and/or accessible by future excavations associated with development works and future public open space/recreational uses; and/or
- Inhalation of COPC vapours migrating upwards from fill material of unknown origins (if present).

Inhalation of vapours, dermal contact or ingestion of groundwater are not considered potential exposure pathways based on the above.

Potential receptors of environmental impact within the site which will need to be addressed with respect to the suitability of the site for the proposed use include:

- future site users/visitors and workers who may potentially be exposed to COPCs through direct contact with impacted soils and/or inhalation of dusts / fibres/vapours associated with impacted soils; and/or
- Excavation/ construction/ maintenance workers conducting activities at the site, who may potentially be exposed to COPC through direct contact with impacted soils present within excavations and/ or inhalation of dusts/ fibres associated with impacted soils; and/or
- Existing and/ or future users/ occupants of adjoining residential/ commercial properties should contamination be identified to be migrating from the current site; and/or
- On-site ecological receptors within current vegetated areas of the site in addition to those to be established on the site including shrubs, grasses and some proposed plantings of larger trees and associated fauna; and/or
- Downgradient ecological receptors including the Regional Park and potential permanent stream bodies to the north-east of the site.

The site is currently primarily covered by vegetation, presenting ongoing potential ecological receptors, although no vegetation stress relating to potential contamination from known AECs was observed during site inspection. Flora on site are potential receptors of shallow soil contamination if present. Possible off-site ecological receptors include the ecological communities of the riparian zone in the north of the site and the downstream creeks which this drainage feature flows into.

### 4.5 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPC as either liquids or gasses.

Man-made preferential pathways may be present throughout the site, generally associated with sub-surface services/infrastructure remnant at the site and disturbed natural / fill materials beneath existing ground surface, and at near surface depths over the remainder of the site. Fill materials are anticipated to have a higher permeability than the underlying natural soil and/or bedrock.

Natural preferential pathways are likely limited to natural lithological boundaries, such as between more porous soils and weathered/residual bedrock, where infiltrating groundwater is vertically confined and begins to migrate laterally, and surface water drainage features.

### 4.6 Data Gap Identification

As discussed in **Section 3**, there is an existing site audit statement (AECOM 2011) that states the site is considered suitable for various urban land uses consistent with the redevelopment uses. However, given the age of the statement and various other factors, there are a number of potential AECs and/or COPCs identified by the PSI (JBS&G 2022) that require further consideration such that conclusions can be drawn under current NSW EPA Guidance with regard to the suitability of the site for the proposed land use. These AECs/COPCs are further discussed following:

- The AECOM (2011) reports identified the potential presence of residual ACM impact associated with previous and remnant infrastructure at the site. In accordance with current NSW EPA guidance, it is considered appropriate to complete further characterisation, inclusive of asbestos quantification and sampling using WA DOH (2009) / NEPC 2013 endorsed field and laboratory methods at representative locations to confirm the nature and extent of asbestos in soil and ACM infrastructure that will require management during redevelopment activities;
- Potential for PFAS in soil and/or groundwater impacts associated with historical use of the site, given former investigations pre-dated the identification of PFAS compounds as COPCs in Australia, particularly in relation to DoD facilities, particularly relating to the storage and/or use of hydrocarbon containing compounds;
- Assessment of potential contamination associated with former building footprints as may have been demolished following completion of intrusive investigation/remediation works as documented in AECOM (2011) and/or associated with remnant building foundations remaining at the site for which no intrusive investigation has previously been documented. The primary COPCs associated with such features will comprise asbestos/ACM and OCPs/OPPs, with secondary COPCs associated with the potential presence of fill material – heavy metals, PAHs, and TRH/BTEX;
- Characterisation of any minor stockpiled material present within the site as a result of fly tipping activities, resulting in waste material of unknown origin;
- The potential presence of fill material of unknown origin and/or buried waste material across the site as a result of historical site development activities. Whilst sufficient sampling has historically been completed to demonstrate the absence of widespread impacted fill material, additional limited investigation is considered appropriate to provide current assessment data to confirm the historically reported data and enable comparison with current amended ecological and health based investigation levels for heavy metals, PAHs and TRH in addition to provision of preliminary waste classification data should it be identified that material will require off-site disposal during the proposed development works.

# 5. Sampling Plan and Methodology

## 5.1 Data Quality Objectives

Data quality objectives (DQOs) were developed for the investigation, as discussed in the following sections.

### 5.1.1 State the Problem

It is understood that the investigation area is proposed to be developed for mixed-use land uses including open space and areas not currently certified for vegetation removal. The desktop review and site inspection undertaken as part of the PSI (JBS&G 2022) has identified a range of potential AECs requiring further site assessment.

As a result, further site assessment including soil and groundwater sampling and visual inspection is required to characterise contamination conditions at the investigation area that may be potentially unacceptable for the proposed development from a health and ecological health perspective such that conclusions/recommendations may be drawn on the suitability of the site for the proposed development.

### 5.1.2 Identify the Decision

Based on the decision-making process for assessing urban redevelopment sites detailed in EPA (2017[19]), the following decisions must be made:

- Are there any unacceptable risks to likely future on-site receptors?
- Are there any issues relating to background soil concentrations that exceed appropriate site soil criteria?
- Are there any unacceptable human health and ecological risks present in surface and/or groundwater underlying the investigation area?
- Are there any impacts of chemical mixtures?
- Are there any aesthetic issues at the investigation area?
- Is there any evidence of, or potential for, migration of contaminants from the investigation area?
- Is a site management strategy required?

### 5.1.3 Identify Inputs to the Decision

Inputs identified to provide sufficient data to make the decisions nominated above include:

- Review of historical site information including previous reports prepared with regard to site conditions;
- Observations of the current site conditions made during the current investigation;
- Physical observations and interpretation of potentially contaminated media through the collection of soil, surface water and groundwater samples;
- Development of appropriate assessment criteria for evaluation of soil, surface water and groundwater impacts based on the proposed use of the site;
- Laboratory analysis of soil and groundwater samples of potentially contaminated media for COPC; and

[19] *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme*, 3rd Edition, NSW EPA, 2017 (EPA 2017)

- Confirmation that data generated by sampling and analysis are of an acceptable quality to allow reliable comparison to assessment criteria as undertaken by assessment of quality assurance / quality control (QA/QC) as per the data quality indicators (DQIs) established in **Section 2.1.6**.

### 5.1.4 Define the Study Boundaries

The lateral study boundaries are limited to the investigation area, as shown on **Figure 2**.

The vertical extent of the soil investigation was a maximum depth of 3.0 m, which comprised a depth at least 0.5 m into natural materials (or prior refusal), whichever was the shallower. The groundwater wells were installed to a maximum depth of 12 m below ground surface (bgs), identified as being 2 m below the encountered groundwater depth.

Due to the project objectives, seasonality was not assessed as part of this investigation. Data is therefore representative of the timing and duration of the current investigation.

### 5.1.5 Develop and Decision Rule

Analytical data for potentially contaminated media will be assessed against NSW EPA endorsed criteria as identified in **Section 3**. A summary of the decision rules to be adopted for each of the environmental issues required to be addressed are outlined in **Table 5.1** below.

**Table 5.1: Summary of Decision Rules**

| Decisions Required to be Made | Decision Rule |
|---|---|
| 1. Are there any unacceptable risks to on-site future receptors? | Historical and current analytical data were compared against EPA endorsed criteria.<br>Statistical analysis of the data were completed, where necessary, in accordance with relevant guidance documents, as appropriate, to facilitate the decisions. The criteria in **Section 8** was adopted with respect to soil.<br>Either: the reported concentrations was below the Site criteria;<br>Or: no single analyte concentration exceeds 250 % of the adopted site criterion; and the standard deviation of the results was less than 50 % of the Site criterion;<br>And: the 95 % UCL of the average concentration for each analyte is below the adopted site criterion.<br>If the statistical criteria stated above were satisfied, the answer to the decision was **No**.<br>If the statistical criteria were not satisfied, the answer to the decision was **Yes**. |
| 2. Are there any issues relating to the local area background soil concentrations that exceed appropriate soil criteria? | If COPC concentrations in soils exceeded published background concentrations (NEPC 2013), the answer to the decision was **Yes**.<br>Otherwise the answer to the decision was **No**. |
| 3. Are there any unacceptable human health and ecological risks present in groundwater underlying the site | Groundwater analytical data was compared against EPA endorsed criteria and reported background concentrations.<br>If the criteria stated above were satisfied, the answer to the decision was **No**.<br>If the criteria were not satisfied, the answer to the decision was **Yes.** |
| 4. Are there any chemical mixtures? | Was there more than one group of contaminants present which increase the risk of harm?<br>If there was, the answer to the decision was **Yes**.<br>Otherwise, the answer to the decision was **No**. |
| 5. Are there any aesthetic issues? | If there were any asbestos containing material (ACM) fragments on the ground surface, any unacceptable odours or soil discolouration, or excessive extraneous/foreign/waste materials, the answer to the decision was **Yes**.<br>Otherwise, the answer to the decision was **No**. |
| 6. Is there any evidence of, or potential for, migration of contaminants from the site? | Based on assessment results, was there any evidence of, or the potential for, migration of unacceptable contaminant concentrations to migrate from the site, inclusive of impacts to groundwater based on assessment of data against ecological investigation levels?<br>If yes, the answer to the decisions was **Yes**.<br>Otherwise, the answer to the decision was **No**. |

| Decisions Required to be Made | Decision Rule |
|---|---|
| 7. Is a site management strategy required? | Is the answer to any of the above decisions Yes?<br>If yes, a site management strategy was required.<br>If no, a site management strategy was not required. |

### 5.1.6 Specific Limits on Decision Errors

This step was to establish the decision maker's tolerable limits on decision errors, which were used to establish performance goals for limiting uncertainty in the data. Data generated during this assessment must be appropriate to allow decisions to be made with confidence.

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NSW EPA, National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM) (NEPC 2013[20]), appropriate Data Quality Indicators (DQIs, used to assess quality assurance / quality control) and standard JBS&G procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data was assessed against pre-determined DQI established for the project as discussed below in relation to precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS parameters). The acceptable limit on decision error is 95% compliance with DQIs.

The DQIs and data assessment criteria are summarised following and presented in **Table 5.2**:

- **Precision** – measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** – measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** – expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** – expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; and ensuring analysing laboratories use consistent analysis techniques; and reporting methods.
- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** – expresses the appropriateness of the chosen field and laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

[20] National Environment Protection (Assessment of Site Contamination) Measure 1999. As compiled 16 May 2013 National Environment Protection Council (NEPC 2013)

**Table 2.2: Data Quality Indicators**

| Data Quality Indicators | Frequency | Data Quality Criteria |
|---|---|---|
| **Precision** | | |
| Blind duplicates (intra laboratory) | 1 / 20 samples/media | <50% RPD[1] |
| Split Duplicated (Inter laboratory) | 1 / 20 samples/media | <50% RPD[1] |
| Laboratory Duplicates | 1 / 20 samples/media | <50% RPD[1] |
| **Accuracy** | | |
| Surrogate spikes | All organic samples | 70-130% recovery |
| Laboratory control samples | 1 per lab batch | 70-130% recovery |
| Matrix spikes | 1 per lab batch | 70-130% recovery |
| **Representativeness** | | |
| Sampling appropriate for media and analytes | All samples | -[2] |
| Samples extracted and analysed within holding times. | - | Soil: organics (14 days), inorganics (6 months)<br>Water: organics (7-14 days), inorganics (6 months) |
| Laboratory blanks | 1 per lab batch | <LOR |
| Trip spike | 1 per lab batch (soil only) | 70-130% recovery |
| Storage blank | 1 per lab batch (soil only) | <LOR |
| Equipment/rinsate blank | 1 per sampling event/media | <LOR |
| **Comparability** | | |
| Standard operating procedures for sample collection & handling | All Samples | All Samples |
| Standard analytical methods used for all analyses | All Samples | NATA accreditation |
| Consistent field conditions, sampling staff and laboratory analysis | All Samples | All samples[2] |
| Limits of reporting appropriate and consistent | All Samples | All samples[2] |
| **Completeness** | | |
| Sample description and COCs completed and appropriate | All Samples | All samples[2] |
| Appropriate documentation | All Samples | All samples[2] |
| Satisfactory frequency and result for QC samples | | 95% compliance |
| Data from critical samples is considered valid | - | Critical samples valid |
| **Sensitivity** | | |
| Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria | All samples | LOR ≤ site assessment criteria |

[1] If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgment will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.

[2] A qualitative assessment of compliance with standard procedures and appropriate sample collection methods will be completed during the DQI compliance assessment.

### 5.1.7 Optimise the Design for Obtaining Data

The purpose of this step was to identify a resource-effective field investigation sampling design that generates data that are expected to satisfy the criteria specified in the preceding steps of the DQO process.

Various strategies for developing a statistically based sampling plan were identified in *Sampling Design Part 1 - Application* (EPA 2022[21]). EPA (2022) recommended that for sites with an area in excess of 5 ha, a stratified sampling approach was utilised whereby individual site areas were sampled based on their relative risk of potential impacts.

[21] *Environment Protection Authority – Sampling Design Part 1 – Application – Contaminated Land Guidelines*. Environment Protection Authority, August 2022 (EPA 2022)

The site history and setting were well understood with previous investigations across the site that included advancement of 142 test pits (SKM 2008[22]) and 44 test pits across Lot 5 (JBS&G 2021[23]) of which a portion fall within the current investigation area footprint. Given the identified data gaps, a combination of a systematic and targeted fill/soil sampling program was completed, including sampling soil from test pits, and boreholes advanced to install groundwater monitoring wells. The soil sampling program was designed to characterise the identified data gap COPCs (both chemical and asbestos) across the extent of the site. Specifically, the sampling program was completed (as shown on **Figure 3B**) inclusive of:

- A total of 24 sampling locations (including three test pits targeting fly tipping, four test pits targeting identified stockpiles for preliminary assessment of their potential suitability for on-site reuse and fill across the site) were advanced on a combination of systematic and targeted locations skewed towards AECs.
    - Targeted judgemental sampling (ten locations, PF01 – PF09 and UST01) were installed in previously validated areas to further characterise asbestos and other chemical COPC to the standard of current guidance. This additional sampling was completed by backhoe to support the existing characterisation data as reported historically.
    - Targeted sampling of four stockpiles identified onsite (SP01 – SP04) completed via backhoe test pitting for a range of COPC to provide initial characterisation data to support identification of management requirements for this material. Whilst this density of sampling does not meet the NSW EPA (2022) minimum sampling density characterisation requirements for stockpiled material, it was considered suitable to establish requirements for management decisions such that measures may be included in the RAP for final waste classification and/or reuse validation.
    - Targeted sampling of three identified locations of fly tipped materials (FT01 – FT03) via backhoe test pitting for a range of COPC to determine characterisation data for potential waste classification in consideration with NSW EPA (2014) *Waste Classification Guidelines.*
    - Systematic characterisation sampling via test pitting of existing fill in seven locations (DG01 – DG07) where no available data has been made available for asbestos and/or chemical COPC on the approximate 40 m grid that has been completed across the site to date.
- Following service locating completed during field investigation and completion of inspections to identify any potential pipe outlets, trenches were advanced in two areas (HD01 and HD02) adjacent to marked services and/or potential drainage pipework to assess the potential presence of ACM conduits and/or historical drainage infrastructure, so the construction materials could be identified and requirements established for management decisions such that measures may be included in the RAP.
- A targeted groundwater investigation was completed to assess the areas of highest risk posed by the identified site AECs. Three monitoring wells (MW01 to MW03) were, installed during the geotechnical investigation. One monitoring well (MW01) was installed in the southern most portion of the site, adjacent to the southern boundary of the current investigation area. One monitoring well (MW02) was installed to the east of the former POL depot, being downgradient of this potential contaminating activity site, and one monitoring well (MW03), was installed on the down- gradient boundary of the Precinct 3 site boundary,

[22] *Ingleburn Defence Site CCC – Residential and Sensitive Land Uses – Stage 2 Environmental Investigation.* Sinclair Knight Merz December 2008 (SKM 2008)

[23] *Detailed Site Investigation, Lot 5, Precinct 3 Edmondson Park, Campbelltown Road Edmondson Park, NSW*. JBS&G Australia Pty Ltd. Ref: 57486/138637 (Rev 0) 6 July 2021 (JBS&G 2021)

being hydraulically down-gradient of location of historical site features within the Precinct 3 site boundary. Whilst the groundwater investigation is largely targeted to AECs, the spacing of the monitoring wells toward the up and down-gradient boundaries of the site provides for the assessment of broadscale groundwater conditions at the site.
In addition to the three newly installed groundwater monitoring wells, one existing groundwater monitoring well (MWF3) as identified on Lot 3 during the JBS&G (2021) investigation and located during the August 2022 site inspection was also sampled. This monitoring well was located to the east of and therefore downgradient of the reported former UST infrastructure in the central portion of Lot 3.

## 5.2 Soil Sampling Methodology

### 5.2.1 General

Prior to intrusive works commencing at the investigation area, the following was undertaken:

- Development of site-specific Safe Work Method Statements (SWMS) and Job Risk Assessments (JRAs) for site work;
- Completion of a Dial Before You Dig (DBYD) search; and
- Clearance of intrusive sample locations via a professional accredited service locator.

### 5.2.2 Test pits

Test pit soil sampling locations were advanced mechanically via the use of a backhoe in unsealed accessible areas of the site. Soil samples were collected from surface soils (0-0.01 m), 0.3 m, 0.5 m and then at 0.5 m to 1 m intervals to a maximum depth of 3 m or 0.3 m into natural materials (or prior refusal), whichever was the shallower, noting that sample intervals were amended as appropriate to ensure only discrete material types are collected for each sample.

During the collection of soil samples, material was inspected from each soil horizon/1 m interval and features such as seepage, discolouration, staining, odours, ACM and other indicators of contamination are noted on the test pit logs (**Appendix F**). A photographic log is included in **Appendix A.**

Test pits/trenches were excavated to visually identify the potential for ACM conduits and or drainage pipework following identification of services onsite via service locating.

Within test pits, soil samples were collected from the middle of the backhoe bucket to minimize disturbance and risk of cross contamination. Collected samples were immediately transferred to laboratory supplied sample jars and bags (for asbestos analysis). The sample jars were transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was completed and forwarded with the samples to the testing laboratory. Preservation of the primary soil and QA/QC samples obtained during this investigation were completed in accordance with the protocols outlined in NEPC 2013. Based upon field observations, samples were analysed in accordance with the laboratory schedule in **Table 5.3**.

Not all samples collected were analysed. All samples remain at the primary laboratory for a period of two months for possible future analysis (subject to holding times) if required following the receipt of sample results.

### 5.2.3 Field PID Screening

Soil samples were screened onsite during the works using a photo-ionisation detector (PID) to assess the potential presence of volatile organic compounds (VOCs). Samples obtained for PID screening were placed in a sealed plastic bag for a period of approximately 5 minutes to equilibrate, prior to a PID being attached to the bag. Readings were then monitored for a period of approximately 1

minute or until values stabilised and the stabilised/highest reading is recorded on the test pit/borehole logs. Calibration records are provided in **Appendix G.**

### 5.2.4 Asbestos Quantification of Accessible Fill Based Soils

Asbestos quantification investigation was conducted via backhoe at all test pit locations. Asbestos in soil was quantified by the methods advised in WA DoH (2009[24]) and NEPC (2013) guidelines by an appropriately trained JBS&G scientist experienced in the identification of asbestos. The following method was adopted during excavation works:

- Test pits was advanced through the fill soil profile at 1 metre intervals, or to the depth of different strata (whichever is shallower) and extend (where practicable) into the underlying natural soils;
- ACM was quantified by the methods advised in NEPC (2013), in accordance with DOH (2009) with 10 L samples from test pits collected (per meter/fill stratum). The 10 L sample was sieved in the field using a 7 mm sieve and any ACM fragments retained in the sieve was collected, photographed and double bagged. All identifiable ACM or AF/FA was collected in separate sample bags (*i.e.*, one sample bag for bonded ACM and one sample bag for FA per each 1 m interval/fill stratum) for weighing using an independently calibrated scale (0.01 g accuracy) to enable asbestos in soil concentrations to be calculated;
- Where more than one distinct fill material was observed, separate asbestos calculation was completed for each material type; and
- A field observation log for each sampling location was recorded, noting the presence, type and status or absence of asbestos, ground surface details (e.g., concrete, exposed soils or grass) lithological description, moisture, volume of spoil quantified at each depth and any other observable contamination indicators such as staining, malodorous materials, ash and slag.

Asbestos percentages in soil is calculated as per the formula below:

$$\%w/w\ asbestos\ in\ soil = \%\ asbestos\ content\ x \frac{(bonded\ ACM\ or\ FA)(kg)}{soil\ volume\ (L)\ x\ soil\ density\ (kg/L)}$$

For bonded ACM, an asbestos content of 15% was used, in accordance with enHealth (2013[25]).

For FA, a conservative asbestos content of 100% was used.

## 5.3 Monitoring Well Installation and Sampling Methodology

### 5.3.1 Well Installation

Three boreholes, completed as part of the geotechnical investigation works, were converted into groundwater monitoring wells as detailed below. Boreholes were extended to the target depth using a tracked Geoprobe drill rig using 120 mm diameter solid flight auger drilling rods. All groundwater works were undertaken in accordance with the methodologies outlined in NEPC (2013). Wells were constructed as follows:

- The monitoring wells were constructed using 50 mm Class 18 uPVC screen and casing (pressure rated to conform to AS1477).
- A graded sand pack was installed from the bottom of the drilled borehole to approximately 0.5 m above the screened interval. A bentonite seal of approximately 0.5 m was then

[24] *Guidelines for the Assessment Remediation and Management of Asbestos-Contaminated Sites in Western Australia*, 2009. Western Australia Department of Health (WA DoH), (WA DoH 2009)

[25] *Asbestos, A guide for householders and the general public, enHealth, February 2013 (enHealth 2013).*

installed above the sand layer. The wells were then left as standpipes, backfilled flush to surface level with an appropriate airtight cap fitted at the well opening.

- Wells were developed with high density polyethylene (HDPE) developing tubing and attached foot valve. Development was undertaken until the wells ran dry. This is to appropriately restore hydraulic conductivity with the surrounding aquifer following drilling and to reduce sample turbidity.

On completion of well installation, the monitoring wells were each be surveyed by a registered surveyor.

Groundwater well installation locations are presented on **Figure 3B**. Borelogs including well construction details are provided in the PSM Geotechnical report (PSM, 2022[26]).

### 5.4 Groundwater Sampling Methodology

The three newly installed monitoring wells (MW01 to MW03) in addition to existing monitoring well (MWF3), were sampled for this investigation. Following installation, each well was developed and allowed to settle for at least 3 days prior to sampling.

Assessment of groundwater for PFAS was completed in accordance with the *PFAS National Environmental Management Plan 2.0* (NEMP 2020) inclusive of low-flow sampling techniques and including appropriate decontamination and sampling procedures.

- Prior to sampling, groundwater levels were gauged with an interface probe (IP) to assess standing groundwater levels (SWLs) and the potential presence of non-aqueous phase liquid (NAPL) within the groundwater well;
- Following gauging, HydraSleeves were placed in each well using PFAS free equipment. Each HydraSleeve remained in each well for a minimum of 1 hour before being removed for sampling. Groundwater collected from each HydraSleeve was then transferred directly into laboratory supplied PFAS free sampling containers and placed in a chilled esky for transport to the laboratory;
- Following PFAS sampling, low flow pumping was undertaken with a peristaltic pump using new disposable silicone tubing and disposable high-density polyethylene (HDPE) tubing for sampling at each monitoring well to remove standing/static water;
- Monitoring wells were purged at the highest possible flow rate while ensuring minimal drawdown of the water column. Field parameters of pH, conductivity, redox and temperature were measured with field electrodes in a flow cell and samples obtained once the parameters stabilised such that:
    - Consecutive EC readings within 3 %;
    - Consecutive Eh readings within 10 mV;
    - Consecutive DO readings within 10 %; and
    - Consecutive pH readings within 0.5.
- Groundwater samples were transferred directly to laboratory supplied sample bottles. Sample bottles were clearly marked with sample identification details and transferred to an chilled esky. Chain of custody documentation accompanied the samples to the receiving laboratory.

[26] *Residential Development, Edmondson Park South – Results of Geotechnical Investigation*. Ref: PSM4815-004L Rev1. PSM Consult Pty Limited. Dated 24 November 2022 (PSM, 2022)

- During the development, purging and sampling, features such as discolouration, staining, odours and other indications of contamination were noted of field forms;

Groundwater samples were analysed in accordance with the laboratory schedule provided in **Table 5.3**.

### 5.5 Decontamination of Sampling Equipment

Prior to the commencement of soil and groundwater sampling activities, non-disposable sampling equipment was cleaned with deionized water/detergent spray, rinsed with water and then air dried. The equipment was then inspected to ensure that no soil, oil, debris or other contaminants are apparent on the equipment prior to the commencement of works. Decontamination activities were repeated as appropriate between further sampling. Records of decontamination are provided in **Appendix G**.

A rinsate sample was obtained from non-disposable sampling equipment following completion of each day of field sampling activities to confirm the effectiveness of the decontamination procedures implemented on re-usable sampling equipment.

### 5.6 Duplicate Sample Preparation

At selected sample locations, sufficient soil and groundwater was collected to provide a primary, blind (intra-lab) duplicate and split (inter-lab) duplicate samples. The collected samples were divided laterally into three samples with minimal disturbance to reduce the potential for loss of volatiles and placed in three clean glass jars, sample bags and sampling bottles as appropriate. Soil samples were not homogenised in order to minimise the loss of volatiles. Each sample was labelled with primary, duplicate or triplicate sample identification before being placed in the same chilled esky for transport to the laboratory.

### 5.7 Analytical Schedule

JBS&G engaged Eurofins|mgt (Eurofins) as the primary laboratory, with Envirolab Services (Envirolab) as the secondary laboratory. Both laboratories are National Association of Testing Authorities (NATA) registered for the required analyses. In addition, the laboratories are required to meet JBS&G's internal QA/QC requirements. **Figure 3B** presents the implemented sampling locations, with **Table 5.3** presenting the implemented analytical schedule completed during this investigation.

**Table 5.3: Summary of Investigation program and laboratory analysis schedule**

| Sample Type | Number of Investigation Locations | Laboratory Analyses (excludes QA/QC) |
|---|---|---|
| Soil – confirmatory samples of previously validated areas (targeted) | 10 locations across:<br>• POL-F area (9)<br>• Block F UST area (1) | Heavy metals – 10 samples<br>TRH, BTEX – 16 samples<br>PAHs – 16 samples<br>Asbestos (WA 500 mL)– 10 samples |
| Soil – Stockpiles (targeted) | 4 stockpiles identified during site inspection | Heavy metals – 4 samples<br>TRH, BTEX – 4 samples<br>PAHs – 4 samples<br>OCPs/PCBs – 4 samples<br>PFAS/PFOS – 4 samples<br>Asbestos (WA 500 mL) – 4 samples |
| Soil – Fly tipping, general waste (targeted) | 3 stockpiles identified during site inspection | Heavy metals – 3 samples<br>TRH, BTEX – 3 samples<br>PAHs – 3 samples<br>OCPs /PCBs – 3 samples<br>Asbestos – 3 samples (500ml) |
| Soil – Data Gap areas of potential fill requiring assessment (targeted) | 7 locations | Heavy metals – 7 samples<br>TRH, BTEX – 7 samples<br>PAHs – 7 samples<br>OCPs/PCBs – 7 samples<br>PFAS/PFOS – 7 samples |

| Sample Type | Number of Investigation Locations | Laboratory Analyses (excludes QA/QC) |
|---|---|---|
| | | Asbestos (WA 500 mL) – 13 samples |
| Soil – Remnant underground infrastructure (targeted) | Areas as identified by service locator/inspection of site conditions | PFAS/PFOS – 2 samples |
| Groundwater | 1 existing location<br>3 newly installed locations during geotechnical investigation | Heavy metals – 4 samples<br>PAHs- 4 samples<br>TRH/BTEX – 4 samples<br>PFAS/PFOS – 4 samples (low level)<br>pH/EC/TDS– 4 samples |

In addition to the above primary analyses, to address the DQIs, field duplicate and triplicate samples were analysed at a minimum rate of one per 20 primary samples. A rinsate sample was obtained from non-disposable sampling equipment following completion of each day of field sampling activities. A single trip spike and single trip blank accompanied each sample batch.

# 6. Assessment Criteria

### 6.1.1 Regulatory Guidelines

Development of site assessment criteria and the associated scope of investigation was undertaken with consideration to aspects of the following guidelines, as relevant:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013),* National Environment Protection Council (NEPC 2013);
- *Sampling Design Part 1 – Application. Contaminated Land Guidelines*. August 2022 NSW Environment Protection Authority (EPA 2022);
- *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme*, 3rd Edition, NSW EPA, 2017 (EPA 2017);
- *Consultants Reporting on Contaminated Land - Contaminated Land Guidelines*, April 2020, NSW Environmental Protection Authority (EPA 2020);
- *Heads of the EPA PFAS National Environmental Management Plan version 2.0* (HEPA NEMP 2.0, 2020);
- *Guidelines for the Assessment Remediation and Management of Asbestos-Contaminated Sites in Western Australia*, Western Australia Department of Health, 2009 (WA DoH 2009);
- *Waste Classification Guidelines, Part 1: Classifying Waste*, November 2014, NSW EPA (EPA 2014);
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, 29 August 2018, (ANZG 2018); and
- *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination*, NSW DEC, March 2007 (DEC 2007).

### 6.1.2 Soil Assessment Criteria

As per the decision process for assessment of urban development sites (EPA 2017), a set of health and ecological assessment thresholds derived from NEPC (2013) was used for evaluation of site contamination data collected for this assessment. Given the proposed residential/ recreational land uses, the site was compared to the following criteria.

Relevant guidelines are presented below:

- Health Investigation Levels (HILs) for recreational (HIL C) land use scenarios;
- Soil Health Screening Levels (HSLs) for Vapour Intrusion, recreational (HSL C) land use scenarios.
- HSLs for asbestos levels in soil for recreational (HSL C) land use scenarios;
- Site specific Ecological Investigation Levels (EILs) for recreational land use scenarios;
- Ecological Screening Levels (ESLs) for recreational land use scenarios;
- Management limits for petroleum hydrocarbons for recreational land. Following the NEPM guidance, management limits are considered only after HIL/HSLs and EIL/ESLs;
- PFAS NEMP Human Health Screening Values and Ecological direct and in-direct exposure (HEPA 2020) for recreational (HSL C) land use scenarios; and
- Aesthetic considerations, applicable for all land uses.

The results of asbestos analysis were assessed in general accordance with NEPC (2013) including DOH (2009[27]) guidance.

The methodology to derive site-specific EILs for certain heavy metals as presented in NEPC (2013) accommodates consideration of ambient background concentrations (ABCs) and added contaminant limits (ACLs) based on a range of physicochemical soil properties. Site specific EILs were calculated for the site based on the average of site soil properties (CEC of 22 meq/100g, 7.23 pH and 18 % clay) assessed at three sample locations (DG01_0-0.1, PF04_0-0.1 and DG06_0-0.1) consistent with NEPC (2013).

Where there is no NSW EPA endorsed thresholds the laboratory limit of reporting (LOR) was adopted as an initial screening value for the purposes of this assessment.

Consideration was given to the NSW EPA (2014) *Waste Classification Guidelines* as appropriate for characterisation of total soil and TCLP concentrations.

### 6.1.3 Groundwater Assessment Criteria

Results of groundwater analysis were assessed with reference to the following guidelines:

- Groundwater health screening levels (HSLs) for vapour intrusion in fine soil as presented in NEPC (2013);
- Recreational criteria adopted as a conservative assessment of worker exposure risk during potential excavation works involving interaction with groundwater, from the Australian Drinking Water Guidelines NHMRC (2011[28]) (Recreational is 10x the drinking water criteria for health);
- To assess the potential risk of contaminated groundwater migrating from the site to nearby waterbodies, reference has been made to the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG 2018). Given the somewhat urbanised nature of the receiving water body, freshwater criteria for protection of 95 % species in a slightly to moderately disturbed ecosystem will be adopted; and
- Health-based guidance values for PFAS in recreational waters and Tier 1 Screening Values for PFAS in freshwater ecosystems (95% species protection) as presented in the PFAS NEMP (HEPA 2020).

Where there are no NSW EPA endorsed thresholds, the laboratory LOR was adopted as an initial screening value for the purpose of this assessment in lieu of site-specific risk assessment derived criteria.

[27] *Guidelines for the Assessment Remediation and Management of Asbestos-Contaminated Sites in Western Australia*, May 2009. Western Australia Department of Health (DOH), (DOH 2009)

[28] *Australian Drinking Water Guidelines* (ADWG) NHMRC (2011, as amended 2016)

# 7. Data Quality Assessment

Data quality indicators (DQIs) have been calculated and are summarised in **Table 7.1** following. Laboratory reports are provided as **Appendix J**, with summarised QA/QC results presented in **Appendix K**.

**Table 7.1: Summary of Quality Assurance / Quality Control Assessment**

| Data Quality Indicator | Frequency | Results Reported | DQI met |
|---|---|---|---|
| **Precision** | | | |
| Blind duplicates | 2/38 soil | 0-138 % RPD | See discussion below |
| | 1/4 Water | 0-67 % RPD | See discussion below |
| Split duplicates | 2/38soil | 0-32 % RPD | Yes |
| | 1/4 Water | 0-184 % RPD | See discussion below |
| **Accuracy** | | | |
| Surrogate spikes | All samples for organic constituent analysis | 11-165 % recovery* | See discussion below |
| Laboratory control samples | - | 67-141 % recovery | See discussion below |
| Matrix spikes | - | 61-147 % recovery | See discussion below |
| Laboratory duplicates | 1 per lab batch | 0-57% RPD | See discussion below |
| **Representativeness** | | | |
| Sampling appropriate for media and analytes | All media | All sampling appropriate | Yes |
| Samples extracted and analysed within holding times | - | Majority samples extracted and analysed within holding times | See discussion below |
| Method blank | All analytes | <LOR | Yes |
| Field rinsate blank | All analytes | <LOR soil | Yes |
| Trip blank<br>Trip Spike | 1/sampling event<br>1/sampling event | <LOR<br>84-130 % recovery | Yes |
| **Comparability** | | | |
| Standard operating procedures for sample collection & handling | All samples | Standard procedures for all sampling | Yes |
| Standard analytical methods used for all analyses | All samples | Standard analytical methods | Yes |
| Consistent field conditions, sampling staff and laboratory analysis | All works | Consistent field staff and consistent field and laboratory conditions | Yes |
| **Completeness** | | | |
| Sample description and COCs completed and appropriate | All samples | Field documentation and COC provided and completed | Yes |
| Appropriate documentation | All works | Documentation provided and completed | Yes |
| Satisfactory frequency and result for QC samples | All samples | See discussion below | Yes |
| Data from critical samples is considered valid | - | Critical samples valid | Yes |
| **Sensitivity** | | | |
| Analytical methods and limits of recovery appropriate for media and adopted Site assessment criteria | All samples | LORs appropriate and generally consistent | Yes |

## 7.1 Discussion of QA/QC Results

The results of QA/QC samples outside the acceptance criteria are discussed below.

### 7.1.1 Precision

**Soil Duplicates**

Soil blind and split duplicates were collected at a rate of greater than 1 per 20 primary samples. Samples generally reported RPDs within the JBS&G acceptable limits with the exception of some constituents as summarised in **Appendix K**. High RPDs in the duplicate samples can be expected when materials are heterogeneous and/or when analyte concentrations are close to limit of reporting (LOR). The elevated RPDs are considered to not represent field and/or laboratory sampling error, rather they confirm the heterogeneity of contaminant distribution within the subject samples.

**Water Duplicates**

Water blind and split duplicates were collected at a rate of greater than 1 per 20 primary samples analysed. The resultant RPDs were mostly within the JBS&G preferred range (0-50 %) with the exception of some of metals, TRH, VOCs, and PFAS. Some elevated RPDs were due to low concentrations close to the limit of reporting where elevated RPDs can be expected. Overall, the data was considered suitable for comparison against screening level criteria, and as a conservative measure, the highest reported concentrations have been considered when interpreting results.

### 7.1.2 Accuracy

**Surrogate Spikes**

Soil surrogate spikes were conducted on all samples submitted for organic constituent analysis and generally all recoveries were reported within the JBS&G acceptable range (70-130 %), with the exception of several samples which were reported between 11 - 165 %.

The surrogate spike recoveries outside of the target range are considered to not affect the overall reliability of the data set as concentrations in samples were close to or below the laboratory's LOR and/or were generally within the laboratories NATA accredited limits (50%-150%). Spike recoveries outside of the NATA accredited limits are considered to not affect the accuracy of the data set, noting the primary constituents were generally reported below the laboratory LOR at the majority of locations, with contaminants reported significantly below the adopted site criteria.

INT was reported for surrogates in a number of samples where chromatographic interference did not allow the determination of surrogate recovery. The relevant samples were not identified to contain any detectable concentrations of COPCs within the analytical groups affected by the surrogate interference. As such, it is considered unlikely that the surrogate interference is indicative of potential failures to quantify COPC concentrations to a degree which would result in an incorrect decision being made with regards to site suitability.

**Matrix Spikes**

A sufficient number of matrix spikes were analysed within the soil samples and generally all recoveries were reported within the JBS&G acceptable range (70-130 %). The laboratory reported matrix spike recovery for five analytes was outside of the recommended acceptance criteria, with an acceptable recovery obtained for the laboratory control sample indicating a sample matrix interference.

**Laboratory Control Samples**

A sufficient number of laboratory control samples were analysed in which recoveries were generally within the preferred range (70-130 %). Four PFAS analyte laboratory control samples were outside the preferred range, however the recovery was within the laboratory acceptable limits (50 - 150 % recovery) under the laboratory's NATA accreditation.

**Laboratory Duplicates**

A sufficient number of laboratory duplicates were analysed in which RPDs were generally within the JBS&G acceptable limit of 0-50 %, with the exception of one sample with an elevated RPD recorded by the laboratory. Review of the data with elevated RPD indicates all concentrations were close to the LORs and all well below adopted assessment criteria. Therefore, elevated RPDs for laboratory duplicates do not affect the reliability of the data for site assessment.

### 7.1.3 Representativeness

**Sampling appropriate for media and analytes**

All sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures. Soil sampling was conducted with the advancement of test pits, considered appropriate for the potential site contaminants. Groundwater sampling was completed using a HydraSleeve and a low flow peristaltic pump which are also considered appropriate for the potential site contaminants in groundwater.

**Laboratory Blanks**

There were no reported concentrations of contaminant compounds above the laboratory LOR in the laboratory method blanks.

**Holding Times**

Samples were extracted and analysed within the recommended holding times with respect to chemical and asbestos COPCs, with the exception of chemical analysis completed on soil sample DG06-0.2-0.3 for the analysis of TRH, BTEX, PAH and OCP. The samples were appropriate preserved and chilled in the field properly to minimise the risk of contaminant volatilisation and then chilled at the laboratory under controlled conditions. It is noted that samples were however were analysed one day outside the holding times. Review of this data indicates reported concentrations were all well below the adopted site criteria and at similar concentrations to that identified across the remainder of the investigation area. As such, the potential that contaminant degradation had occurred to such a degree that evaluation of the data resulted in an incorrect decision is unlikely. As such, inclusion of this data is identified to not affect the reliability of the data for site assessment.

**Trip Spike**

A trip spike was submitted for analysis with each laboratory batch throughout the sampling program. All trip spike recoveries were within the acceptable limit of 70-130 %, indicating that the adopted assessment sample preservation methods were appropriate to result in a low risk of contaminant concentration loss during transport of the samples.

**Trip Blank**

A trip blank was submitted for analysis with each laboratory batch throughout the sampling program. There were no reported concentrations of BTEX compounds above the laboratory LOR thus demonstrating the absence of significant contaminant cross contamination issues during the temporary storage and transportation of samples analysed during this investigation.

**PFAS Blank**

Two PFAS field blanks were included with samples for both batches submitted to the laboratory. There were no reported concentrations of PFAS compounds above the laboratory LOR, thus demonstrating the absence of cross contamination during the storage and transportation of samples analysed during this investigation.

**Rinsate**

One field rinsate blank was submitted with the groundwater samples submitted to the laboratory on 28 October 2022. There were no reported concentrations of COPCs above the laboratory LOR thus demonstrating the absence of significant contaminant cross contamination issues during the sample collection during this investigation.

### 7.1.4 Comparability

Eurofins (primary laboratory) and Envirolab (secondary laboratory) were NATA accredited for comparable methods of analysis. Field works have been undertaken by a team of experienced samplers in accordance with the same standard operating procedure. All field documentation was appropriately completed.

### 7.1.5 Completeness

**Documentation**

All documentation is complete and correct.

**Frequency for QC Samples**

Frequency of analysis for the QC samples collected has met or exceeded the required minimum frequency for each analyte analysed.

### 7.1.6 Sensitivity

The LORs for most analysis were less than adopted criteria.

The limit of reporting for anthracene and benzo(a)pyrene in regard to the water matrix was higher than the ecological assessment criteria adopted for these compounds. There was no detections of these contaminants above the laboratory level of reporting for this investigation and not identified as a potential contaminant of concern at this site.

### 7.1.7 QA/QC Assessment

The field sampling and handling procedures produced QA/QC results which indicate that the data is of an acceptable quality and suitable for use in site characterisation. The NATA certified laboratory results sheets indicate that the project laboratory was generally achieving levels of performance within its recommended control limits during the period when the samples from this program were analysed.

On the basis of the results of the field and laboratory QA/QC program, the data is of an acceptable quality in order to achieve the objectives of the assessment.

# 8. Results

## 8.1 Observations

### 8.1.1 Soil

The lithology encountered at the site during the field works is summarised below. Test pit logs are included in **Appendix F.** A total of 24 test pits were completed by JBS&G as part of the current investigation as shown on **Figure 3B**. Observations completed during installation of groundwater monitoring wells are included in the geotechnical report as completed for the site (PSM, 2022).

#### 8.1.1.1 Test pits

The soil investigation was undertaken on the 17, 18 and 19 October 2022. A total of 24 locations were advanced via test pits to a maximum total depth of up to 2.6 m below ground surface (bgs).

Fill material was encountered at all test pit locations to depths ranging from 0.2 to 0.8 m bgs. The fill material typically comprised silty clay with inclusions of gravel, concrete and organic material. Where identified, the fill material was underlain by residual undisturbed orange/red/grey clay to the maximum depth of the completed test pits. No seepage was identified within the test pits.

As shown on **Figure 3B**, JBS&G testpits PF05 – PF09 were installed through observed asphalt hardstand material and identified a gravelly sandy clay with inclusions of blue-metal gravels overlying the natural orange/red/grey clay.

Testpits were progressed into the vegetated stockpiles (SP01 – SP04), identified to comprise brown silty clay with inclusions of tile and plastic fragments. Concrete inclusions were identified in SP02 and SP04, as shown in photographs included in **Appendix A**.

The identified fly-tipped stockpiles were investigated and observed to comprise brown silty clay with anthropogenic inclusions of brick, concrete, plastic, tile, metal and terracotta in FT01; brown clay with anthropogenic inclusions of brick and trace plastics in FT02 and soft brown silty clay with high levels of organic inclusions of mulch at FT03. The location of these stockpiles is presented on **Figure 3B**.

An investigation of the identified hydrant lines was completed at 2 locations during this investigation with no further asbestos pipes identified and all observed infrastructure comprising cast iron construction. Summary descriptions of encountered material surrounding the identified hydrants is included as **Table D** in **Appendix I**.

During the site inspection of the investigation area, no surficial ACM was observed. Given that the investigation area was observed to be highly vegetated, it is assumed that there is a potential of ACM fragments to be present given the consistent historical site use, as was observed in the adjacent non vegetated areas of Lot 5 .

There was no significant evidence of additional asbestos, odours or staining/soil discolouration observed within the soil/fill profile at sampling locations completed during the field works.

#### 8.1.1.2 Asbestos Quantification

The field and laboratory analysis results that combined were used to evaluate the asbestos in soil quantification results are summarised in **Table C, Appendix I**. No asbestos was visually identified during the investigation.

Laboratory results for all analysed soil samples reported the absence of asbestos as ACM, asbestos fines (AF) or friable asbestos (FA) detected at the reporting limit of 0.001% w/w or respirable fibres. Organic fibres were detected.

### 8.1.2 Groundwater Observations

The monitoring well locations are shown on **Figure 3B**, comprising 3 locations within the investigation area and one downgradient at the Precinct 3 boundary (MW03). Well installation details for newly installed wells are provided in the PSM Geotechnical report (PSM, 2022).

Groundwater sampling field data sheets are provided in **Appendix H** and water quality meter calibration records are provided in **Appendix G**. Detailed laboratory reports and chain of custody documentation are provided in **Appendix J.**

#### 8.1.2.1 Field Observations and Field Measure Parameters

Groundwater sampling was conducted on 28 October 2022. Groundwater was generally colourless to brown and exhibited moderate turbidity. The measured depth to groundwater at the time of gauging was between 6.796 m (MW03) and 7.823 m (MW01) below top of casing (btoc), which was more elevated than the water strike zones observed within the weathered shale rock during the drilling program, identified in PSM (2022) to be at depths of 10-12 m bgs. This indicates that groundwater at Precinct 3 is likely to be present within a confined / semi-confined system. Interpolated groundwater contours are shown on **Figure 5** and the direction of groundwater flow is inferred to be generally toward the north-east, with the local topography influencing groundwater flow.

No odours or sheens were observed within purged groundwater as part of the monitoring event. In addition, no non-aqueous phase liquids (NAPL) was identified during either development or gauging of the monitoring wells.

The SWLs as m below top of casing (m BTOC), in the identified wells were gauged most recently on 28 October 2022 prior to sampling. The SWLs were reduced to Australian Height Datum (AHD) to derive Reduced Water Levels (RWLs). This data is presented below in **Table 8.1**.

**Table 8.1: Reduced Water Levels**

| Well ID | RL BTOC m AHD | SWL (October 2022) | RWL (October 2022) |
|---|---|---|---|
| | | m BTOC | m AHD |
| MW01 | 81.41 | 7.823 | 73.587 |
| MW02 | 79.53 | 9.784 | 69.746 |
| MWF3 | 74.18 | 6.937 | 67.243 |
| MW03 | 69.05 | 6.796 | 62.254 |

The range of field parameters measured for groundwater on site are presented in **Table 8.2**.

**Table 8.2: Groundwater Field Parameters**

| Sample ID | Date | pH | Electrical Conductivity (EC) | Oxidation Reduction Potential | Dissolved oxygen |
|---|---|---|---|---|---|
| | | - | µS/cm | mV | mg/L |
| MW01 | 28/10/2022 | 6.36 | 11,716 | -28.1 | 0.35 |
| MW02 | 28/10/2022 | 7.38 | 8,776 | -46.4 | 0.28 |
| MWF3 | 28/10/2022 | 7.25 | 5,327 | -61.7 | 0.25 |
| MW03 | 28/10/2022 | 5.16 | 12,474 | -51.4 | 0.27 |

Review of the field parameters recorded for the samples indicates that the groundwater has a relatively neutral pH to acidic character in the down gradient extent of Precinct 3 (MW03), is saline to highly saline and relatively low in oxygen levels. The EC values correlate with moderately saline waters as expected within the shale bedrock and hydrogeological setting of the investigation area.

## 8.2 Analytical Results

### 8.2.1 Soil Analytical Results

Laboratory analysis results for soil samples completed for the investigation have been summarised in tables presented in **Table A**, **Appendix I**, with comments discussed below for the various analyte groups.

**Heavy Metals**

Heavy metal concentrations in all analysed samples were reported to be below the adopted health-based and ecological criteria applicable to the land-use scenario assessed as part of this investigation, with the exception of sample DG05_0-0.1 with a reported lead concentration of 1600 mg/kg, in excess of the adopted human health (HIL-C) and ecological criteria of 600 mg/kg and 1100 mg/kg respectively. Preliminary statistical evaluation of the data set has identified that this sample result exceeds 250% of the adopted HIL and as such, this result is considered to be a hotspot and as such, further full data set statistical analysis is not appropriate.

**TRH and BTEX**

TRH and BTEX concentrations were reported to be below the laboratory limit of reporting (LOR) or less than the adopted health-based criteria in all samples selected for analysis. In addition, the reported TRH and BTEX concentrations were below the adopted criteria protective of ecological receptors (under an open space land-use scenario) in all samples selected for analysis.

**PAHs**

Total PAH and carcinogenic PAHs as B(a)P TEQ concentrations were below the adopted site assessment criteria protective of human health applicable to each land-use assessed as part of this investigation.

All reported Benzo(a)pyrene concentrations were less than the laboratory LOR and below the adopted ecological screening levels.

**OCP and PCBs**

The reported concentrations of individual OCPs and PCBs were below the adopted site assessment criteria in all samples selected for analysis.

**Asbestos**

The laboratory did not report the presence of asbestos (either ACM/AF/FA) above the laboratory LOR (0.001 % w/w) in all samples selected for analysis. As such, all reported concentrations for ACM/AF/FA in soil were less than the adopted site assessment criteria.

**PFAS**

PFAS compound concentrations in all primary samples selected for analysis were all reported to be below the laboratory level of reporting (LOR) and as such were present at concentrations well below the adopted site assessment criteria.

It is noted that the field triplicate samples (QA20221017-01 and QA20221017-02) analysed by a separate laboratory (that adopted a lower LOR) identified trace levels of various individual PFAS compounds. These concentrations were reported to generally be at least one order of magnitude below the primary laboratory LOR and two orders of magnitude below the relevant assessment criteria.

**TCLP**

One sample (DH05_0-0.1) was extracted and analysed for lead. This result was less than the TCLP1 value for lead, however the result exceeded the specific contaminant concentration. On the basis of the above, the results fall within the restricted solid waste limits.

### 8.2.2 Groundwater Analytical Results

The groundwater sampling locations are shown on **Figure 3B** and summarised laboratory results are presented in **Table B**, **Appendix I**. Analytical results are discussed in the following sections.

**Heavy Metals**

All reported heavy metal concentrations were below the criteria protective of human health at all locations. In addition, the reported concentrations were below the site assessment criteria protective of downgradient ecological receptors with the following exceptions:

- Cadmium, which marginally exceeded the freshwater 95% ecosystem criterion (0.0002 mg/L) in the duplicate sample obtained from monitoring well MW01 (QA20221028, 0.0003 mg/L), with the balance of sample results being reported as less than the laboratory LOR (0.0002 mg/L);
- Copper, which marginally exceeded the freshwater ecosystem criterion (0.0014 mg/L) in monitoring well MWF3 (0.002 mg/L) with the balance of sample results being reported as less than the laboratory LOR (0.0001 mg/L); and
- Zinc which marginally exceeded the freshwater ecosystem criterion (0.008 mg/L) in primary sample MW03 (0.009 mg/L) with the balance of sample results being reported in the range of LOR (0.005 mg/L to 0.007 mg/L).

All ecological criteria exceedances were noted to be present at concentrations less than one order of magnitude above both the laboratory LOR and the adopted 95% criterion.

**PAHs**

All individual PAH compound concentrations were reported to be below the adopted laboratory LORs and with the exception of Anthracene and Benzo(a)pyrene, less than the adopted site assessment criteria in all samples. It is noted that the adopted laboratory LORs for these two individual PAH compounds (0.001 mg/L) exceeded the adopted ecological criteria (0.0004 mg/L and 0.0002 mg/L respectively).

**TRH and BTEX**

TRH and BTEX concentrations were reported to be below the adopted site assessment criteria in all samples. Trace detections of TRH >$C_6$-$C_{10}$ were reported in monitoring wells MW01 (0.04 mg/L) and MW03 (0.02 mg/L) for which there are no direct ecological criteria, noting the individual BTEX concentrations in both samples were less than the individual compound LORs and below the relevant ecological DGVs.

**PFAS**

Concentrations of perfluorooctanesulfonic acid (PFOS) were reported in the range of 0.002 µg/L to 0.003 µg/L. The reported concentrations are below both the adopted drinking water threshold (0.07 µg/L) and the less sensitive 95% ecological protection value of 0.13 µg/L.

Trace detections of various PFHxS compounds including Perfluoropropanesulfonic acid (PFPrS), Perfluorobutanesulfonic acid (PFBS), Perfluoropentanesulfonic acid (PFPeS) and Perfluorohexanesulfonic acid (PFHxS), were reported in monitoring wells MW01 (including duplicate/triplicate samples) and MWF3, with sum of PFHxS concentrations for all samples being at

least one order of magnitude less than the adopted ADWG criteria (0.07 µg/L for sum of PFHxS plus PFOS).

Reported concentrations of PFOA were all less than the laboratory LOR and below the respective adopted ecological and health based criteria for PFOA.

# 9. Discussion

## 9.1 Are there any unacceptable risks to on-site future receptors?

Based on review of site history, background information and based on the results presented herein, this assessment has not identified potential for gross or widespread contamination or unacceptable contamination risks which would prevent the site from being made suitable for the proposed redevelopment.

Review of the historical data available for the site, compared to the current applicable guidelines, has identified no exceedances in soil for current assessment health based criteria. Zinc was identified to exceed ecological criteria at locations JTF1A and JTF2A in samples obtained in 2007. The 2009 AECOM audit report completed by Frank Mohen identified that the "*soils across the LCC Residential area are unlikely to pose a significant risk to human health or the environment*."

During the current investigation, elevated concentrations of lead in surface fill material were identified at one sample location DG05 (0.0-0.1) located in the northern extent of the site as shown in **Figure 4** with a concentration of 1100 mg/kg, exceeding both the adopted health based (600 mg/kg) and ecological (1100 mg/kg) criteria. Given the concentrations exceeded 250 % of the criteria, no further statistical analysis of the population data set was appropriate. The soils at this location comprised silty clay fill material extending to a depth of 0.2 m bgs, underlain by natural clay soil. Further sampling and laboratory analysis will be required to confirm the lateral extent of lead impacted soil is at this location and that the impacts are limited to the fill material profile.

Given changes to the laboratory methods of reporting and applicable criteria, no direct comparison of historical petroleum hydrocarbon in soil data was adopted for this assessment. Given the historically reported residual concentrations, an additional sample location at the block F UST area was undertaken during the current investigation to identify whether any residual contamination risk remains. The current investigation results identified the absence of contaminant detections in representative soils at concentrations above the laboratory level of reporting.

Preliminary assessment of soil contaminant characteristics associated with stockpiles of soil identified in the southern section of the investigation area (as shown in **Figure 3B**) included inspection of the material and limited representative sampling/analysis of stockpile samples. The results did not identify the presence of significant indications of contaminants and all laboratory analysis results for COPCs were reported to be below the adopted COPCs. On this basis, it is considered that the material will be suitable from a contaminant viewpoint, subject to final validation at an appropriate density for beneficial reuse during development works.

No other soil contamination conditions were identified at the site that represent a potentially unacceptable risk to site users under the proposed landuse.

## 9.2 Are there any issues relating to the local area background soil concentrations that exceed appropriate soil criteria?

The investigation identified the presence of limited contaminants in soil at the site at concentrations which exceeded applicable human health and ecological investigation levels. However, the impacts are considered to be attributable to site contamination rather than background sources. Review of natural soil contaminant concentrations did not identify the occurrence of background soil concentrations elevated with regard to regional soil characteristics.

Further, review of available desktop information has not identified any evidence of local or regional contamination which may substantially affect the site.

### 9.3 Are there any unacceptable human health and ecological risks present in groundwater underlying the site

Concentrations of all COPCs in all groundwater samples were reported to be less than the adopted human health based site assessment criteria and as such, there are considered to be no unacceptable human health risks from groundwater underlying the site.

Individual heavy metals concentrations in groundwater across the investigation area were generally less than the adopted ecological investigation levels with the noted exception of cadmium at 0.0002 mg/L in MW02, copper at 0.002 mg/L in MWF3 and zinc at 0.009 mg/L at MW03. It is noted that maximum concentrations of each heavy metal were within an order of magnitude of the adopted ecological criteria. The heavy metals results as a whole are considered to be consistent with groundwater resident in the shale geology rather than indicative of anthropogenic impacts and as such there are no unacceptable ecological risks associated with groundwater conditions underlying the investigation area.

Assessment PFAS compounds in groundwater identified concentrations of both PFOS and PFHxS group compounds above the laboratory LORs at monitoring locations. All reported concentrations of all PFAS, including sum of PFOS, PFOA and PFHxS were significantly below the adopted human health criteria. Concentrations of PFOS were reported in the range of 0.002 µg/L to 0.003 µg/L, below the 95 % species protection ecological based criterion (0.0.13 µg/L), adopted given the distance to the nearest sensitive receptor.

The results are noted to be significantly below the 95% ecological criterion and are consistent in all monitoring wells. These results are considered representative of disparate sources potentially associated with historical use of the site, rather than indicative of a potential point source contamination location(s). On this basis, with consideration to the nature of the groundwater shale environment and the distribution of concentrations, the conditions are not indicative of an unacceptable risk to ecological receptors and as such, no further investigation of PFAS in groundwater is considered necessary.

### 9.4 Are there any chemical mixtures?

Significant exceedances of site assessment criteria were not identified for more than one constituent for either human or ecological receptors and as such there are no outstanding issues with regard to chemical mixtures that require management.

### 9.5 Are there any aesthetic issues?

Inspection of the ground surface and excavated spoil was undertaken during the intrusive investigation for the presence of staining/discolouration, odorous soil conditions, building/demolition rubble and ACM fragments as indications of potential land contamination.

The inspection did not identify the presence of asbestos, odorous soils or hydrocarbon staining/discolouration of soil within the investigation area.

Inclusions at some sampling locations of building and demolition waste incorporated within fill material were noted. In addition to such observations being a potential indicator of elevated ACM in soil risk, such inclusions may present an aesthetic risk with regard to use of such materials in a near surface soil profile in a residential land use setting. Management of such materials, potentially via physical separation and/or reuse of such soils at depth, or beneath future road pavements etc should be considered.

The fly-tipped waste stockpiles FT01 and FT02 identified across the investigation area were observed to contain inclusions of materials that would pose an aesthetic concern if not removed to a suitable waste facility. Inclusions of concrete identified within stockpiles SP02 and SP04 warrant further investigation to determine the level of potential aesthetically unsuitable material contained within.

A limited intrusive investigation was undertaken with respect to the identified in-ground infrastructure. While this investigation did not identify any asbestos containing pipe work, as this has been identified in the adjoining lots, there is a possibility of this being present through the current investigation area and as such materials are classed as an aesthetic risk, will require management and potential remediation prior to redevelopment activities.

### 9.6 Is there any evidence of, or potential for, migration of contaminants from the site?

The potential for migration of contaminants offsite is considered low as the contaminant of concern is lead in soil. It is noted that the site was covered by dense vegetation and concrete, with the potential for bonded ACM to be concealed, minimising the potential for migration, unless disturbed.

As discussed in **Section 9.3**, whilst some heavy metals have been identified in groundwater at the site exceeding the initial adopted ecological investigation criteria, assessment of this data has indicated that such concentrations do not present an unacceptable risk to ecological receptors at, or downgradient of the site.

### 9.7 Is a site management strategy required?

An area of soil impact (lead) was identified the will require remediation/management prior to re-development of the investigation area. Additionally, it should be anticipated that future site development earthworks may identify further isolated areas of former infrastructure, ground surface impacts and fill material containing ACM.

As such, an appropriate site management plan, including an interim Asbestos Management Plan (AMP) and a development Remedial Action Plan (RAP) will be required to be developed to address procedures for management of the site contamination risks, aesthetic concerns and occupational exposures such that upon the completion of works the site may be confirmed as suitable for the proposed open space uses.

# 10. Conclusions and Recommendations

## 10.1 Conclusions

Based on the scope of works completed, and subject to the limitations presented in **Section 11**, the following conclusions are provided:

- The data gap investigation included the implementation of 24 soil testpits and stockpile sampling to facilitate analysis of selected representative soil samples was undertaken for a broad range of COPCs identified in the CSM including heavy metals, PAHs, TRH/BTEX, OCPs, PCBs, PFAS and asbestos. With consideration to the adopted site assessment criteria, the following conditions were identified that require further consideration from a health and/or ecological risk view point with regard to the suitability of the investigation area for the proposed land use:
    - Identification of one location (DG05_0_0.1) where lead in surface fill material concentrations exceeded the adopted health and ecological investigation criteria; and
    - During the site inspection of the investigation area, no surficial ACM was observed. Given that the investigation area was observed to be highly vegetated, there is a potential of ACM fragments to be present given the consistent historical site use, as was observed in the adjacent non vegetated areas of Lot 5. Limited anthropogenic material e.g., bricks, was also observed on the surface and within the fill, often associated with further asbestos impacts.
- Laboratory analysis of representative soil samples for PFAS compounds as contaminants of potential concern did not identify the presence of elevated contaminant concentrations with regard to the adopted health and/or ecological based site assessment criteria appropriate for open space landuse scenario.
- Remaining infrastructure associated with former use of the investigation area, including inground water hydrant infrastructure, roadways, stormwater, Telstra Pits etc will also require decommissioning works and removal during site preparation activities to ensure that no minor areas of inground impact occur within these areas of the investigation area. Given the identification of ACM associated with this infrastructure in the adjacent lot, there is a potential that this will be identified and will require decommissioning and removal under an AMP/RAP.
- In the absence of gross and/or widespread contamination at the investigation area, no potential issues relating to off-site migration of contaminants were identified under the current site conditions. Should existing vegetative cover be significantly disturbed, management actions would be necessary in portions of the investigation area to appropriately manage the potential risk of airborne asbestos fibre generation and subsequent contaminant migration; and
- It is considered that the site the investigation area is readily able to be made suitable for the proposed open space and less sensitive supporting land uses subject to preparation and successful implementation of an appropriate remedial action plan (RAP) to address the areas of concern as outlined above.

## 10.2 Recommendations

Based on the conclusions of the investigation it is recommended that:

- Management of the identified lead in fill material and high potential for asbestos contamination in relation to development of the investigation area is undertaken via preparation and implementation of a RAP;

- In the meantime, appropriate site management procedures should be implemented via preparation and implementation of an AMP/asbestos register to ensure occupational exposure risks are appropriately managed during any/all activities that result in ground surface disturbance; and
- During development of the investigation area, a construction environmental management plan (CEMP) is prepared (in conjunction with the RAP), which incorporates an unexpected finds protocol (UFP) to address any unexpected contamination conditions encountered during development of the investigation area.

# 11. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquiries.

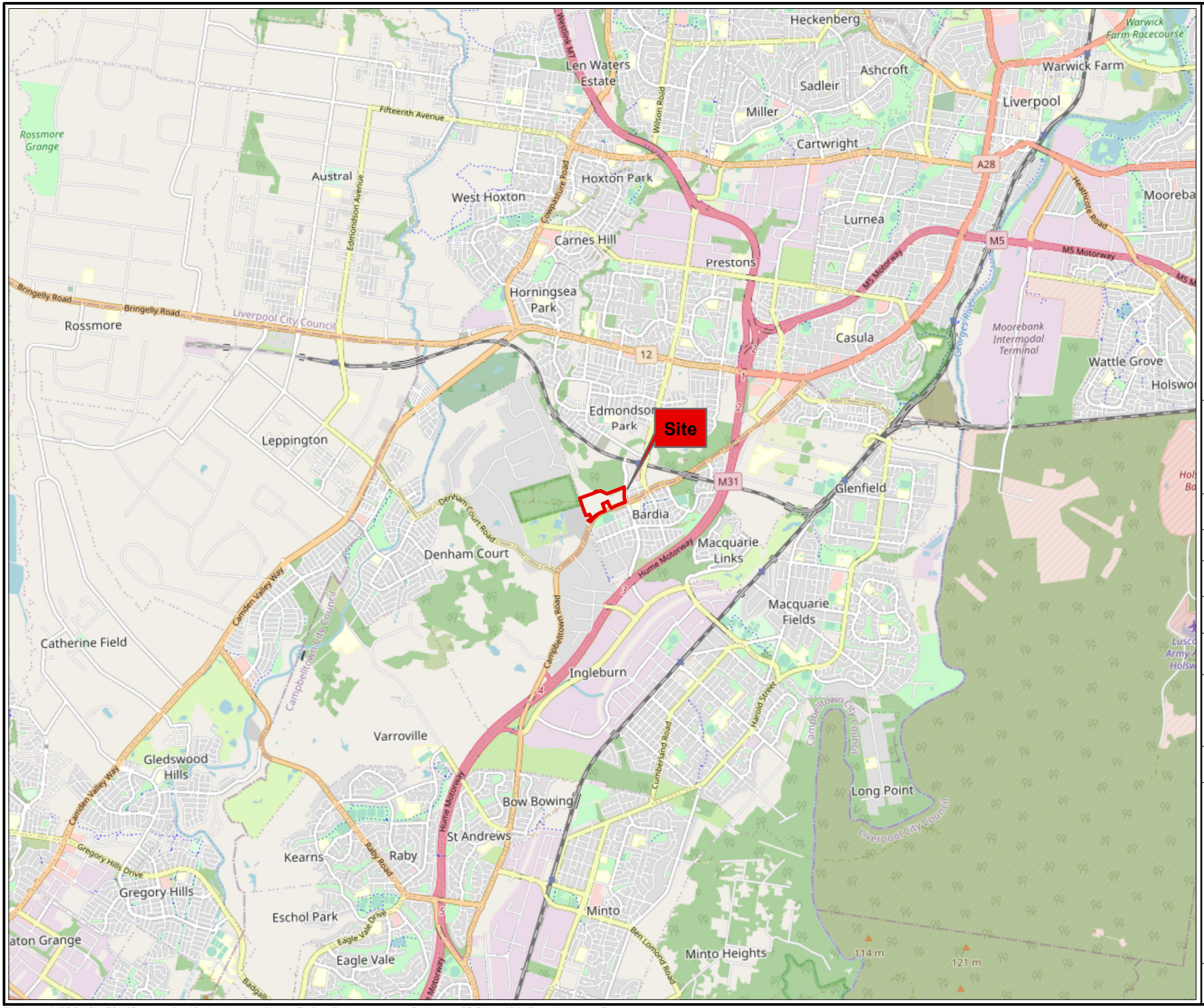
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the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

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

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

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

## Figures




**Legend**

Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R04 Rev 0 | Date 11/01/2023 |
| Drawn By: YY/PA | Checked By: MD |

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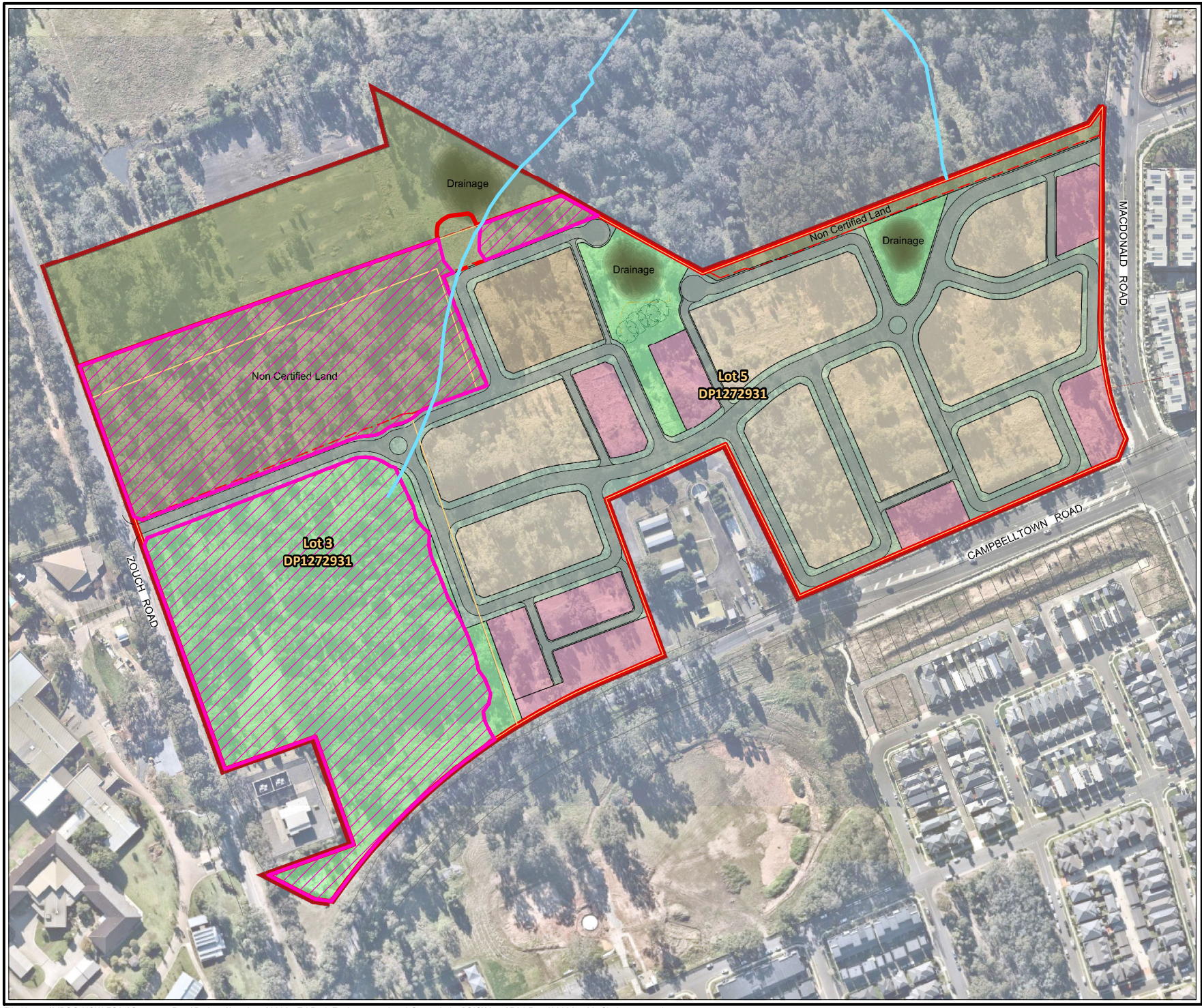
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**SITE LOCATION**

**FIGURE 1**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R04 Rev A\63325_01_SiteLocation.mxd
Reference: Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA




**Legend**

- Approximate Site Boundary
- Stage Boundary
- Cadastre NSW, 2021
- Investigation Area
- Drainage Line

Urbanco (2022)
Conceptual Site Model Legend:

- Conceptual Site Boundary
- Non-Certified Land
- Terraces
- Residential Lots
- Green Spaces

JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R04 Rev 0 | Date 17/01/2023 |
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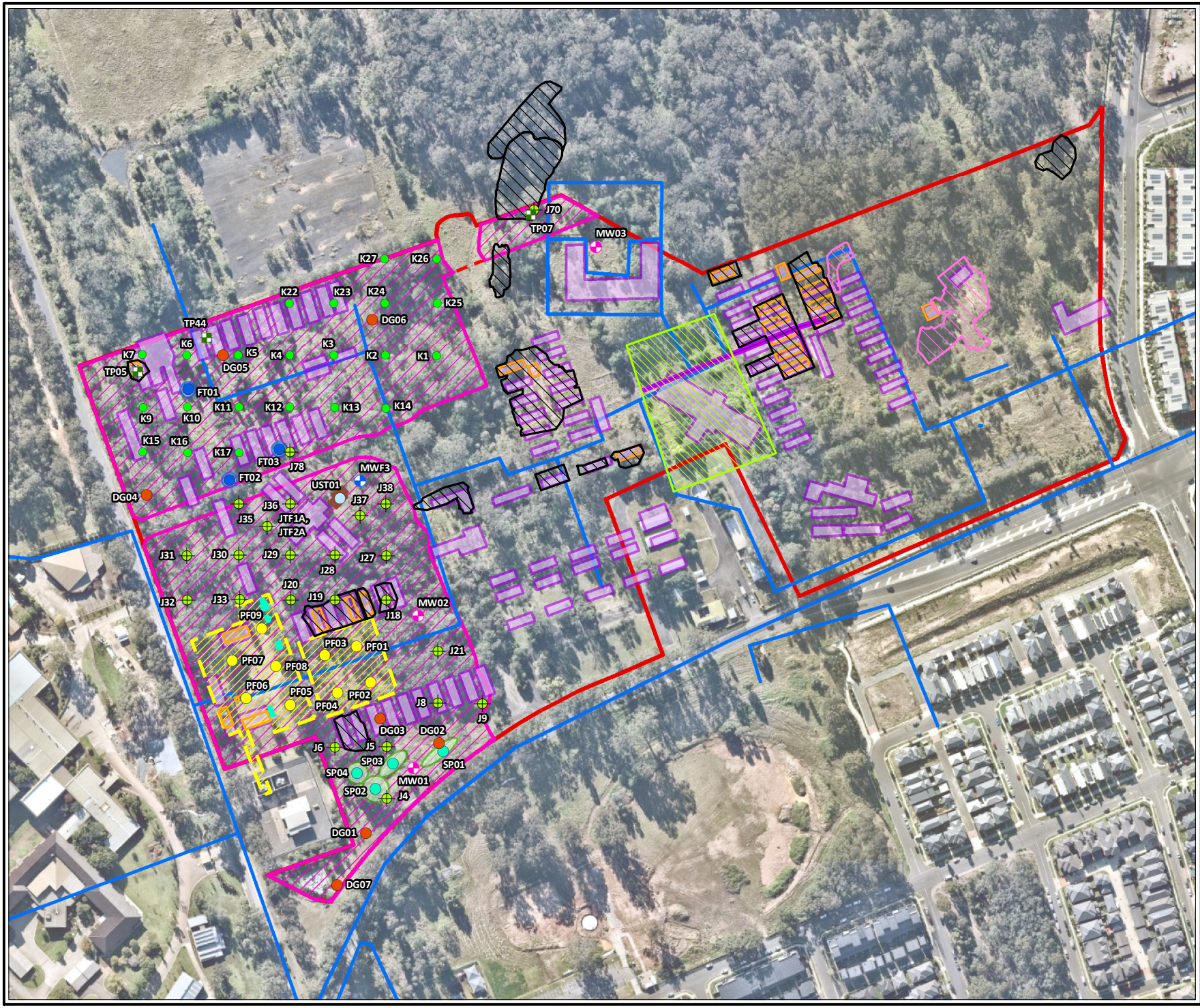
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**SITE LAYOUT AND INVESTIGATION AREA**

**FIGURE 2**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R04 Rev A\63325_02_SiteLayout.mxd
Reference: www.nearmap.com - 20220604




**Legend**

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

**Validation Areas:**

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench
- POL-F Investigation Area (URS, 2004)

**Site Features**

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile
- Hydrant Lines

**Sample Location, JBS&G (2022)**

- POL-F Sample
- Monitoring Well
- Stockpile Sample
- UST
- Data Gap Sample
- Fly Tipping Sample

**Sample Location, JBS&G (2021)**

- Monitoring Well
- Test Pit, Asbestos

**Historical Sample Locations**

- Soil Sample, SKM 2007
- Soil Sample, SKM 2008

JBS&G

Job No: 63325

Client: Landcom

| Version: R04 Rev 0 | Date 18/01/2023 |
|---|---|
| Drawn By: YY/PA | Checked By: MD |

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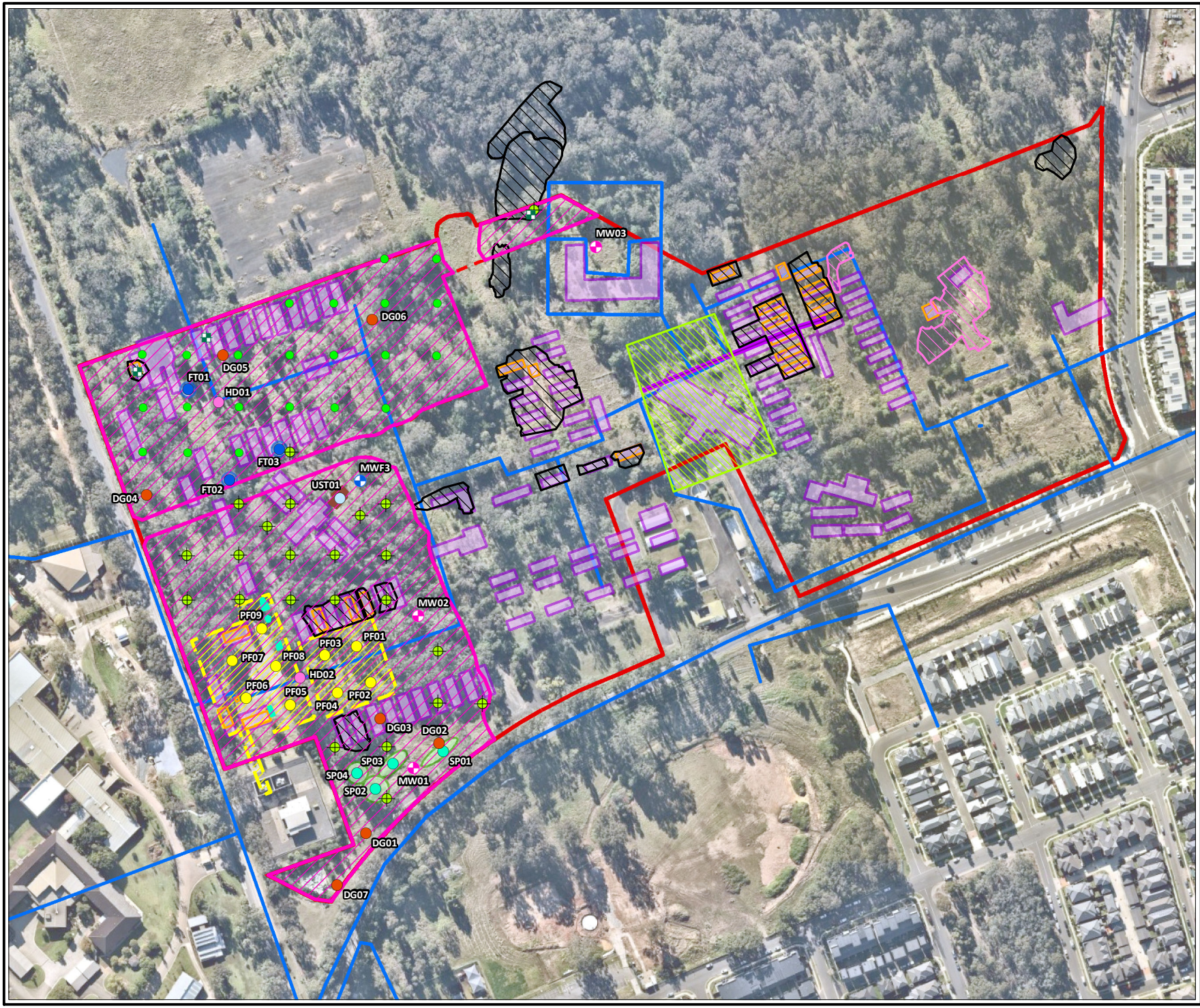
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL SAMPLE LOCATIONS**

**FIGURE 3A**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R04 Rev A\63325_03A_HistoricalSampleLocations.mxd
Reference: www.nearmap.com - 20220604




**Legend**

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

**Site Features**

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile
- Hydrant Lines
- POL-F Investigation Area (URS, 2004)

**Validation Areas:**

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench

**Sample Location, JBS&G (2022)**

- POL-F Sample
- Monitoring Well
- Stockpile Sample
- UST
- Data Gap Sample
- Fly Tipping Sample

**Sample Location, JBS&G (2021)**

- Monitoring Well
- Test Pit, Asbestos
- Hydrant Samples

**Historical Sample Locations**

- Soil Sample, SKM 2007
- Soil Sample, SKM 2008

JBS&G

Job No: 63325

Client: Landcom

| Version: R04 Rev 0 | Date 18/01/2023 |
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Scale 1:3,500

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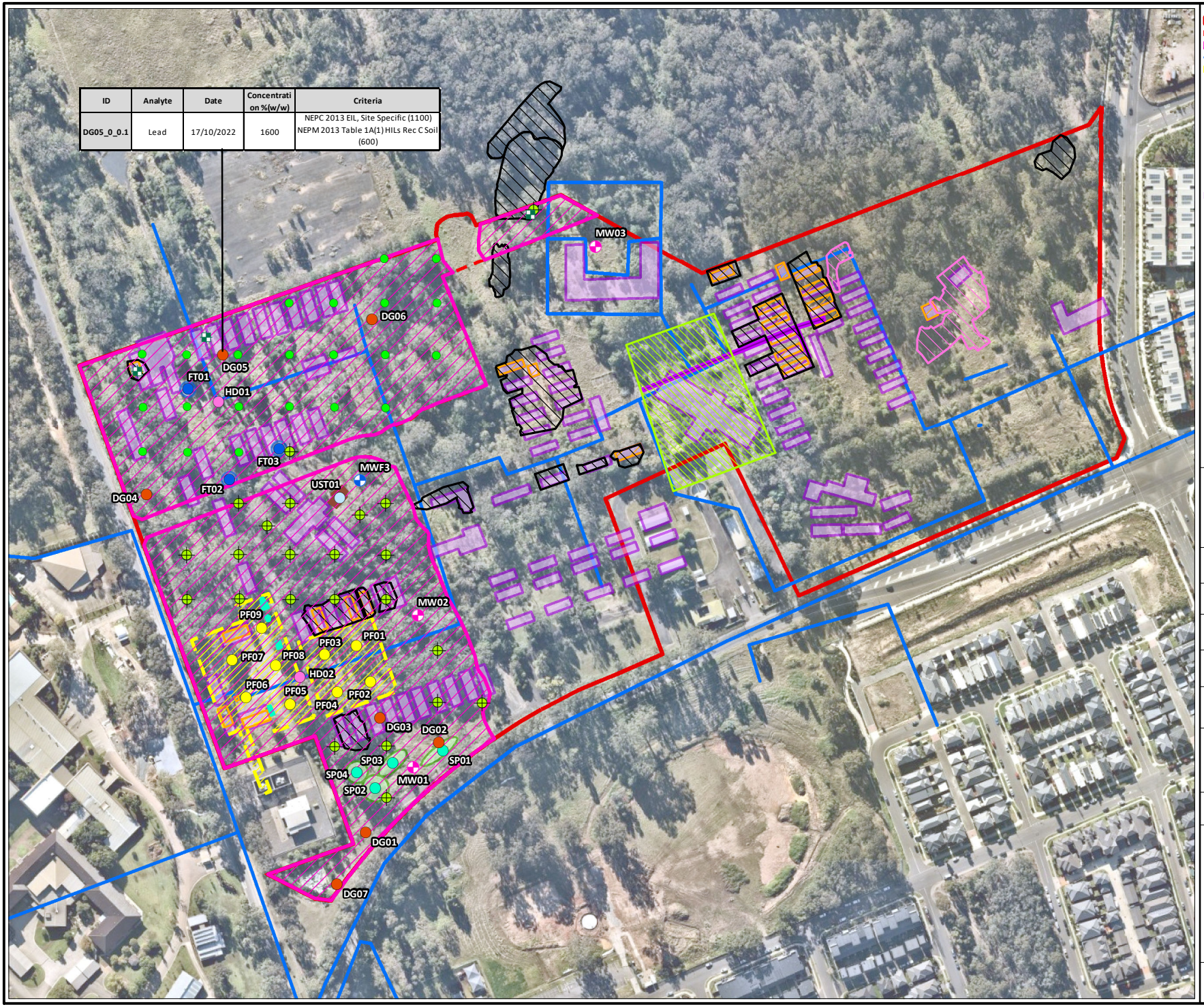
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**SAMPLE LOCATIONS**

**FIGURE 3B**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R04 Rev A\63325_03B_SampleLocations.mxd
Reference: www.nearmap.com - 20220604




**Legend**

- Approximate Site Boundary
- Stage Boundary
- Investigation Area
- Hydrant Lines
- POL-F Investigation Area (URS, 2004)

**Validation Areas:**

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench

**Site Features**

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile

**Sample Location, JBS&G (2022)**

- POL-F Sample
- Monitoring Well
- Stockpile Sample
- UST
- Data Gap Sample
- Fly Tipping Sample
- Hydrant Samples

**Sample Location, JBS&G (2021)**

- Monitoring Well
- Test Pit, Asbestos

**Historical Sample Locations**

- Soil Sample, SKM 2007
- Soil Sample, SKM 2008

JBS&G

Job No: 63325

Client: Landcom

| Version: R04 Rev 0 | Date 18/01/2023 |
|---|---|
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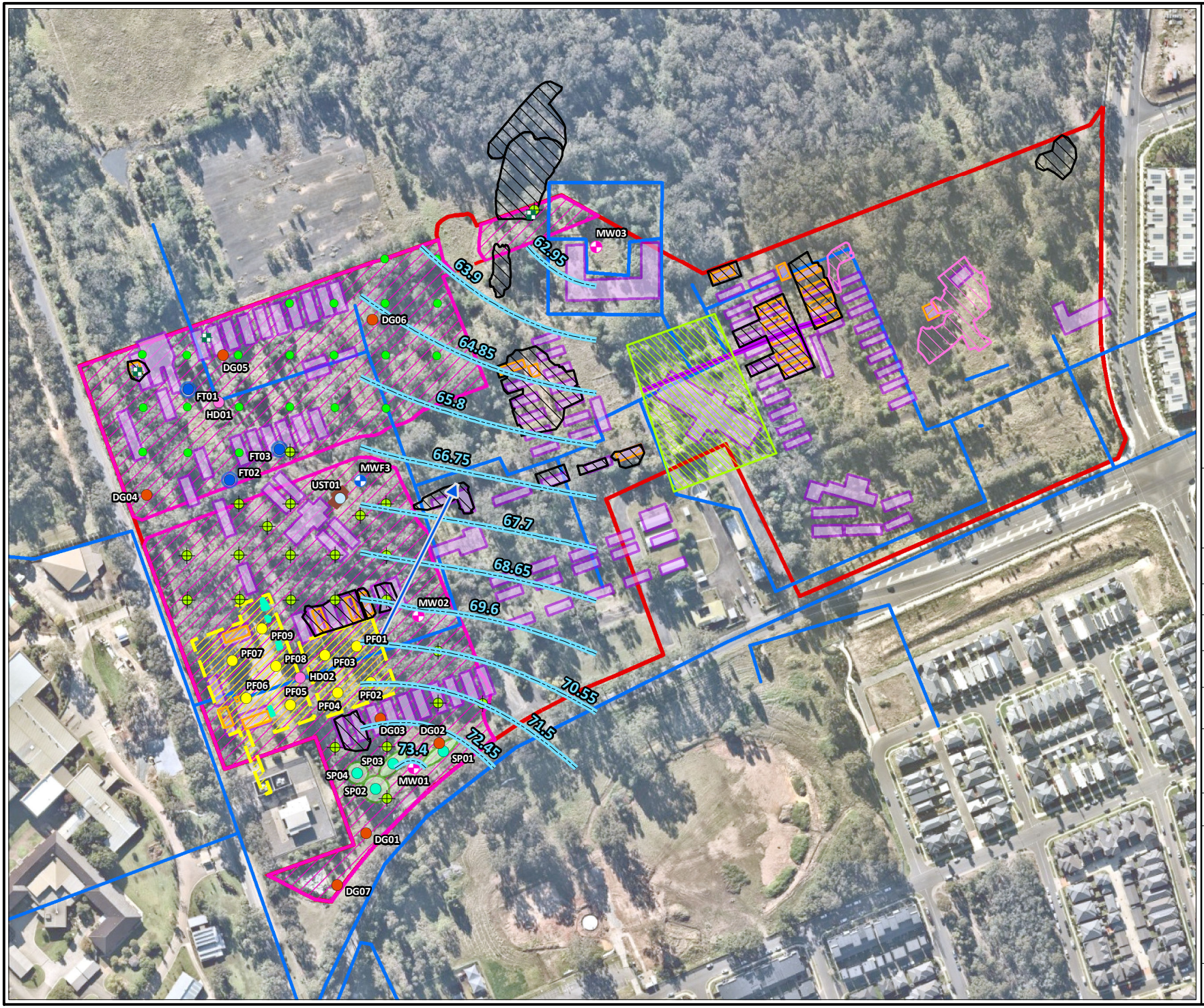
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**EXCEEDANCES**

**FIGURE 4**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R04 Rev A\63325_04_Exceedances.mxd
Reference: www.nearmap.com - 20220604




**Legend**

- Investigation Area
- Approximate Site Boundary
- Stage Boundary

**Validation Areas:**

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench
- POL-F Investigation Area (URS, 2004)

**Site Features**

- Hydrant Lines

**Sample Location, JBS&G (2022)**

- POL-F Sample
- Monitoring Well
- Stockpile Sample
- UST
- Data Gap Sample
- Fly Tipping Sample
- Hydrant Samples

**Sample Location, JBS&G (2021)**

- Monitoring Well
- Test Pit, Asbestos

**Historical Sample Locations**

- Soil Sample, SKM 2007
- Soil Sample, SKM 2008
- Infered Groundwater Direction
- Reduced Water Levels (October 2022) (mAHD)

JBS&G

Job No: 63325

Client: Landcom

| Version: R04 Rev 0 | Date 18/01/2023 |
|---|---|
| Drawn By: YY/PA | Checked By: MD |

Scale 1:3,500

0 40 80

metres

Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**GROUNDWATER CONTOUR PLAN**

**FIGURE 5**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\R04 Rev A\63325_05_GroundwaterContourPlan.mxd
Reference: www.nearmap.com - 20220604

## Appendix A Photo Log

**PHOTOGRAPH 1: DENSE VEGETATION ACROSS MAJORITY SITE (17/10/2022)**



**PHOTOGRAPH 2: FORMER POL BITUMEN HARDSTAND LOCATED IN THE WESTERN PORTION OF INVESTIGATION AREA – LOT 3 (17/08/2022)**



**PHOTOGRAPH 3: RESIDUAL BUILDING FOOTPRINTS OBSERVED (19/10/2022)**



**PHOTOGRAPH 4: VEGETATED STOCKPILES – SOUTHERN PORTION OF SITE (17/08/2022)**



JBS&G

Job No: 63325

Client: Landcom

| Version: R03 Rev 0 | Date: 19/01/2023 |
|---|---|
| Drawn By: MD | Checked By: JR |

Not to Scale

Coord. Sys n/a

**Partial Precinct 3**
**Lot 3 DP1272931**
**Open Space Landuse**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**APPENDIX A**

## PHOTOGRAPH 5: DG01 TEST PIT (17/10/2022)



## PHOTOGRAPH 6: DG02 TEST PIT (17/10/2022)



## PHOTOGRAPH 7: DG04 TEST PIT (19/10/2022)



## PHOTOGRAPH 8: DG05 TEST PIT (17/10/2022)



JBS&G

Job No: 63325

Client: Landcom

| Version: R03 Rev 0 | Date: 19/01/2023 |
|---|---|
| Drawn By: MD | Checked By: JR |

Not to Scale

Coord. Sys n/a

**Partial Precinct 3**
**Lot 3 DP1272931**
**Open Space Landuse**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**APPENDIX A**

## PHOTOGRAPH 9: DG06 TEST PIT (18/10/2022)



## PHOTOGRAPH 10: DG07 TEST PIT (18/10/2022)



## PHOTOGRAPH 11: FT01 STOCKPILE TEST PIT (17/10/2022)



## PHOTOGRAPH 12: FT02 STOCKPILE TEST PIT (17/10/2022)



JBS&G

Job No: 63325

Client: Landcom

| Version: R03 Rev 0 | Date: 19/01/2023 |
|---|---|
| Drawn By: MD | Checked By: JR |

Not to Scale

Coord. Sys n/a

**Partial Precinct 3**
**Lot 3 DP1272931**
**Open Space Landuse**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**APPENDIX A**

## PHOTOGRAPH 13: FT03 STOCKPILE TEST PIT (17/10/2022)



## PHOTOGRAPH 14: PF01 TEST PIT (17/10/2022)



## PHOTOGRAPH 15: PF03 TEST PIT (17/10/2022)



## PHOTOGRAPH 16: PF04 TEST PIT (17/10/2022)



JBS&G

Job No: 63325

Client: Landcom

| Version: R03 Rev 0 | Date: 19/01/2023 |
|---|---|
| Drawn By: MD | Checked By: JR |

Not to Scale

Coord. Sys n/a

**Partial Precinct 3**
**Lot 3 DP1272931**
**Open Space Landuse**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**APPENDIX A**

## PHOTOGRAPH 17: PF05 TEST PIT (17/10/2022)



## PHOTOGRAPH 18: PF07 TEST PIT (17/10/2022)



## PHOTOGRAPH 19: PF08 TEST PIT (17/10/2022)



## PHOTOGRAPH 20: PF09 TEST PIT (17/10/2022)



JBS&G

Job No: 63325

Client: Landcom

| Version: R03 Rev 0 | Date: 19/01/2023 |
|---|---|
| Drawn By: MD | Checked By: JR |

Not to Scale

Coord. Sys n/a

**Partial Precinct 3**
**Lot 3 DP1272931**
**Open Space Landuse**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**APPENDIX A**

## PHOTOGRAPH 21: UST01 TEST PIT (18/10/2022)



## PHOTOGRAPH 22: SP01 STOCKPILE TEST PIT (17/10/2022)



## PHOTOGRAPH 23: CONCRETE INCLUSIONS AS IDENTIFIED IN STOCKPILE SP02 (17/10/2022)



## PHOTOGRAPH 24: SP02 STOCKPILE TEST PIT (17/10/2022)



JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R03 Rev 0 | Date: 19/01/2023 |
| Drawn By: MD | Checked By: JR |
| Not to Scale | |
| Coord. Sys n/a | |

**Partial Precinct 3**
**Lot 3 DP1272931**
**Open Space Landuse**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**APPENDIX A**

## PHOTOGRAPH 25: SP03 STOCKPILE TEST PIT (17/10/2022)



## PHOTOGRAPH 26: SP04 STOCKPILE TEST PIT (17/10/2022)



## PHOTOGRAPH 27: TESTPIT UST01 (18/10/2022)



## PHOTOGRAPH 28: INVESTIGATION OF STOCKPILES (17/10/2022)



JBS&G

Job No: 63325

Client: Landcom

| Version: R03 Rev 0 | Date: 19/01/2023 |
|---|---|
| Drawn By: MD | Checked By: JR |

Not to Scale

Coord. Sys n/a

**Partial Precinct 3**
**Lot 3 DP1272931**
**Open Space Landuse**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**APPENDIX A**

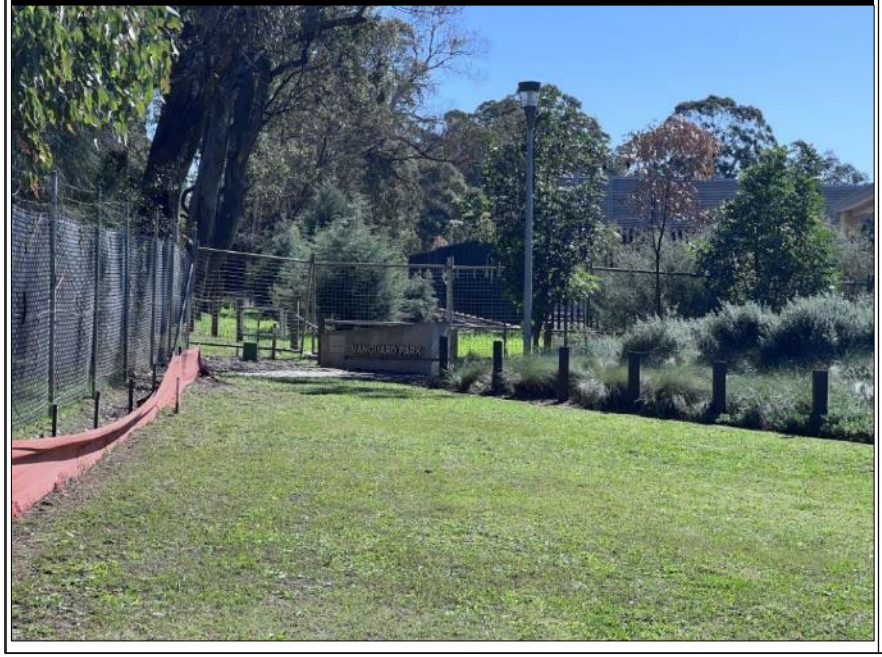
## PHOTOGRAPH 29: 2022 INSTALLED MONITORING WELL (28/10/2022)



## PHOTOGRAPH 30: GROUNDWATER MONITORING LOCATION MWF3 (28/10/2022)



## PHOTOGRAPH 31: VANGUARD PARK SOUTH-WEST OF THE INVESTIGATION AREA (17/08/2022)



## PHOTOGRAPH 32: POL HARDSTAND (17/10/2022)



JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R03 Rev 0 | Date: 19/01/2023 |
| Drawn By: MD | Checked By: JR |
| Not to Scale | |
| Coord. Sys n/a | |

**Partial Precinct 3**
**Lot 3 DP1272931**
**Open Space Landuse**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**APPENDIX A**

## PHOTOGRAPH 33: HARDSTAND ADJACENT UST AREA (18/10/2022)



## PHOTOGRAPH 34: VANGUARD PARK (19/10/2022)



## PHOTOGRAPH 35: INVESTIGATION OF STEEL HYDRANT LINES (19/10/2022)



## PHOTOGRAPH 36: EXISTING INFRASTRUCTURE (HYDRANT)



JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R03 Rev 0 | Date: 19/01/2023 |
| Drawn By: MD | Checked By: JR |
| Not to Scale | |
| Coord. Sys n/a | |

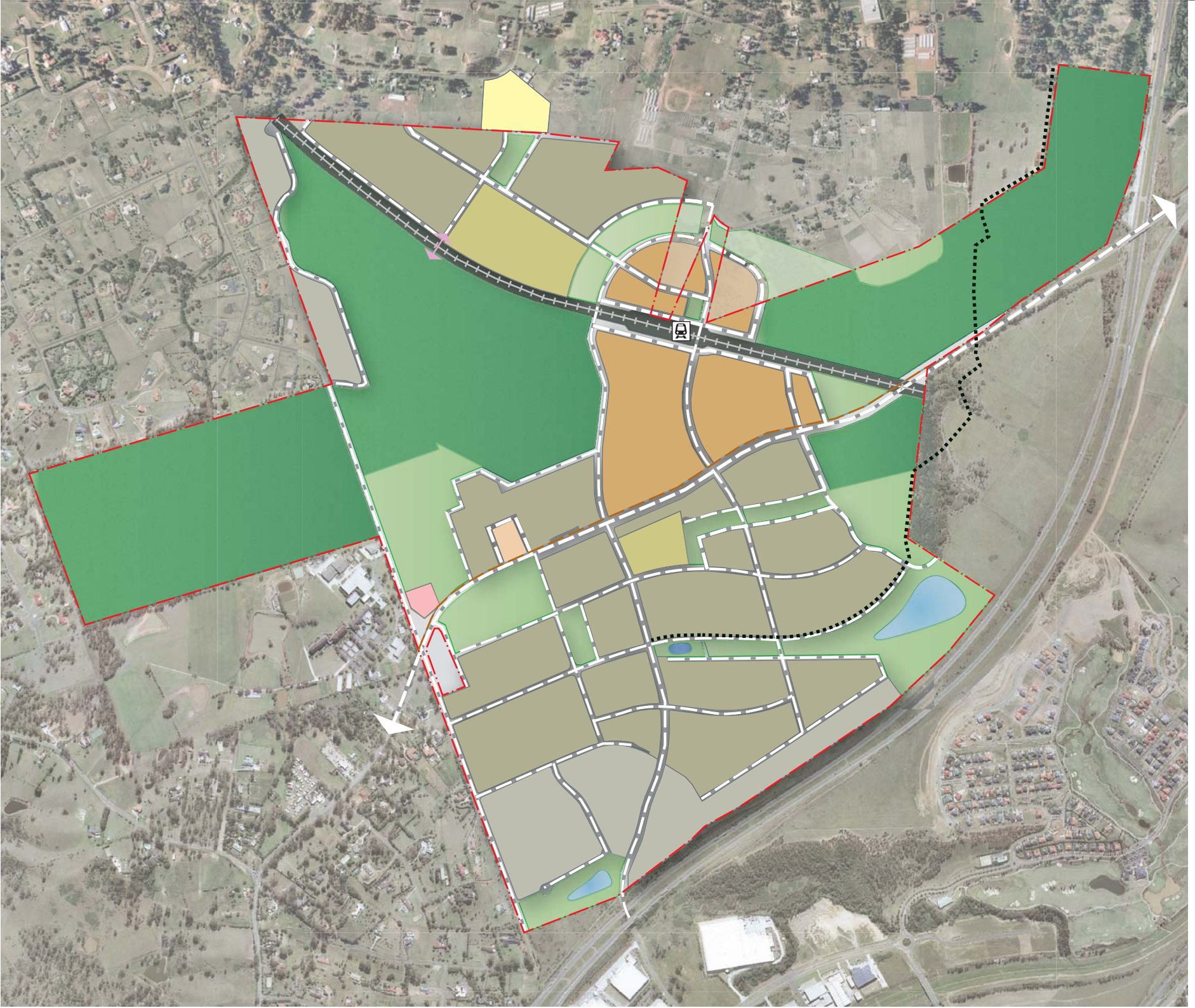
**Partial Precinct 3**
**Lot 3 DP1272931**
**Open Space Landuse**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**APPENDIX A**

# Appendix B Historical Figures and Historical Laboratory Reported Results

## B1. Landcom Edmondson Park Concept Plan



LANDCOM

**KEY**

- Site Boundary
- L.G.A. Boundary
- General Residential
- Environmental Living
- Mixed Use Town Centre
- Public Open Space
- Regional Park
- Heritage Precinct
- Substation
- TCA Rail Corridor
- Train Station
- Schools
- Pedestrian Link over TCA Corridor
- Ornamental Pond
- OSD Basin
- Sewer Line
- Road Links
- Former School Site

**Dwg Name:** Concept Plan

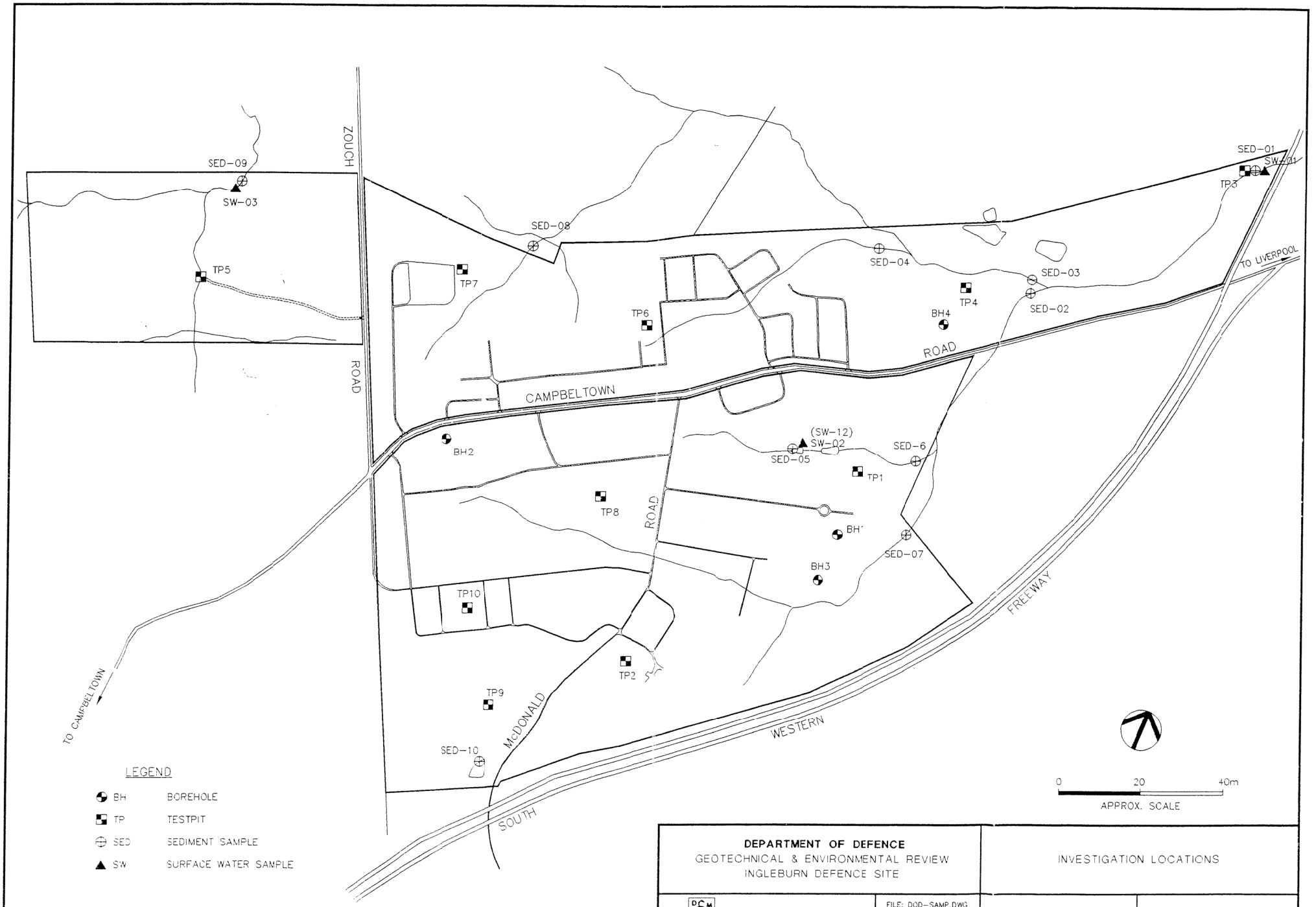
**Date:** 27 Aug 2010

0m 100m 250m 500m

EPS

Edmondson Park South

## B2. Dames & Moore (1999) Investigation Locations




**DEPARTMENT OF DEFENCE**
GEOTECHNICAL & ENVIRONMENTAL REVIEW
INGLEBURN DEFENCE SITE

INVESTIGATION LOCATIONS

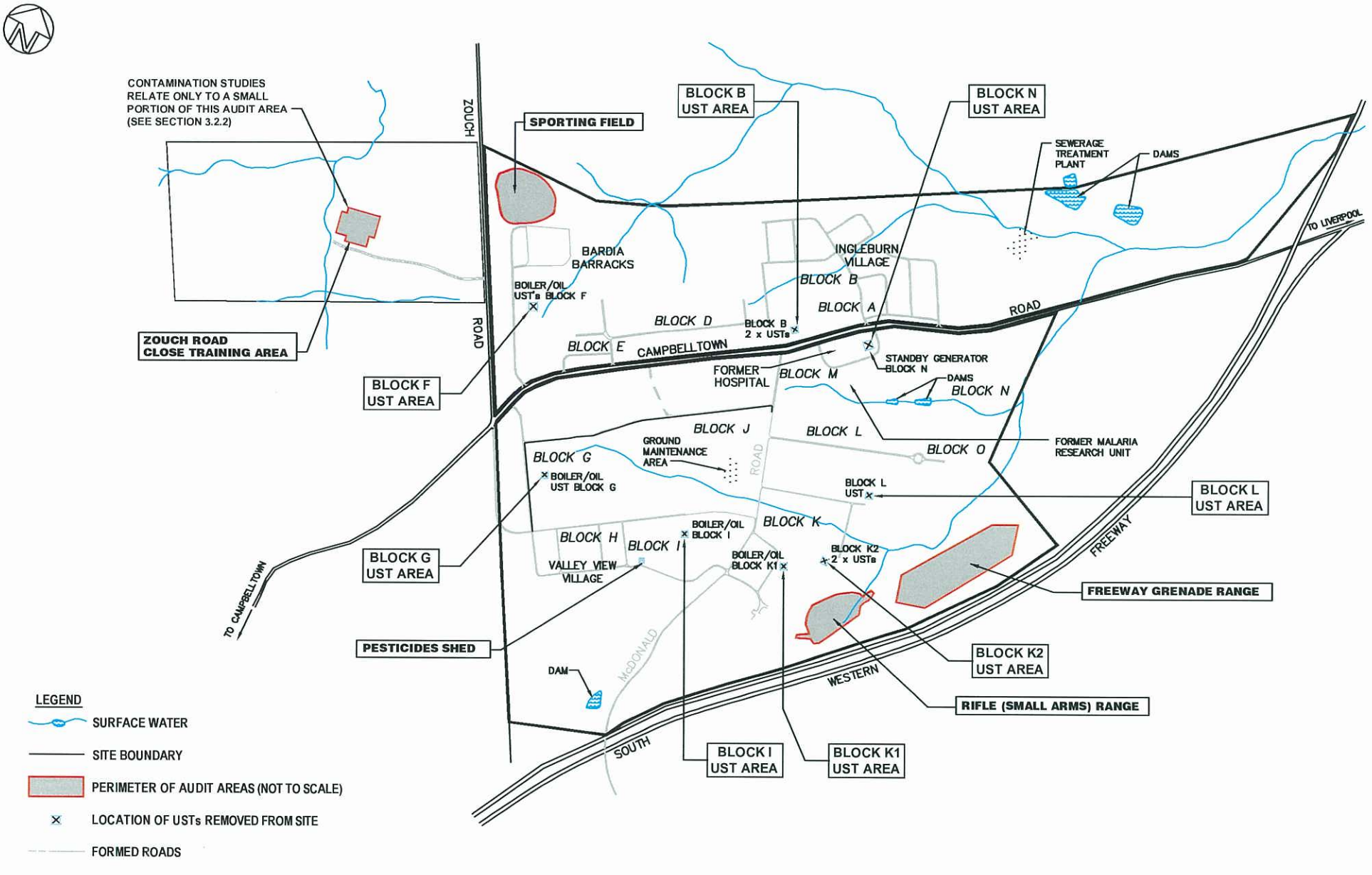
DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

FILE: DOD-SAMP.DWG
DATE: 14/7/98
REVISION: 0

12343-063-070

FIGURE 3

## B3. Coffee (2009) Site Audit Report – Audit Areas




SOURCE: URS AUSTRALIA PTY LTD

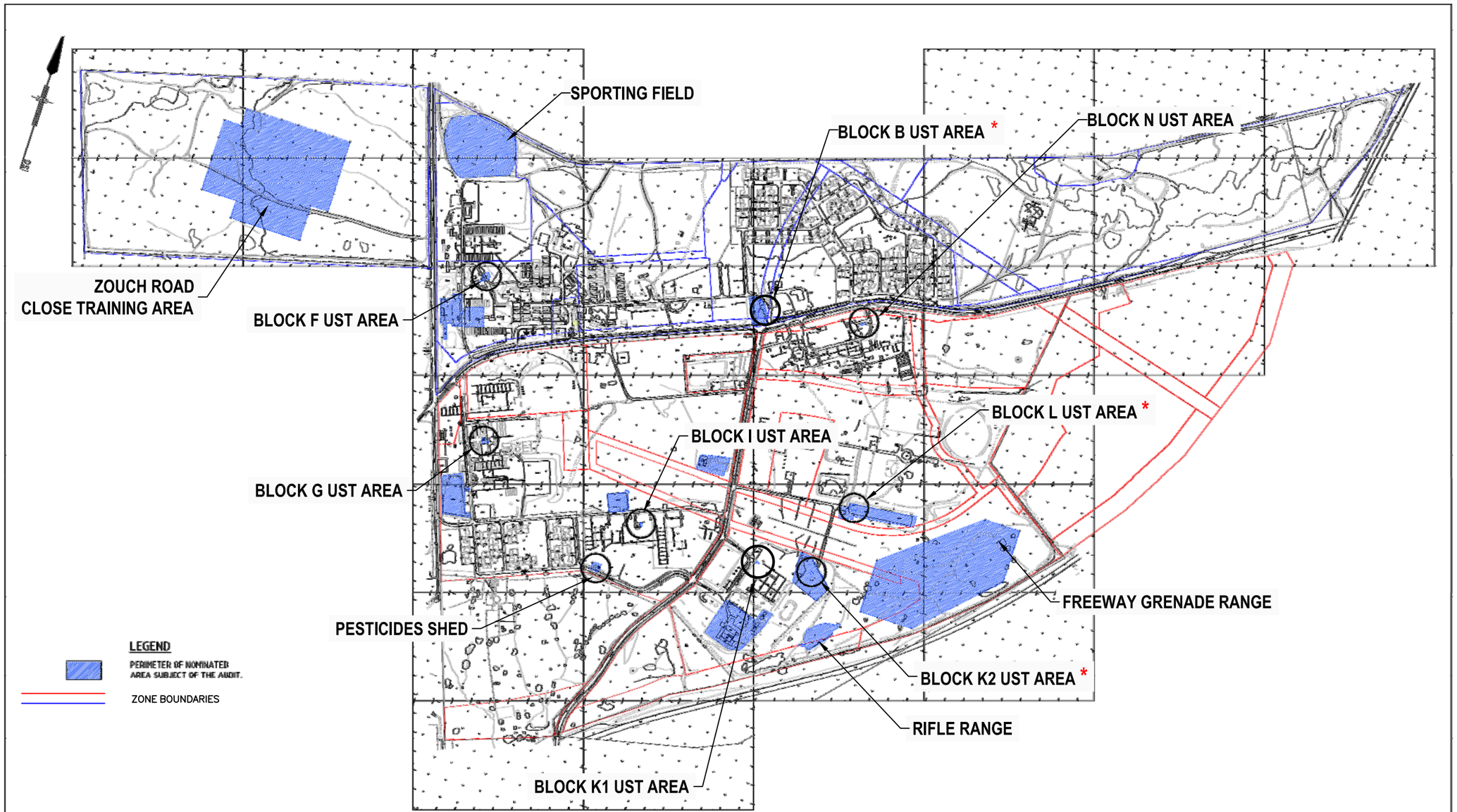
| revision | description | drawn | approved | date |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

100 0 100 300 500
Horizontal Scale (metres)

| | |
|---|---|
| drawn | XH/AW |
| approved | TS |
| date | 18.07.2008 |
| scale | 1:10 000 |
| original size | A3 |

coffey environments
SPECIALISTS IN LIVING AND WORKING PLACES

client: DEPARTMENT OF DEFENCE
project: SITE AUDIT REPORT DEFENCE INGLEBURN SITE
title: APPROXIMATE LOCATION OF AUDIT AREAS
project no: ENVILCOV00208AB-R01
figure no: FIGURE 2




NOTE:
1. ISG COORDINATES USED.
2. BASE SURVEY BY HARD & FORESTER PTY LTD (BASCOL, JUNE 1998 FOR DEPARTMENT OF DEFENCE.
3. AUDIT AREAS SURVEYED BY BENTHEM DE NETT PTY LTD FOR URS.
4. MAP COMPILED BY GHD PTY LTD.

NOTE:
* THE AUDIT AREA IS AT THE CENTRE OF THE CIRCLE AND IS THE SMALLER AREA DEFINED INSIDE LARGER AREAS OF BLUE HATCHING.

PRELIMINARY

| No | Revision | Note | Drawn | Checked | Approved | Date |
|---|---|---|---|---|---|---|
| A | PRELIMINARY ISSUE | | HW | | | 7.08.09 |

0 50 100 150 200 250m
SCALE 1:5000 AT ORIGINAL SIZE

GHD CLIENTS | PEOPLE | PERFORMANCE

DO NOT SCALE

Drawn H WARR | Designed R TRAUERNARD
Drafting Check | Design Check
Approved
Date
Scale AS SHOWN

Client DEPARTMENT OF DEFENCE
Project INGLEBURN
Title LOCATION OF AREAS SUBJECT OF AUDIT BY COFFEY ENVIRONMENTS
Size A1 Drawing No: 21-11523-SK006 Rev: A

SOURCE: GHD - 21-11523-SK006

| revision | description | drawn | approved | date |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| | |
|---|---|
| drawn | MV |
| approved | TS |
| date | 01.07.2009 |
| scale | AS SHOWN |
| original size | A3 |

coffey environments
SPECIALISTS IN LIVING AND WORKING PLACES

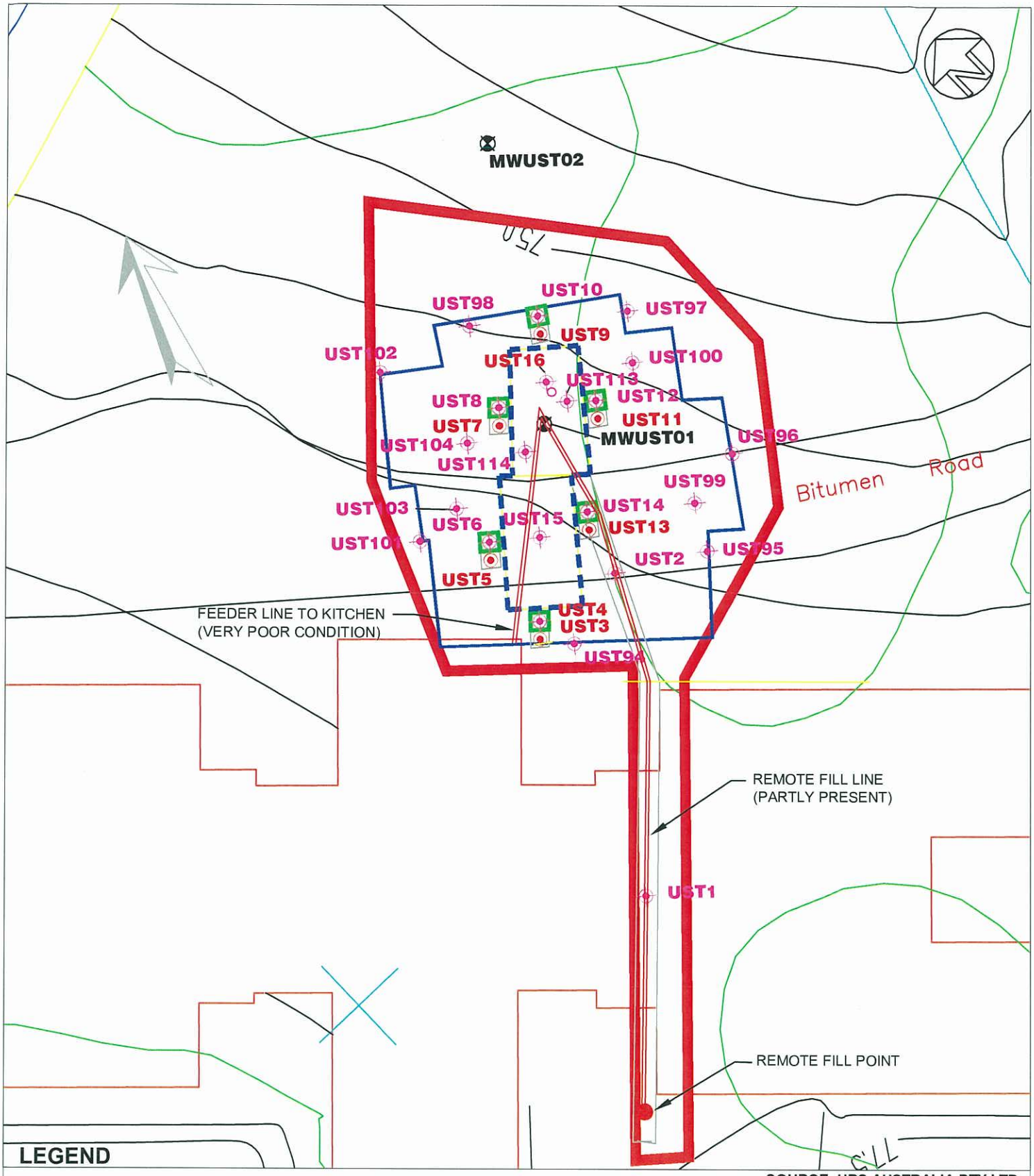
client: DEPARTMENT OF DEFENCE

project: SITE AUDIT REPORT
DEFENCE INGLEBURN SITE

title: SURVEY PLAN SHOWING DEFENCE INGLEBURN SITE AND AREAS SUBJECT OF THE AUDIT

project no: ENVILCOV00208AB-R01

figure no: FIGURE 3




## LEGEND

- REMEDIATION SAMPLE LOCATION
- UPPER LEVEL OF EXCAVATION
- LOWER LEVEL OF EXCAVATION
- VALIDATION SAMPLE LOCATION
- GROUNDWATER WELL LOCATION
- SURVEYED EXTENT OF VALIDATED FORMER UST AREA
- INFERRED GROUNDWATER FLOW DIRECTION
- EXTENT OF EXCAVATION (16/04/02)
- EXTENT OF EXCAVATION (17/05/02)
- FUEL LINES (PRESENT AT TIME OF REMEDITATION)

SOURCE: URS AUSTRALIA PTY LTD

2.5 0 5 10

Scale (metres)

| | |
|---|---|
| drawn | XH/AW |
| approved | TS |
| date | 18/07/08 |
| scale | AS SHOWN |
| original size | A4 |

coffey environments
SPECIALISTS IN LIVING AND WORKING PLACES

client: DEPARTMENT OF DEFENCE

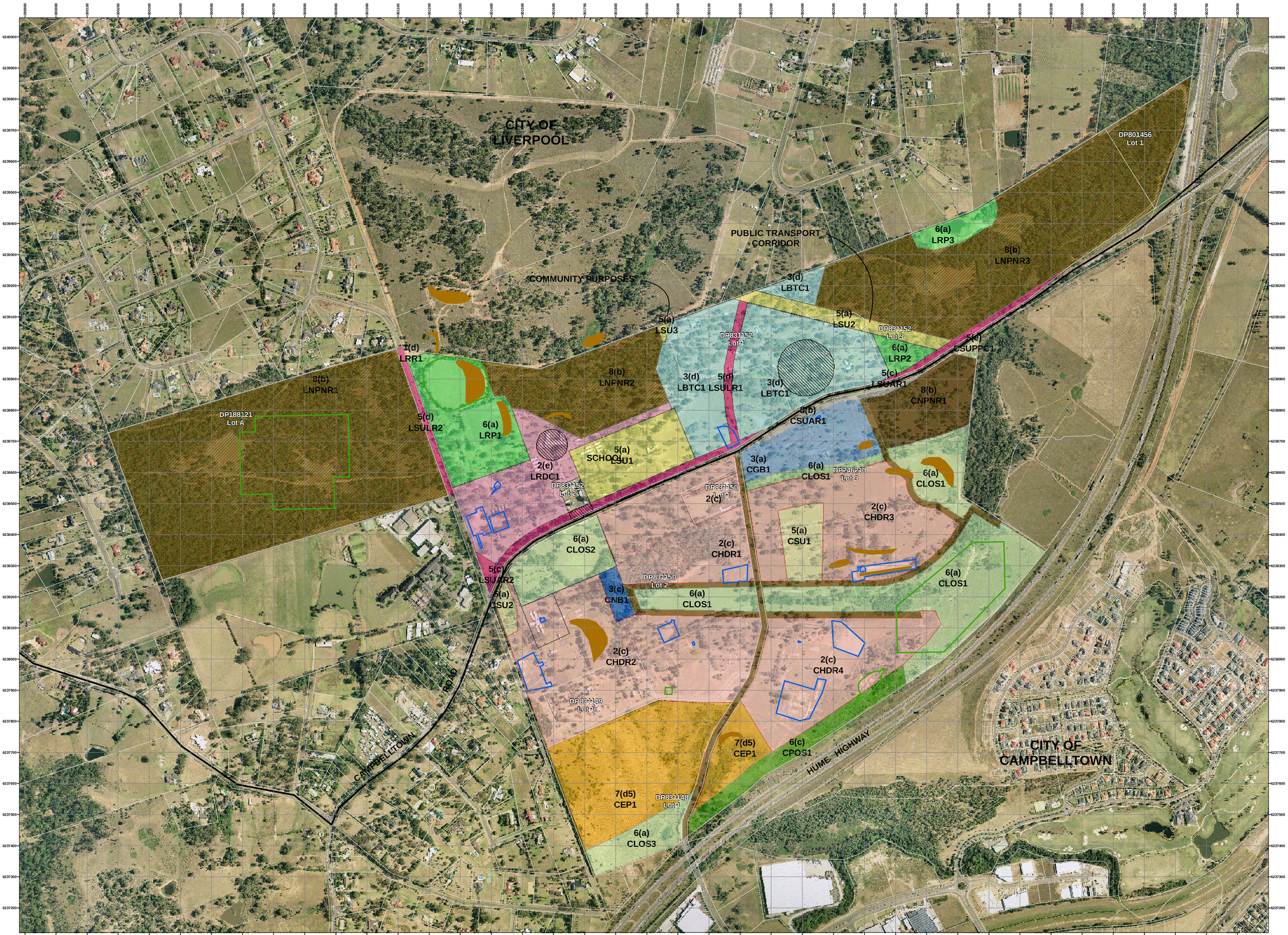
project: SITE AUDIT REPORT
DEFENCE INGLEBURN SITE

title: BLOCK F UST AREA SAMPLE LOCATIONS

project no: ENVILCOV00208AB-R01

figure no: FIGURE 20B

## B4. AECOM (2009) Site Audit Areas




## Legend

- Signed off remediated area boundaries
- UST remediation area boundaries
- DCP Identified Fill Areas
- Building footprint boundaries

### Liverpool LEP

- 1(d) Rural - Residential
- 2(e) Residential - Developing Communities
- 2(f) Residential - Mixed Development
- 3(b) Business - Highway Retail
- 3(d) Business - Town Centre
- 5(a) Special Uses
- 5(c) Special Uses - Arterial Roads
- 5(d) Special Uses - Local Roads
- 6(a) Recreation - Public
- 6(b) Recreation - Private
- 8(b) National Parks and Nature Reserves
- Land to which Cl.32D(2) applies
- Heritage item (Cl.6)

| Zone | Section | Area m2 |
|---|---|---|
| 1(d) | LRR1 | 1156 |
| 5(c) | LSUAR2 | 28377 |
| 2(e) | LRDC1 | 107459 |
| 5(d) | LSULR2 | 10076 |
| 3(d) | LBTC1 | 232231 |
| 5(a) | LSU1 | 64944 |
| 5(a) | LSU2 | 27678 |
| 5(a) | LSU3 | 1412 |
| 5(c) | LSUAR1 | 12523 |
| 5(d) | LSULR1 | 12064 |
| 6(a) | LRP1 | 100165 |
| 6(a) | LRP2 | 13385 |
| 6(a) | LRP3 | 19865 |
| 8(b) | LNPNR1 | 484998 |
| 8(b) | LNPNR2 | 118093 |
| 8(b) | LNPNR3 | 356744 |

### Campbelltown LEP

- 2(c), Higher Density Residential
- 3(a), General Business
- 3(c), Neighbourhood Business
- 5(a), Special Uses A
- 5(b), Special Uses Arterial Roads
- 5(d), Special Uses Local Roads
- 5(e), Special Uses Public Purposes Corridor
- 6(a), Local Open Space
- 6(c), Private Open Space
- 7(d5), Environmental Protection 1 hectare minimum
- 8(b), National Parks and Nature Reserves
- Land referred to in clause 64(2)
- Heritage Item

| Zone | Section | Area m2 |
|---|---|---|
| 2(c) | CHDR1 | 125393 |
| 2(c) | CHDR2 | 262368 |
| 2(c) | CHDR3 | 159869 |
| 2(c) | CHDR4 | 155570 |
| 3(a) | CGB1 | 63698 |
| 3(c) | CNB1 | 10630 |
| 5(a) | CSU1 | 31169 |
| 5(a) | CSU2 | 7773 |
| 5(b) | CSUAR1 | 8965 |
| 5(d) | CSULR1 | 80281 |
| 5(e) | CSUPPC1 | 2580 |
| 6(a) | CLOS1 | 232087 |
| 6(a) | CLOS2 | 55185 |
| 6(a) | CLOS3 | 35087 |
| 6(c) | CPOS1 | 47377 |
| 7(d5) | CEP1 | 197156 |
| 8(b) | CNPNR1 | 65120 |



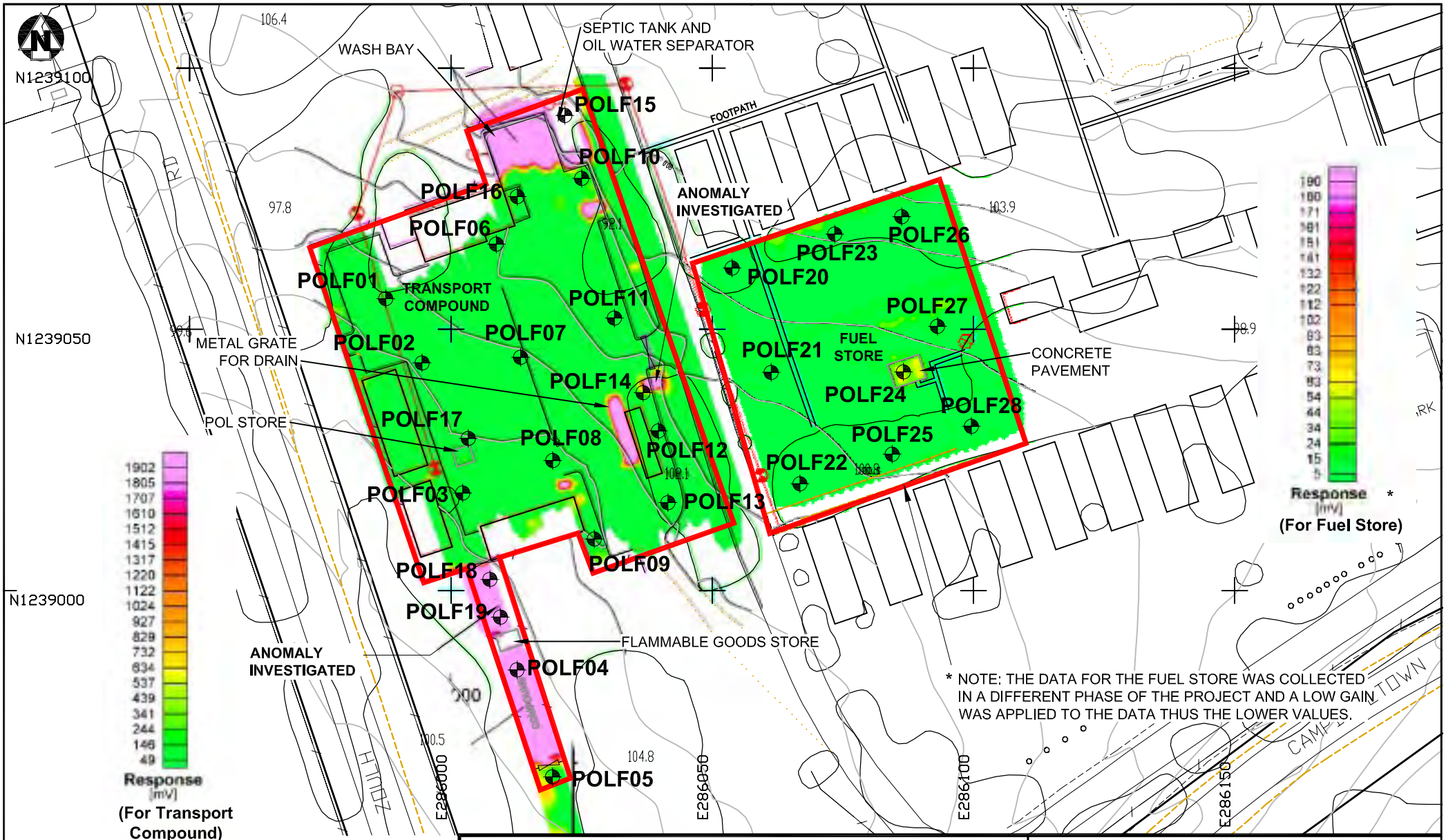

**Stage II Environmental Assessment Investigation Areas**

Ingleburn Defense Site, NSW

0 95 190 380

Metres

Projection : GDA 1994 MGA Zone 56
Cadastre from LPI
September 23, 2008
I:\ENVR\Projects\EN02203\Technical\GIS\Template\EN02203_074a.mxd




## LEGEND

- SAMPLE LOCATIONS
- AREA OF INVESTIGATION

SOURCE: GEOPHYSICAL DATA ALPHA GEOSCIENCES PTY LTD (2002)

CLIENT: **DEPARTMENT OF DEFENCE**

PROJECT: **INVESTIGATION OF MAINTENACE COMPOUNDS AND POL STORES, INGLEBURN DEFENCE SITE, NSW**

TITLE: **BLOCK F SAMPLE LOCATIONS**

A4

0 10 20 30 40 50
1:1000 (metres)

| | | | |
|---|---|---|---|
| DESIGNED: JT | APPROVED: | PROJECT: 12343-324 | FIGURE 4 |
| DRAWN: RR/JT | DATE: | CAD FILE: 019.DWG | |
| DATE: 19/11/03 | STATUS: FINAL | REVISION: A | |

URS

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SINCLAIR KNIGHT MERZ

GDA 94 MGA Zone 56

December 10, 2008
I:\ENVR\Projects\EN02203\Technical\GIS\Template\EN02203_054.mxd

0 255 510
Metres

**Figure 3**

Groundwater, Surface Water and Sediment Locations

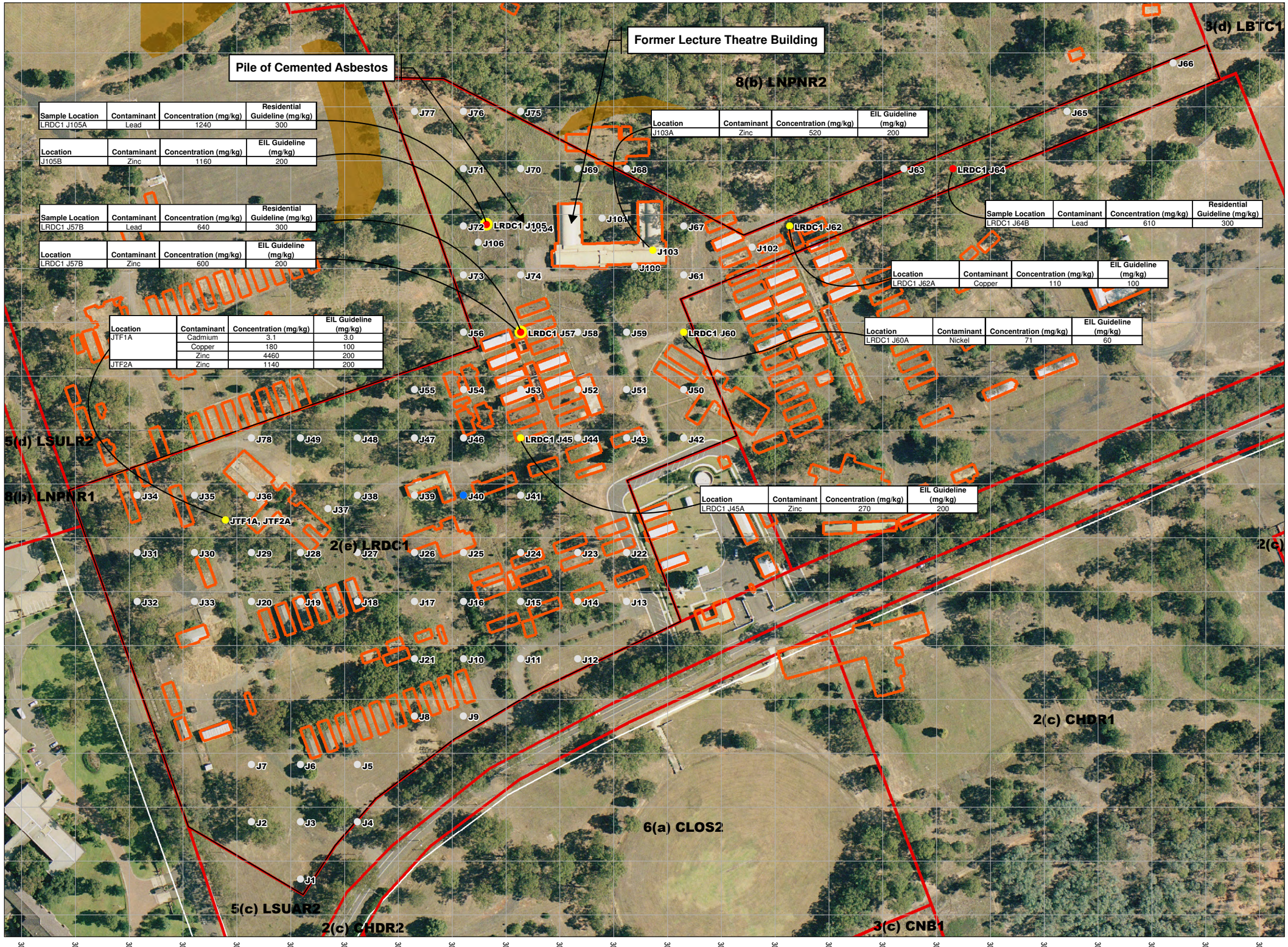



GDA 94 MGA Zone 56

July 13, 2007
I:\ENVR\Projects\EN02203\Technical\GIS\Template\EN02203_048.mxd

0 25 50
Metres

**Figure 4: LRP1 Stage II Investigation Locations**



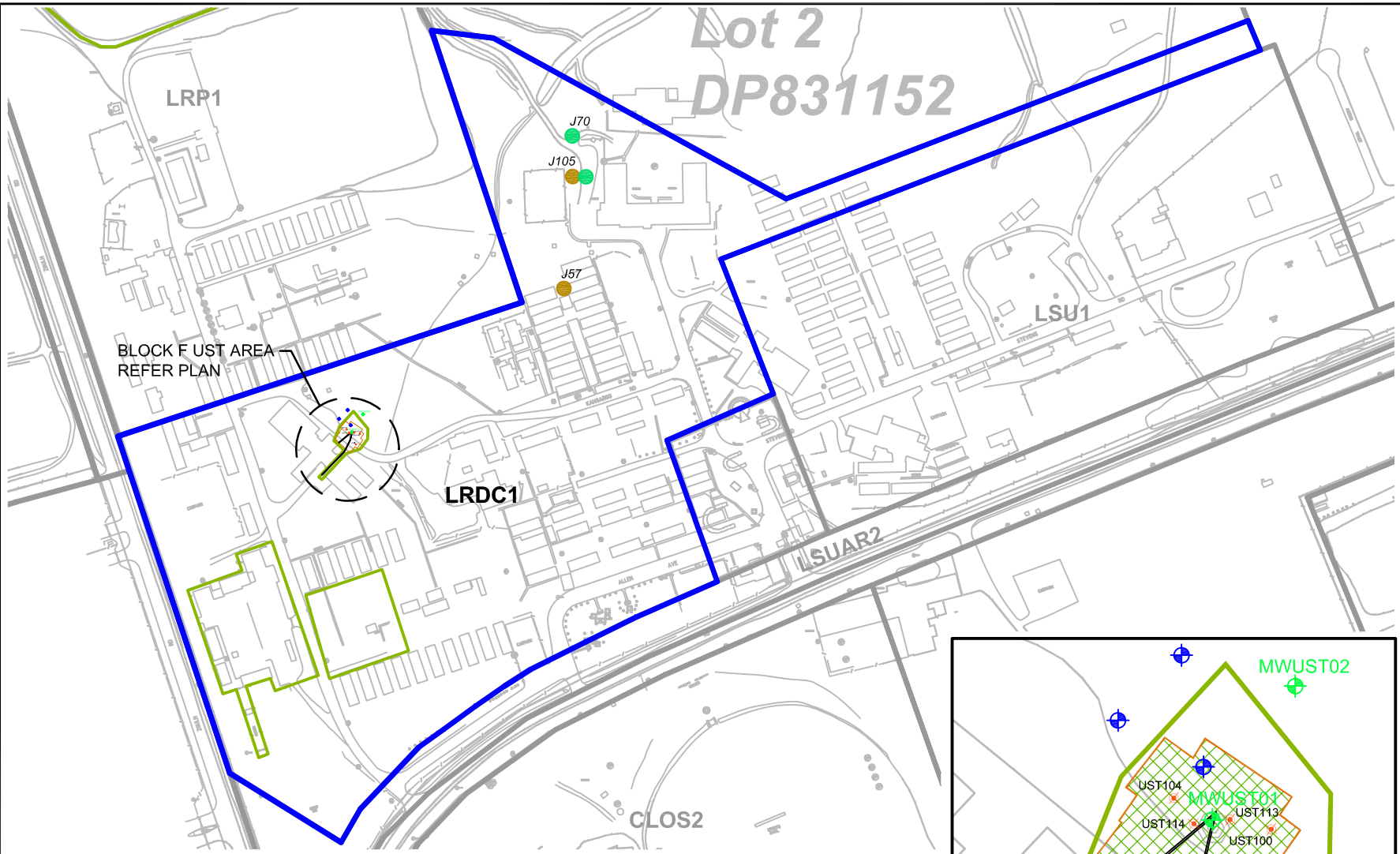

SINCLAIR KNIGHT MERZ SKM

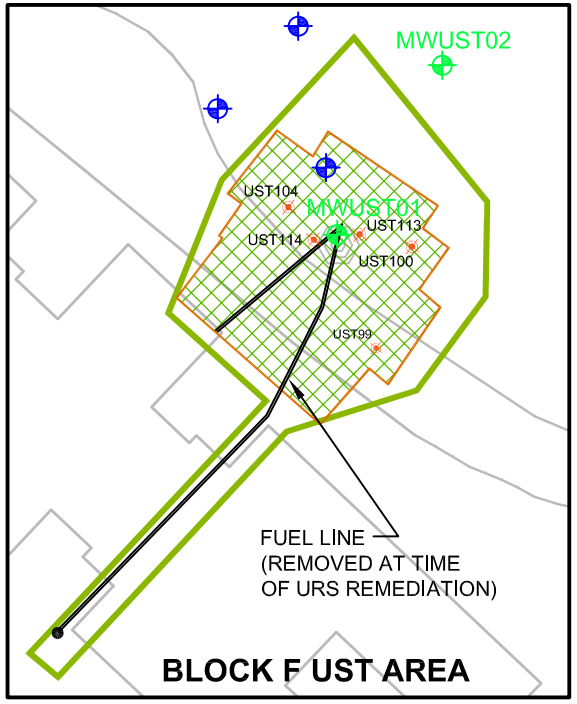
GDA 94 MGA Zone 56

December 16, 2008
I:\ENVR\Projects\EN02203\Technical\GIS\Template\EN02203_051a.mxd

0 50 100
Metres

**Figure 4: LRDC1 Stage II Investigation Locations**




| | |
|---|---|
| PROJECT-FILE NAME | S09166-01-F004 |
| DATE | 30/08/2009 |
| DRAWN | RR |
| APPROVED | RO |

**LEGEND**

- LIVERPOOL CITY COUNCIL SUB-SITE BOUNDARIES
- CAMPBELLTOWN CITY COUNCIL SUB-SITE BOUNDARIES
- BUILDING FOOTPRINTS (PREVIOUS & CURRENT)
- AREAS OF SITE SUBJECT TO PREVIOUS SITE AUDIT REPORT AND SITE AUDIT STATEMENT (COFFEY, 2009)
- EXTENT OF URS REMEDIATION EXCAVATION (URS, 2002)

**PRE-REMEDIATION WORKS REQUIRED:**

INSPECTION OF BUILDING FOOTPRINTS FOR ACM AND PAINT FRAGMENTS.(SEE APPENDIX F)
INSPECTION OF SUB-SITE FOR VISIBLE CONTAMINATION AND PHYTOTOXIC IMPACT.

- EXISTING MONITORING WELL
- PROPOSED LOCATION FOR NEW MONITORING WELLS

**REMEDIATION WORKS REQUIRED:**

ESTIMATED EXTENT OF REMEDIATION -

- ASBESTOS FIBRES
- LEAD - APPROX. 500m³ (SEE TABLE 4)
- TPH and BTEX
- RESIDUAL TPH & BTEX (URS, 2002)

REMOVAL OF ACM SURROUNDING BUILDINGS.
REMOVAL OF FLY TIP WASTE AT BLOCK F.
REMOVAL OF FLY TIP WASTE (SEE APPENDIX C).

SUB-SITE AREA: **10.7ha**
PROPOSED LAND USE: **Residential (low density)**

0 40 80 120
metres

CLIENT
**DEPARTMENT OF DEFENCE**

PROJECT
REMEDIAL ACTION PLAN
INGLEBURN DEFENCE SITE

TITLE
**LRDC1 - ESTIMATED EXTENT OF REMEDIATION WORKS**

FIGURE
**4**

Ryall Environmental Pty Limited
ABN 70 131 833 228
PO Box 1021
Rozelle NSW 2039

A4
Plotted By: RaymondR Plot Date: 08/11/09 - 16:08 Cad File: C:\Acad Autosave\Active\Publish_3784\S09166-01-F004.dwg

## B5. AECOM (2011) Site Audit Areas

300800.000000 301500.000000 302200.000000 302900.000000 303600.000000

6239500.000000
6239000.000000
6238500.000000
6238000.000000
6237500.000000

LSU3 LSU2 LSUAR1 CSUPPC1 LRP3 LNPNR3 LRP2 LBTC1 LRR1 LNPNR2 LRP1 LSULR2 LNPNR1 Block A CSUAR1 CNPNR1 Block B LSULR1 Block N CGB1 Block D LSU1 Block C Block M CLOS1 CLOS1 LRDC1 Block E Block F CHDR1 CHDR3 CSU1 Block L Block J CLOS2 LSUAR2 Block G CNB1 CLOS1 CSU2 CSULR1 Block I Block G CHDR2 Block K CHDR4 Block H CEP1 CEP1 CPOS1 CLOS3

Image © 2010 Google/SKM/Fugro

## Legend

- Site Boundary
- Area Excluded from the Site Audit Statement (Surveyed)
- Fill Areas
- POL Areas (Approximate Location)

**Zoning (Liverpool)**

- B1 Neighbourhood Centre
- E1 National Parks and Nature Reserves
- R1 General Residental
- R5 Large Lot Residential
- RE1 Public Recreation
- SP2 Infrastructure

**Zoning (Campbelltown)**

- 2 (c) Higher Density Residential
- 3 (a) General Business
- 3 (c) Neighbourhood Business
- 5 (a) Special Uses A
- 5 (b) Special Uses Arterial Roads
- 5 (d) Special Uses Local Roads
- 5 (e) Special Uses Public Purposes Corridor
- 6 (a) Local Open Space
- 6 (c) Private Open Space
- 7 (d5) Environmental Protection 1 Hectare Minimum
- 8 (b) National Parks and Nature Reserves

**Figure 5**

**Fill Areas as per DCP and POL (Petroleum, Oil Lubricant Blocks)**

| | | |
|---|---|---|
| Client: | Department of Defence | |
| Project: | Ingleburn Defence Site Stage 3 Remediation Validation Report | |
| Drawing No: | 0113181s_VALR_G048_R0.mxd | |
| Date: | 03/05/2011 | Drawing size: A3 |
| Drawn by: | NS | Reviewed by: HC |
| Projection: | GDA 1994 MGA Zone 56 | |
| Scale: | Refer to Scale Bar | |

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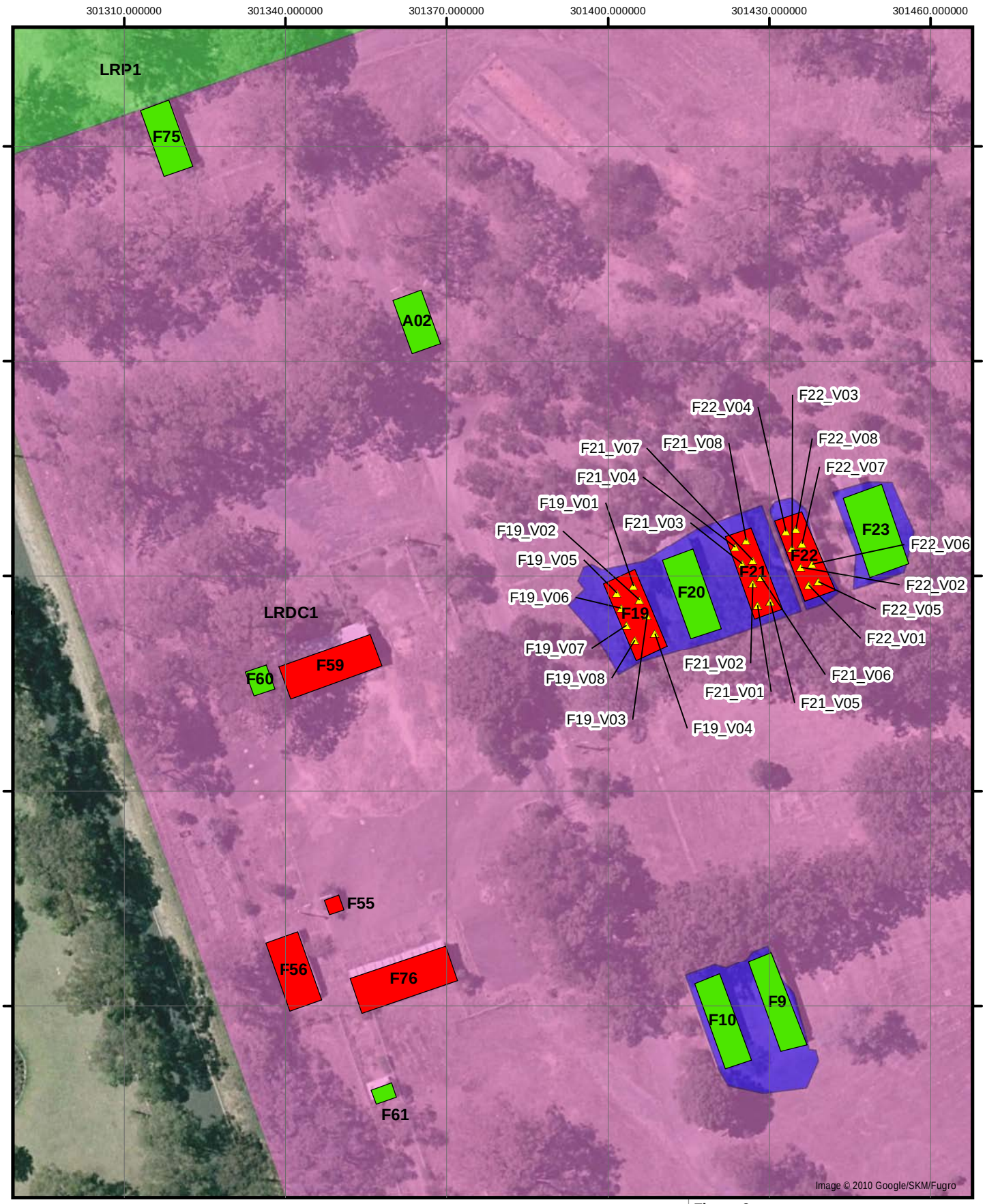
0 100 200 300m

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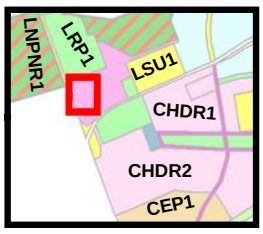
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ERM




Legend

- Building Validation Sample
- Building Not Sampled
- Building Sampled
- Scraped Area




Notes:
F59, F56, F55 and F76: No samples taken - slab present

| | | |
|---|---|---|
| Client: | Department of Defence | |
| Project: | Ingleburn Defence Site Stage 3 Remediation Validation Report | |
| Drawing | 0113181s_VALR_G010_R0.mxd | |
| Date: | 22/06/2011 | Drawing Size: A4 |
| Drawn By: | NS | Reviewed By: HC |
| Projection: | GDA 1994 MGA Zone 56 | |
| Scale: | Refer to scale bar | |

N

0 5 10 15m

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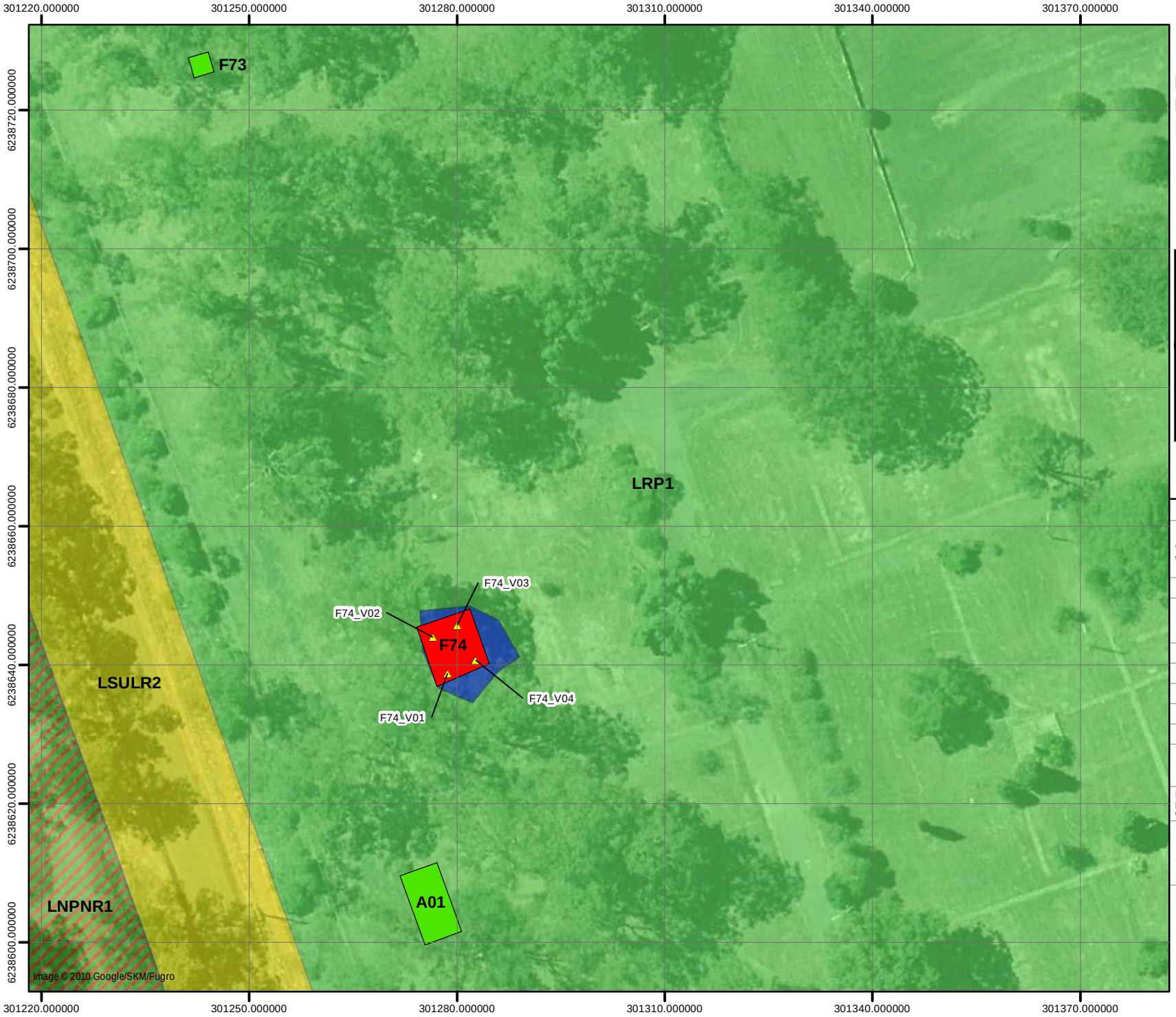
**Figure 9**

**Location of Demolished Building Footprints and Validation Samples in LRDC1 - F59, F19, F21, F22, F56, F55, F76, F75, A02, F20, F23, F61, F10 and F9**

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ERM




Legend

- Building Validation Sample
- Building Not Sampled
- Building Sampled
- Scraped Area

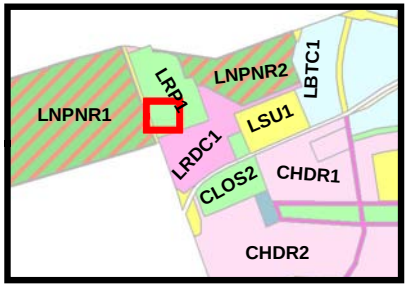



**Figure 10**

**Location of Demolished Building Footprints and Validation Samples- A01, F73 and F74, within subsite LRP1**

| | | |
|---|---|---|
| Client: | Department of Defence | |
| Project: | Ingleburn Defence Site<br>Stage 3 Remediation<br>Validation Report | |
| Drawing No: | 0113181s_VALR_G011_R0.mxd | |
| Date: | 6/21/2011 | Drawing Size: A4 |
| Drawn By: | NS | Reviewed By: HC |
| Projection: | GDA 1994 MGA Zone 56 | |
| Scale: | Refer to scale bar | |

N

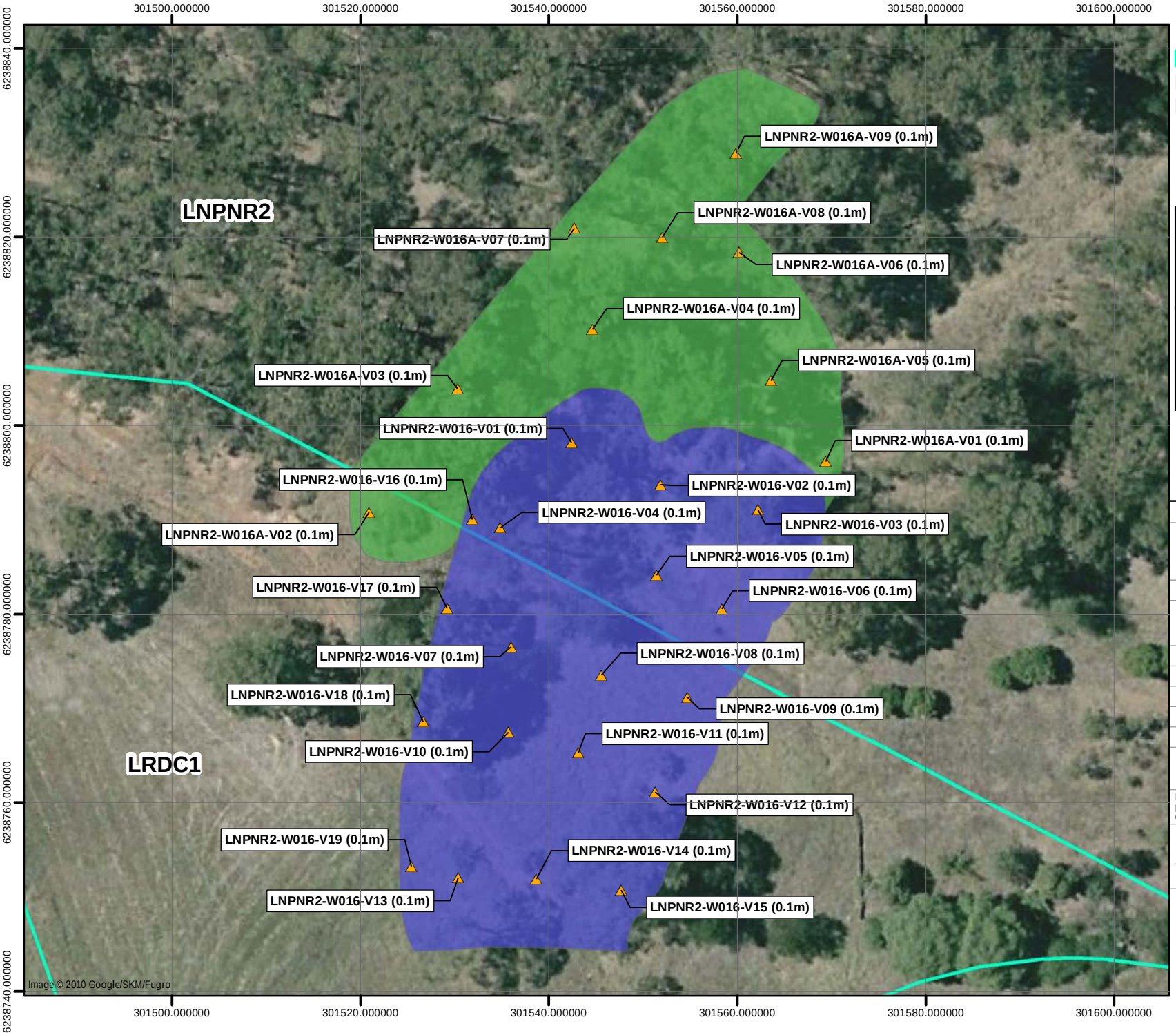
0 5 10 15m

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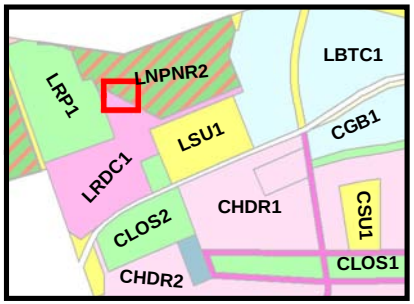
Adelaide, Brisbane, Canberra, Hunter Valley, Melbourne, Perth,Port Macquarie, Sydney

ERM




Legend

- Sub-site
- Excavated Area
- Additional Scrape Conducted during Febuary 2011




Notes:
Sample depths (in metres below ground surface) have been provided beside each sample location.

**Figure 33**

**LNPNR2_W016 (Creekline Excavation) Fly-Tipped Waste Validation**

| | | |
|---|---|---|
| Client: | Department of Defence | |
| Project: | Ingleburn Defence Site Stage 3 Remediation Validation Report | |
| Drawing No: | 0113181s_VALR_G030_R0.mxd | |
| Date: | 24/06/2011 | Drawing Size: A4 |
| Drawn By: | NS | Reviewed By: HC |
| Projection: | GDA 1994 MGA Zone 56 | |
| Scale: | Refer to scale bar | |

N

0 5 10 15m

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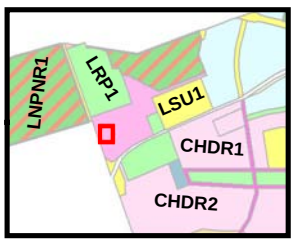
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Legend

- Validation Sample (Pit Wall)
- Validation Sample (Pit Base)
- Block F Interceptor Pits




Notes:
Sample Depths (in metres below ground level) have been provided beside each sample location.

| | |
|---|---|
| Client: | Department of Defence |
| Project: | Ingleburn Defence Site Stage 3 Remediation Validation Report |
| Drawing | 0113181s_VALR_G038_R0.mxd |
| Date: | 21/06/2011 Drawing Size: A4 |
| Drawn By: | NS Reviewed By: HC |
| Projection: | GDA 1994 MGA Zone 56 |
| Scale: | Refer to scale bar |

N

0 2.5 5 7.5m

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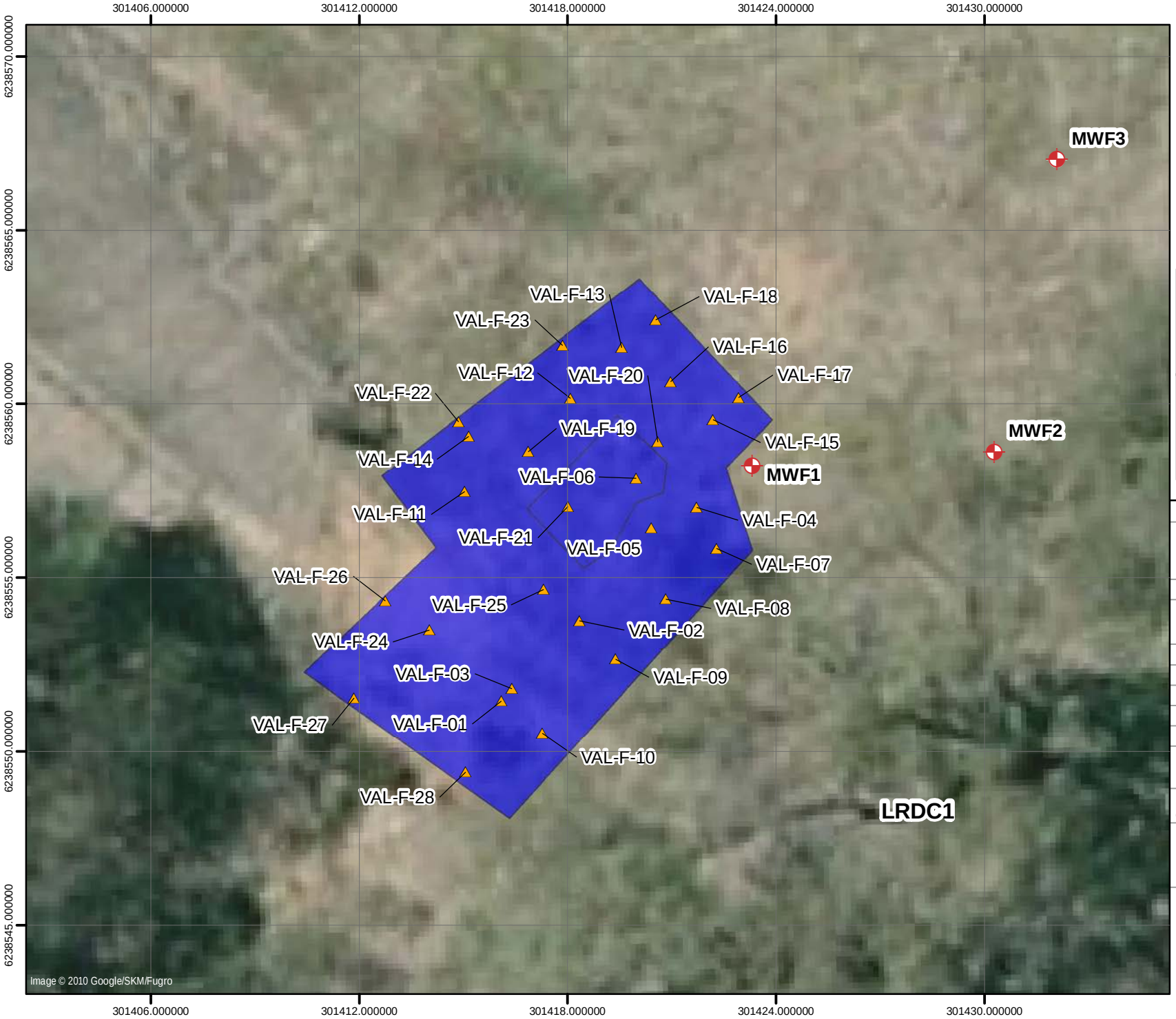
**Figure 41**

**Block F Interceptor Pits Excavation and Validation - LRDC1**

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Legend

- Sample Locations
- Block F Monitoring Wells
- Excavation Extent

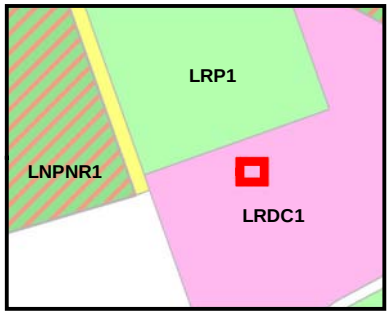



**Figure 44**

**Location of Validation Samples - Block F UST (subsite LRDC1)**

| | | |
|---|---|---|
| Client: | Department of Defence | |
| Project: | Ingleburn Defence Site<br>Stage 3 Remediation<br>Validation Report | |
| Drawing No: | 0113181s_VALR_G041_R0.mxd | |
| Date: | 22/06/2011 | Drawing Size: A4 |
| Drawn By: | NS | Reviewed By: HC |
| Projection: | GDA 1994 MGA Zone 56 | |
| Scale: | Refer to scale bar | |

N

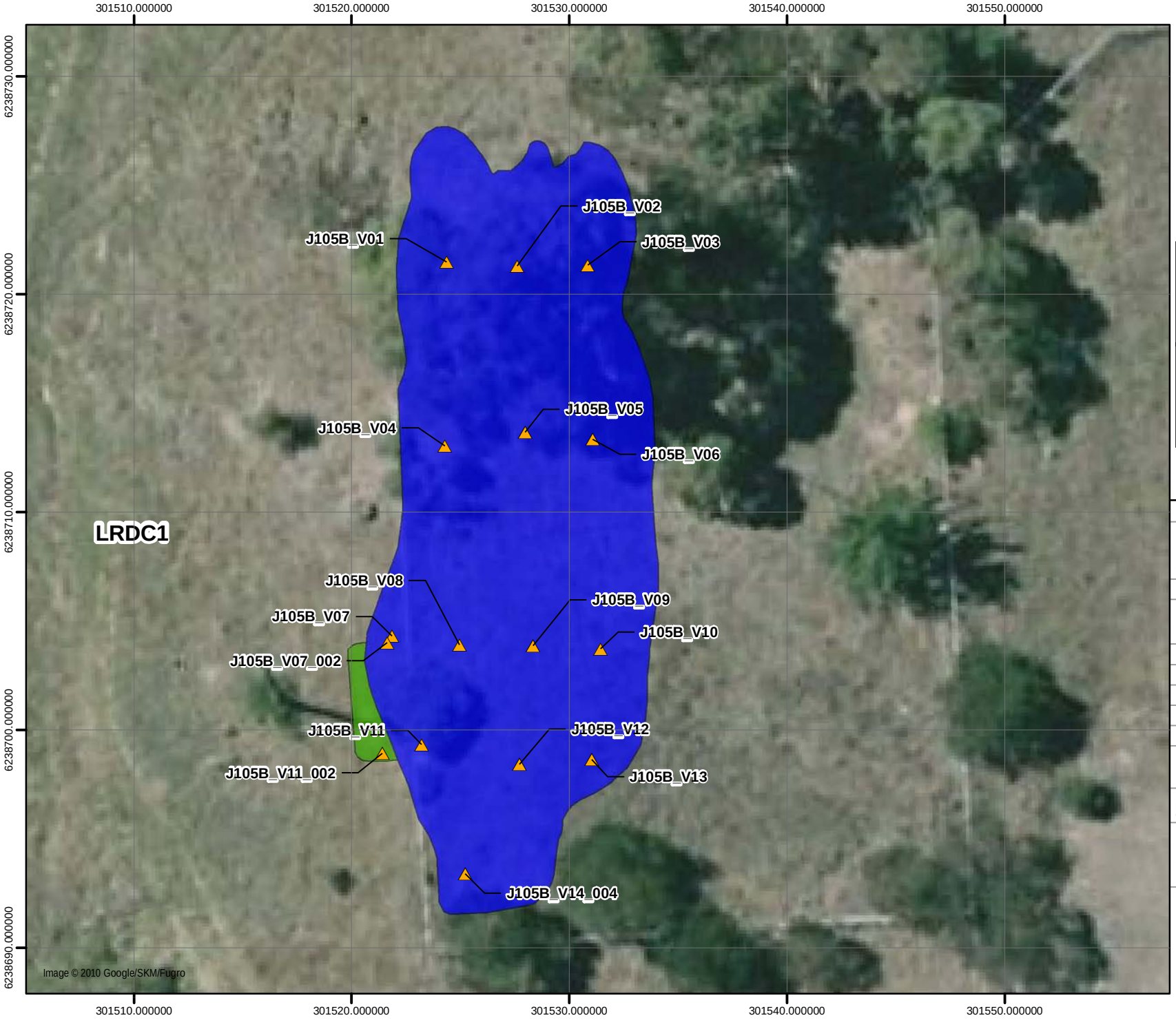
0 1 2 3m

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Legend

- Validation Sample
- Scraped Area
- Additional Scraped area (11/03/2011)

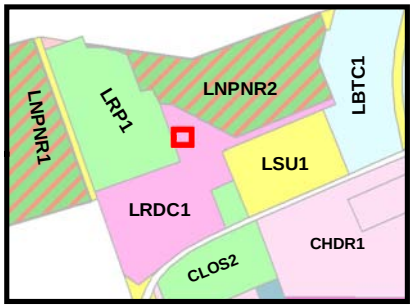



**Figure 62**

**Location of Hotspot J105B Remediation Extent and Validation Sampling in LRDC1**

| | | |
|---|---|---|
| Client: | Department of Defence | |
| Project: | Ingleburn Defence Site<br>Stage 3 Remediation<br>Validation Report | |
| Drawing No: | 0113181s_VALR_G057_R0.mxd | |
| Date: | 05/05/2011 | Drawing Size: A4 |
| Drawn By: | NS | Reviewed By: HC |
| Projection: | GDA 1994 MGA Zone 56 | |
| Scale: | Refer to scale bar | |

N

0 2.5 5 7.5m

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## B6. JBS&G 2021 Sample Locations




**Legend**

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)

**Site Features**

- ACM Area
- ACM Pipe
- Reported Water Main Locations (GHD)
- Hydrant
- Telstra Pit

**Sample Locations**

- ACM
- Monitoring Well
- Test Pit, Asbestos
- Test Pit, Asbestos & PFAS
- Test Pit, Investigation
- Test Pit, PFAS

JBS&G

Job No: 57485

Client: Landcom

| Version: R02 Rev A | Date: 25-Jun-2021 |
|---|---|
| Drawn By: JA | Checked By: MD |

Scale 1:2,250

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 56

**Lot 5**

**Campbelltown Road, Edmonson Park, NSW**

**SAMPLE LOCATIONS**

**FIGURE 4**

File Name: N:\Projects\Landcom\57485 Ed Park Precinct 3\GIS\Maps\R02 Rev A\57485_04_SampleLocaitons.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 19/05/2021)

**Table A: Historical Soil Analytical Results**
Project Number: 63325
Project Name: Edmondson Park

| | | | Metals & Metalloids | | | | | | | | BTEX | | | | | TPH | | | | | Asbestos | Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc | Benzene | Ethylbenzene | m- & p- xylenes | o-xylenes | Toluene | C6-C9 Fraction | C10-C14 Fraction | C15-C28 Fraction | C29-C36 Fraction | C10-C36 Fraction (Total) | Asbestos ID in Soil | Acenaphthene | Acenaphthylene | Anthracene | Indeno(1,2,4-c,d)pyrene | Benzo(a)amthracene | Benzo(a)pyrene | Benzo(b)fluoranthene | Benzo(g,h,i)perylene | Benzo(b,k)fluoranthene | Benzo(k)fluoranthene | Dibenz(a,h)anthracene | Chrysene | Fluoranthrene | Fluorene | Naphthalene | Phenanthrene | Pyrene | PAHs (Total) |
| | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | | | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | | | 1 | 0.1 | 1 | 2 | 2 | 0.05 | 1 | 5 | | | | | | 2 | 50 | 100 | 100 | | | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | |
| NEPC 2013 EIL, Site Specific | | | 100 | | 520 | 220 | 1100 | | 240 | 570 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | | | 300 | 90 | 300 | 17000 | 600 | 80 | 1200 | 30000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 300 |
| NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NL | | | |
| 1-2m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NL | | | |
| 2-4m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NL | | | |
| >4m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NL | | | |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | | | 65 | 125 | | | 105 | | | | | | | | | | | 0.7 | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Sample Location** | **Sample Depth** | **Sample Date** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **K1A** | 0.05 | 5/03/2007 | 9 | 0.1 | 13 | 15 | 20 | 0.05 | 3 | 24 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K3B** | 0.1 | 5/03/2007 | 5 | <0.1 | 8 | 7 | 11 | <0.05 | 22 | 25 | - | - | - | - | - | - | <50 | <100 | <100 | - | NAD | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <1 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **K4A** | 0.05 | 5/03/2007 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K5A** | 0.05 | 5/03/2007 | 2 | <0.1 | 13 | 118 | 20 | <0.05 | 22 | 54 | - | - | - | - | - | - | - | - | - | - | **Chrysotile Detected** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K6B** | 0.1 | 6/03/2007 | 7 | 0.2 | 23 | 38 | 87 | 0.17 | 24 | 340 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K7A** | 0.05 | 6/03/2007 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <1 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **K10A** | 0.01 | 5/03/2007 | 3 | 0.2 | 32 | 22 | 44 | 0.07 | 5 | 60 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **DUPC/K10A** | - | 5/03/2007 | 2 | 0.2 | 29 | 18 | 35 | 0.07 | 4 | 52 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K12B** | 0.1 | 5/03/2007 | 6 | 0.1 | 11 | 9 | 22 | <0.05 | 3 | 27 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K14A** | 0.05 | 5/03/2007 | 7 | 0.2 | 13 | 14 | 37 | 0.07 | 6 | 53 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K15A** | 0.1 | 5/03/2007 | 6 | 0.1 | 10 | 13 | 26 | 0.07 | 6 | 43 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K17A** | 0.1 | 5/03/2007 | 4 | 0.3 | 16 | 30 | 93 | 0.05 | 12 | 110 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K17C** | 0.4 | 5/03/2007 | 11 | <0.1 | 16 | 19 | 10 | <0.05 | 4 | 12 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K22B** | 0.1 | 5/03/2007 | 6 | 0.1 | 15 | 18 | 23 | <0.05 | 4 | 59 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K24B** | 0.1 | 5/03/2007 | 3 | <0.1 | 5 | 6 | 6 | <0.05 | 2 | 9 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K25A** | 0.1 | 5/03/2007 | 5 | 0.2 | 5 | 15 | 20 | 0.05 | 5 | 42 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K27A** | 0.1 | 5/03/2007 | 37 | 0.2 | 10 | 13 | 20 | 0.05 | 11 | 38 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **K27C** | 0.7 | 6/03/2007 | 21 | <0.1 | 5 | 18 | 12 | <0.05 | 11 | 33 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J1B** | - | 1/03/2007 | 3 | <0.1 | 11 | 2 | 7 | <0.05 | 3 | 10 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J3A** | - | 1/03/2007 | 3 | 0.4 | 8 | 21 | 49 | 0.06 | 10 | 68 | - | - | - | - | - | - | - | - | - | - | NAD | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <1 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **J5B** | - | 1/03/2007 | 2 | <0.1 | 8 | 4 | 8 | <0.05 | 2 | 9 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J8A** | - | 1/03/2007 | 5 | 0.3 | 10 | 28 | 46 | 0.05 | 17 | 41 | - | - | - | - | - | - | - | - | - | - | NAD | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <1 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1 |
| **J9B** | - | 1/03/2007 | 3 | <0.1 | 7 | 2 | 7 | <0.05 | 2 | 6 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J18B** | 0.1 | 2/03/2007 | 2 | <0.1 | 6 | 4 | 13 | <0.05 | 2 | 41 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J20A** | 0.05 | 2/03/2007 | 6 | 0.8 | 15 | 29 | 110 | 0.17 | 11 | 99 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **DUPA/J20A** | 0.05 | 2/03/2007 | 6 | 0.8 | 15 | 27 | 110 | 0.12 | 12 | 96 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J28A** | 0.5 | 2/03/2007 | 4 | 0.1 | 9 | 14 | 39 | 0.08 | 9 | 35 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J30B** | 0.1 | 2/03/2007 | 6 | <0.1 | 13 | 12 | 11 | <0.05 | 3 | 21 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J32A** | 0.05 | 2/03/2007 | <1 | 0.1 | 3 | 22 | 15 | 0.22 | 6 | 47 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J34B** | 0.1 | 2/03/2007 | 4 | <0.1 | 6 | 16 | 29 | 0.06 | 3 | 28 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J36A** | 0.05 | 2/03/2007 | 7 | 0.1 | 12 | 14 | 36 | 0.1 | 7 | 56 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J37A** | 0.05 | 2/03/2007 | 2 | 0.2 | 4 | 29 | 28 | 0.1 | 14 | 49 | - | - | - | - | - | - | - | - | - | - | NAD | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <1 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **J37C** | ? | 2/03/2007 | 10 | <0.1 | 20 | 7 | 13 | <0.05 | 2 | 10 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J38B** | 0.1 | 2/03/2007 | 4 | 0.2 | 13 | 23 | 23 | 0.26 | 11 | 42 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J70A** | 0.05 | 5/03/2007 | 5 | <0.1 | 19 | 16 | 19 | <0.05 | 5 | 41 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **DUPA/J70A** | - | 3/05/2007 | 7 | 0.4 | 13 | 17 | 26 | <0.05 | 6 | 73 | - | - | - | - | - | - | - | - | - | - | **Chrisotile, Crocilodite detected** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J72B** | 0.1 | 5/03/2007 | 7 | <0.1 | 8 | 22 | 11 | <0.05 | 3 | 23 | - | - | - | - | - | - | - | - | - | - | NAD | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **JTF1A** | 0.05 | 20/04/2007 | 5 | 3.1 | 16 | 180 | 79 | 0.05 | 10 | 4460 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **JTF2A** | 0.05 | 20/04/2007 | 6 | 0.1 | 11 | 36 | 26 | <.25 | 8 | 1140 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J19A** | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J20A** | | 2/3/07 - 2/4/08 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <50 | <100 | 100 | 100 | - | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <1 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **J28A** | | 2/3/07 - 2/4/08 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <50 | <100 | <100 | - | - | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <1 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **J30B** | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J33A** | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <1 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **J35A** | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J36A** | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <1 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **J70A** | | 5/3/07 - 3/4/08 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <50 | <100 | <100 | - | - | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <1 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **J72B** | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **J78A** | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF01** | 0.2-0.3 | 24/10/2003 | 8 | <1 | 16 | 11 | 9 | <0.1 | 7 | 23 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF01** | 0.7-0.8 | 24/10/2003 | 10 | <1 | 15 | 19 | 8 | <0.1 | 5 | 30 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF02** | 0.2-0.3 | 24/10/2003 | 7 | <1 | 11 | 5 | 10 | <0.1 | 2 | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF02** | 0.4-0.5 | 24/10/2003 | 9 | <1 | 17 | 10 | 9 | <0.1 | 3 | 24 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF03** | 0.2-0.3 | 24/10/2003 | 9 | <1 | 21 | 11 | 10 | <0.1 | 7 | 25 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF03** | 0.4-0.5 | 24/10/2003 | 10 | <1 | 17 | 8 | 8 | <0.1 | 2 | 18 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF04** | 0.2-0.3 | 24/10/2003 | 6 | <1 | 11 | 2 | 10 | <0.1 | <1 | 5 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF04** | 0.4-0.5 | 24/10/2003 | 8 | <1 | 16 | 8 | 8 | <0.1 | 2 | 19 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF05** | 0.1-0.2 | 24/10/2003 | 3 | <1 | 8 | 1 | 12 | <0.1 | 2 | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF05** | 0.4-0.5 | 24/10/2003 | 11 | <1 | 18 | 6 | 10 | <0.1 | 2 | 18 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF06** | 0.2-0.3 | 23/10/2003 | 8 | <1 | 18 | 3 | 18 | <0.1 | 4 | 11 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF06** | 0.3-0.4 | 23/10/2003 | 6 | <1 | 17 | 8 | 8 | <0.1 | 4 | 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF07** | 0.2-0.3 | 24/10/2003 | 2 | <1 | 6 | 5 | 13 | <0.1 | 2 | 10 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Table A: Historical Soil Analytical Results**
Project Number: 63325
Project Name: Edmondson Park

| | Metals & Metalloids | | | | | | | | BTEX | | | | | TPH | | | | | Asbestos | Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc | Benzene | Ethylbenzene | m- & p- xylenes | o-xylenes | Toluene | C6-C9 Fraction | C10-C14 Fraction | C15-C28 Fraction | C29-C36 Fraction | C10-C36 Fraction (Total) | Asbestos ID in Soil | Acenaphthene | Acenaphthylene | Anthracene | Indeno(1,2,4-c,d)pyrene | Benzo(a)amthracene | Benzo(a)pyrene | Benzo(b)fluoranthene | Benzo(g,h,i)perylene | Benzo(b,k)fluoranthene | Benzo(k)fluoranthene | Dibenz(a,h)anthracene | Chrysene | Fluoranthrene | Fluorene | Naphthalene | Phenanthrene | Pyrene | PAHs (Total) |
| | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | | | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | 1 | 0.1 | 1 | 2 | 2 | 0.05 | 1 | 5 | | | | | | 2 | 50 | 100 | 100 | | | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | |
| NEPC 2013 EIL, Site Specific | 100 | | 520 | 220 | 1100 | | 240 | 570 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | 300 | 90 | 300 | 17000 | 600 | 80 | 1200 | 30000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 300 |
| NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NL | | | |
| 1-2m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NL | | | |
| 2-4m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NL | | | |
| >4m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NL | | | |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | 65 | 125 | | | 105 | | | | | | | | | | | 0.7 | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Sample Location** | **Sample Depth** | **Sample Date** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **POLF07** | 0.2-0.3 | 24/10/2003 | 10 | <1 | 21 | 10 | 12 | <0.1 | 4 | 22 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF08** | 0.3-0.4 | 23/10/2003 | 4 | <1 | 7 | 11 | 13 | <0.1 | 10 | 15 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF08** | 0.5-0.6 | 23/10/2003 | 9 | <1 | 21 | 10 | 10 | <0.1 | 5 | 17 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF09** | 0.1-0.2 | 23/10/2003 | 3 | <1 | 10 | 9 | 18 | <0.1 | 6 | 27 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF09** | 0.5-0.6 | 23/10/2003 | 9 | <1 | 19 | 10 | 10 | <0.1 | 5 | 20 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF10** | 0.3-0.4 | 23/10/2003 | 5 | <1 | 11 | 32 | 39 | <0.1 | 22 | 50 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **POLF10** | 0.6-0.7 | 23/10/2003 | 9 | <1 | 21 | 10 | 11 | <0.1 | 3 | 22 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF11** | 0.2-0.3 | 23/10/2003 | 6 | <1 | 9 | 2 | 8 | <0.1 | <1 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF11** | 0.5-0.6 | 23/10/2003 | 8 | <1 | 19 | 9 | 8 | <0.1 | 4 | 18 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF12** | 0.0-0.1 | 23/10/2003 | 10 | <1 | 21 | 7 | 14 | <0.1 | 3 | 17 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF12** | 0.5-0.6 | 23/10/2003 | 14 | <1 | 14 | 12 | 9 | <0.1 | 2 | 12 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF13** | 0.2-0.3 | 23/10/2003 | 8 | <1 | 24 | 5 | 16 | <0.1 | 4 | 18 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF13** | 0.4-0.5 | 23/10/2003 | 9 | <1 | 22 | 6 | 9 | <0.1 | 3 | 11 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF14** | 0.2-0.3 | 23/10/2003 | 3 | <1 | 11 | <1 | 7 | <0.1 | 1 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF14** | 0.4-0.5 | 23/10/2003 | 8 | <1 | 22 | 8 | 10 | <0.1 | 5 | 20 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF15** | 0.1-0.2 | 24/10/2003 | 10 | <1 | 11 | 9 | 9 | <0.1 | 1 | 20 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **POLF15** | 0.4-0.5 | 24/10/2003 | 12 | <1 | 11 | 8 | 10 | <0.1 | <1 | 14 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF16** | 0.3-0.4 | 23/10/2003 | 4 | <1 | 11 | 1 | 7 | <0.1 | 1 | 3 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF16** | 0.5-0.6 | 23/10/2003 | 7 | <1 | 18 | 7 | 9 | <0.1 | 2 | 13 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF16** | - | 23/10/2003 | 7 | <1 | 15 | 1 | 11 | <0.1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF16** | - | 23/10/2003 | 3 | <1 | 9 | 3 | 6 | <0.1 | 4 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF17** | 0.2-0.3 | 24/10/2003 | 8 | <1 | 11 | 6 | 11 | <0.1 | 4 | 12 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF17** | 0.4-0.5 | 24/10/2003 | 7 | <1 | 14 | 11 | 9 | <0.1 | 5 | 25 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF17** | - | 24/10/2003 | 11 | <1 | 15 | 7 | 15 | <0.1 | 2 | 14 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF17** | - | 24/10/2003 | 6 | <1 | 12 | 8 | 13 | <0.1 | 5 | 13 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF18** | 0.2-0.3 | 24/10/2003 | 6 | <1 | 15 | 8 | 34 | <0.1 | 2 | 50 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF18** | 0.4-0.5 | 24/10/2003 | 12 | <1 | 21 | 6 | 13 | <0.1 | 3 | 13 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF19** | 0.2-0.3 | 24/10/2003 | 4 | <1 | 9 | 3 | 8 | <0.1 | 2 | 6 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **POLF19** | 0.4-0.5 | 24/10/2003 | 13 | <1 | 23 | 7 | 12 | <0.1 | 4 | 14 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF20** | 0.4-0.5 | 24/10/2003 | 9 | <1 | 15 | 6 | 10 | <0.1 | <1 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF21** | 0.1-0.2 | 24/10/2003 | 5 | <1 | 11 | 6 | 23 | <0.1 | 2 | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF21** | 0.4-0.5 | 24/10/2003 | 9 | <1 | 15 | 8 | 9 | <0.1 | <1 | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF22** | 0.1-0.2 | 24/10/2003 | 4 | <1 | 10 | 5 | 12 | <0.1 | 2 | 10 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF22** | 0.3-0.4 | 24/10/2003 | 7 | <1 | 17 | 6 | 10 | <0.1 | 3 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF23** | 0-0.1 | 24/10/2003 | 2 | <1 | 4 | 2 | 8 | <0.1 | <1 | 6 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF23** | 0.3-0.4 | 24/10/2003 | 8 | <1 | 20 | 6 | 10 | <0.1 | 4 | 10 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF24** | 0.1-0.2 | 24/10/2003 | 5 | <1 | 16 | 3 | 10 | <0.1 | <1 | 5 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **POLF24** | 0.5-0.6 | 24/10/2003 | 8 | <1 | 15 | 8 | 11 | <0.1 | <1 | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF24** | | 24/10/2003 | 6 | <1 | 18 | 4 | 13 | <0.1 | 3 | 6 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF24** | | 24/10/2003 | 6 | <1 | 18 | 4 | 15 | <0.1 | 3 | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF25** | 0.1-0.2 | 24/10/2003 | 6 | <1 | 17 | 8 | 19 | <0.1 | 6 | 20 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF25** | 0.5-0.6 | 24/10/2003 | 4 | <1 | 11 | 9 | 8 | <0.1 | <1 | 6 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF26** | 0.1-0.2 | 24/10/2003 | 3 | <1 | 9 | 2 | 10 | <0.1 | <1 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF26** | 0.3-0.4 | 24/10/2003 | 7 | <1 | 22 | 7 | 9 | <0.1 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF27** | 0.1-0.2 | 24/10/2003 | 6 | <1 | 11 | 10 | 30 | <0.1 | 3 | 31 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF27** | 0.3-0.4 | 24/10/2003 | 8 | <1 | 22 | 7 | 13 | <0.1 | 2 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF28** | 0.1-0.2 | 24/10/2003 | 6 | <1 | 19 | 4 | 15 | <0.1 | 2 | 6 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <50 | <100 | <100 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **POLF28** | 0.3-0.4 | 24/10/2003 | 10 | <1 | 27 | 7 | 14 | <0.1 | 6 | 10 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Table A: Historical Soil Analytical Results**
Project Number: 63325
Project Name: Edmondson Park

| | | | Organochlorine Pesticides | | | | | | | | | | | | | | | | | | | | | | | Organophosphate Pesticides | | | | | | | | | | | | | | | | | | |

**Table A: Historical Soil Analytical Results**
Project Number: 63325
Project Name: Edmondson Park

| | | | Organochlorine Pesticides | | | | | | | | | | | | | | | | | | | | | | | | Organophosphate Pesticides | | | | | | | | | | | | | | | | | | |

**Table B: Historical Soil Analytical Results**
Project Number: 63325
Project Name: Edmondson Park

| | | | | | Metals & Metalloids | | | | | | | | TPH | | | | BTEX | | | | Asbestos | Organochlorine Pesticides | | | | | | | | | | | | | | | | | | | | | Asbestos | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc | C6-C9 Fraction | C10-C14 Fraction | C15-C28 Fraction | C29-C36 Fraction | C10-C36 Fraction (Total) | Benzene | Ethyl Benzene | Total Xylene | Toluene | Asbestos | a-BHC | Aldrin | b + g-BHC | cis-Chlordane | trans-Chlordane | DDD | DDE | DDT | DDT+DDE+DDD | Aldrin + Dieldrin | Dieldrin | Endosulfan 1 | Endosulfan 2 | Endosulfan sulphate | Endrin | Endrin aldehyde | Endrin ketone | HCB | Heptachlor | Heptachlor Epoxide | Methoxychlor | Asbestos Containing Material [ACM] [%w/w] | Fibrous Asbestos and Asbestos Fines [FA+AF] %W/W | Asbestos Containing Material [ACM] Mass | Asbestos Fines (mass) | Fibrous Asbestos (mass) | Fibrous Asbestos and Asbestos Fines [FA+AF] Mass | Sample weight (dry - for ACM) | Asbestos Detected | Asbestos Type | Total Asbestos |
| | | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | %w/w | %w/w | g | g | g | g | g | - | - | g |
| EQL | | | | | 1 | 1 | 1 | 1 | 1 | 0.1 | 1 | 1 | 2 | 50 | 100 | 100 | | 0.20 | 0.20 | 0.20 | 0.20 | | 0.50 | 0.05 | 0.10 | 0.05 | 0.05 | 0.05 | 0.05 | 0.20 | | | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.20 | 0.001 | 0.001 | | | | | | | |
| NEPC 2013 EIL, Site Specific | | | | | 100 | | 520 | 220 | 1100 | | 240 | 570 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | | | | | 300 | 90 | 300 | 17000 | 600 | 80 | 1200 | 30000 | | | | | | | | | | | | | | | | | | 400 | 10 | | | | | 20 | | | | 10 | | 400 | | | | | | | | |
| NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | | | | | NL | NL | | NL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-2m | | | | | | | | | | | | | | | | | | NL | NL | | NL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-4m | | | | | | | | | | | | | | | | | | NL | NL | | NL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| >4m | | | | | | | | | | | | | | | | | | NL | NL | | NL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | | | | | | | | | | 65 | 125 | | 105 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Sample ID** | **Sample Depth** | **Sample Date** | **SDG** | **Purpose** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **F19_V01** | 0.1 | 14/07/2010 | 49271 | Validation Building | 7 | <0.1 | 17 | 7 | 21 | 0.07 | 6 | 27 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F19_V02** | 0.1 | 14/07/2010 | 49271 | Validation Building | 9 | <0.1 | 26 | 8 | 23 | 0.12 | 4 | 20 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F19_V03** | 0.1 | 14/07/2010 | 49271 | Validation Building | 8 | <0.1 | 27 | 6 | 22 | 0.08 | 5 | 28 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | 0.06 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F19_V04** | 0.1 | 14/07/2010 | 49271 | Validation Building | 6 | <0.1 | 16 | 4 | 15 | 0.09 | 3 | 14 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F19_V05** | 0.1 | 14/07/2010 | 49271 | Validation Building | 8 | <0.1 | 17 | 7 | 19 | 0.1 | 3 | 21 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F19_V06** | 0.1 | 14/07/2010 | 49271 | Validation Building | 8 | <0.1 | 28 | 7 | 18 | 0.07 | 6 | 17 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | 0.28 | <0.05 | 0.08 | <0.2 | 0.21 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F19_V07** | 0.1 | 14/07/2010 | 49271 | Validation Building | 6 | 0.6 | 23 | 36 | 333 | 0.17 | 7 | 194 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F19_V08** | 0.1 | 14/07/2010 | 49271 | Validation Building | 9 | <0.1 | 23 | 6 | 21 | 0.07 | 3 | 10 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F21_V01** | 0.1 | 16/07/2010 | 49314 | Validation Building | 7 | <0.1 | 32 | 5 | 49 | 0.08 | 3 | 25 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F21_V02** | 0.1 | 16/07/2010 | 49314 | Validation Building | 5 | <0.1 | 23 | 4 | 13 | 0.08 | 3 | 10 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F21_V03** | 0.1 | 16/07/2010 | 49314 | Validation Building | 6 | 0.6 | 22 | 19 | 138 | 0.11 | 6 | 91 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | 0.35 | <0.05 | 0.12 | <0.2 | 0.35 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F21_V04** | 0.1 | 16/07/2010 | 49314 | Validation Building | 7 | 0.2 | 25 | 9 | 37 | 0.13 | 5 | 93 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.16 | <0.2 | 0.49 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F21_V05** | 0.1 | 16/07/2010 | 49314 | Validation Building | 4 | 0.2 | 15 | 22 | 83 | 0.18 | 6 | 60 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.45 | <0.2 | 1.18 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F21_V06** | 0.1 | 16/07/2010 | 49314 | Validation Building | 7 | <0.1 | 27 | 4 | 19 | 0.07 | 3 | 21 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | 0.09 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F21_V07** | 0.1 | 16/07/2010 | 49314 | Validation Building | 6 | 0.2 | 18 | 7 | 40 | 0.06 | 3 | 32 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | 0.08 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F21_V08** | 0.1 | 16/07/2010 | 49314 | Validation Building | 5 | <0.1 | 16 | 8 | 28 | 0.08 | 3 | 22 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | 0.08 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F22_V01** | 0.1 | 16/07/2010 | 49314 | Validation Building | 3 | <0.1 | 15 | 4 | 11 | 0.07 | 2 | 9 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F22_V02** | 0.1 | 16/07/2010 | 49314 | Validation Building | 3 | <0.1 | 11 | 5 | 17 | 0.12 | 2 | 15 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F22_V03** | 0.1 | 16/07/2010 | 49314 | Validation Building | 4 | 0.1 | 24 | 8 | 23 | 0.07 | 3 | 24 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F22_V04** | 0.1 | 16/07/2010 | 49314 | Validation Building | 4 | 0.1 | 17 | 7 | 20 | 0.08 | 3 | 24 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F22_V05** | 0.1 | 16/07/2010 | 49314 | Validation Building | 3 | <0.1 | 16 | 3 | 12 | 0.05 | 2 | 6 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F22_V06** | 0.1 | 16/07/2010 | 49314 | Validation Building | 3 | <0.1 | 13 | 5 | 14 | 0.08 | 3 | 11 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F22_V07** | 0.1 | 16/07/2010 | 49314 | Validation Building | 4 | <0.1 | 19 | 4 | 12 | <0.05 | 3 | 8 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **F22_V08** | 0.1 | 16/07/2010 | 49314 | Validation Building | 4 | <0.1 | 20 | 5 | 13 | 0.08 | 3 | 12 | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.3 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | - | - | - | <0.05 | <0.05 | <0.2 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.02 | - | No | - | <0.01 |
| **J105B_V01** | 0.1 | 18/11/2010 | ES1023578 | Validation Hotspot | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <0.005 | <0.005 | <0.01 | <0.01 | <0.01 | <0.02 | 207 | No | - | <0.01 |
| **J105B_V02** | 0.1 | 18/11/2010 | ES1023578 | Validation Hotspot | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <0.004 | <0.004 | <0.01 | <0.01 | <0.01 | <0.02 | 262 | No | - | <0.01 |
| **J105B_V03** | 0.1 | 18/11/2010 | ES1023578 | Validation Hotspot | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <0.005 | <0.005 | <0.01 | <0.01 | <0.01 | <0.02 | 213 | No | - | <0.01 |
| **BLOCK_F_IP1_V06_1.0** | 1 | 18/11/2010 | ES1023578 | Validation Interceptor Pits | - | - | - | - | - | - | - | - | <10 | <50 | <100 | <100 | <250 | <0.2 | <0.5 | <0.5 | <0.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **BLOCK_F_IP1_V07_1.0** | 1 | 18/11/2010 | ES1023578 | Validation Interceptor Pits | - | - | - | - | - | - | - | - | <10 | <50 | <100 | <100 | <250 | <0.2 | <0.5 | <0.5 | <0.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **BLOCK_F_IP1_V08_1.0** | 1 | 18/11/2010 | ES1023578 | Validation Interceptor Pits | - | - | - | - | - | - | - | - | <10 | <50 | <100 | <100 | <250 | <0.2 | <0.5 | <0.5 | <0.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **BLOCK_F_IP1_V09_1.7** | 1.7 | 18/11/2010 | ES1023578 | Validation Interceptor Pits | - | - | - | - | - | - | - | - | <10 | <50 | <100 | <100 | <250 | <0.2 | <0.5 | <0.5 | <0.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Table B: Historical Soil Analytical Results**
Project Number: 63325
Project Name: Edmondson Park

| | | |

**Table A: JBS (2021) Soil Analytical Data**
Project Number: 63325
Project Name: Ed Park Precinct 3

| | | | PFAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Perfluorobutanoic acid (PFBA) | Perfluoropentanoic acid (PFPeA) | Perfluorohexanoic acid (PFHxA) | Perfluoroheptanoic acid (PFHpA) | Perfluorooctanoic acid (PFOA) | Perfluorononanoic acid (PFNA) | Perfluorodecanoic acid (PFDA) | Perfluoroundecanoic acid (PFUnDA) | Perfluorododecanoic acid (PFDoDA) | Perfluorotridecanoic acid (PFTrDA) | Perfluorotetradecanoic acid (PFTeDA) | Perfluorooctane sulfonamide (FOSA) | N-Methyl perfluorooctane sulfonamide (NMeFOSA) | N-Ethyl perfluorooctane sulfonamide (NEtFOSA) | N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE) | N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE) | N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA) | N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | Perfluoropropanesulfonic acid (PFPrS) | Perfluorobutanesulfonic acid (PFBS) | Perfluoropentanesulfonic acid (PFPeS) | Perfluoroheanesulfonic acid (PFHxS) | Perfluoroheptane sulfonic acid (PFHpS) | Perfluorooctanesulfonic acid (PFOS) | Perfluorononanesulfonic acid (PFNS) | Perfluorodecanesulfonic acid (PFDS) | 1H-1H-2H-2H-perfluorohexanesulfonic acid (4:2 FTSA) | 1H-1H-2H-2H-perfluorooctanesulfonic acid (6:2 FTSA) | 1H-1H-2H-2H-perfluorodecanesulfonic acid (8:2 FTSA) | 1H-1H-2H-2H-perfluorododecanesulfonic acid (10:2 FTSA) | Sum of PFHxS and PFOS | Sum of enHealth PFAS (PFHxS + PFOS + PFOA)* | Sum of US EPA PFAS (PFOS + PFOA)* | Sum of PFAS (WA DER List) | Sum of PFAS |
| | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | | | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.01 | 0.01 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.01 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.05 |
| NEPC 2013 EIL, Site Specific | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-2m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-4m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| >4m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | | | 10 | | | | | | | | | | | | | | | | | | 1 | | 1 | | | | | | | | 1 | | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | | | 10 | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| **Sample** | **Lab Report Number** | **Date** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TP05_0-0.1 | 802029 | 9/06/2021 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| TP07_0-0.05 | 802029 | 9/06/2021 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| TP09_0-0.1 | 802029 | 9/06/2021 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| TP10_0.1-0.2 | 802029 | 9/06/2021 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| TP10_0.2-0.3 | 802029 | 9/06/2021 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| TP44_0-0.1 | 802351 | 10/06/2021 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Table A: JBS (2021) Soil Analytical Data**
Project Number: 63325
Project Name: Ed Park Precinct 3

| | | | Ionic Balance | | | Asbestos - Eurofins | | | | | | | | | | | | | | | | | | Asbestos - Envirolab | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CEC | Conductivity (1:5 aqueous extract) | pH (aqueous extract) | Approximate Sample Mass | Asbestos Sample Dimensions | Mass ACM | Mass Asbestos in ACM | Asbestos from ACM in Soil | Mass FA | Mass Asbestos in FA | Mass AF | Mass asbestos in AF | Asbestos from FA & AF in Soil | Mass Asbestos in FA & AF | ACM - Comment | FA Comment | AF - Comment | Organic Fibres - Comment | Respirable Fibres - Comment | Synthetic Fibres - Comment | Asbestos Reported Result | Asbestos ID in Soil | Total Asbestos | Asbestos (ACM >7mm) Estimation | Asbestos in soil (<2mm AF/FA) (%w/w) |
| | | | MEQ/100G | US/CM | pH Units | gm | Comment | gm | gm | % (w/w) | gm | gm | gm | gm | % (w/w) | gm | Comment | Comment | Comment | Comment | Comment | Comment | Comment | g/kg | g/kg | % (w/w) | % (w/w) |
| EQL | | | 0.05 | 10 | 0.1 | | | | | | | | | | | | | | | | | | | 0.1 | 0.01 | 0.001 |
| NEPC 2013 EIL, Site Specific | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-2m | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-4m | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| >4m | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | | | 0.02 | | | | | 0.001 | | | | | | | | | | | 0.02 | 0.001 |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Sample** | **Lab Report Number** | **Date** | | | | | | | | | | | | | | | | | | | | | | | | | |
| TP05_0-0.1 | 802029 | 9/06/2021 | - | - | - | 691 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Nil | Nil | Nil | Nil | Nil | Nil | No asbestos detected at the reporting limit of 0.001% w/w. | - | - | - | - |
| TP07_0-0.05 | 802029 | 9/06/2021 | - | - | - | 428 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Nil | Nil | Nil | Nil | Nil | Nil | No asbestos detected at the reporting limit of 0.001% w/w. | - | - | - | - |
| TP09_0-0.1 | 802029 | 9/06/2021 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| TP10_0.1-0.2 | 802029 | 9/06/2021 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| TP10_0.2-0.3 | 802029 | 9/06/2021 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| TP44_0-0.1 | 802351 | 10/06/2021 | - | - | - | 618 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Nil | Nil | Nil | Organic fibres detected | No respirable fibres detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w. | - | - | - | - |

## Appendix C EPA Records

## Background

A strategy to systematically prioritise, assess and respond to notifications under Section 60 of the ***Contaminated Land Management Act 1997*** (CLM Act) has been developed by the EPA. This strategy acknowledges the EPA's obligations to make information available to the public under ***Government Information (Public Access) Act 2009***.

When a site is notified to the EPA, it may be accompanied by detailed site reports where the owner has been proactive in addressing the contamination and its source. However, often there is minimal information on the nature or extent of the contamination.

After receiving a report, the first step is to confirm that the report does not relate to a pollution incident. The Protection of the Environment Operations Act 1997 (POEO Act) deals with pollution incidents, waste stockpiling or dumping. The EPA also has an incident management process to manage significant incidents (https://www.epa.nsw.gov.au/reporting-and-incidents/incident-management).

In many cases, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any significant risks for the community or environment. Such sites may still need to be cleaned up, but this can be done in conjunction with any subsequent building or redevelopment of the land. These sites do not require intervention under the CLM Act, and are dealt with through the planning and development consent process. In these cases, the EPA informs the local council or other planning authority, so that the information can be recorded and considered at the appropriate time (https://www.epa.nsw.gov.au/your-environment/contaminated-land/managing-contaminated-land/role-of-planning-authorities).

Where indications are that the contamination could cause actual harm to the environment or an unacceptable offsite impact (i.e. the land is 'significantly contaminated'), the EPA would apply the regulatory provisions of the CLM Act to have the responsible polluter and/or landowner investigate and remediate the site. If the reported contamination could present an immediate or long-term threat to human health NSW Health will be consulted. SafeWork NSW and Water NSW can also be consulted if there appear to be occupational health and safety risks or an impact on groundwater quality.

As such, the sites notified to the EPA and presented in the list of contaminated sites notified to the EPA are at various stages of the assessment and remediation process. Understanding the nature of the underlying contamination, its implications and implementing a remediation program where required, can take a considerable period of time. The list provides an indication, in relation to each nominated site, as to the management status of that particular site. Further detailed information may be available from the EPA or the person who notified the site.

The following questions and answers may assist those interested in this issue.

## Frequently asked questions

**Why does my land appear on the list of notified sites?**

Your land may appear on the list because:

- the site owner and/or the polluter has notified the EPA under section 60 of the CLM Act
- the EPA has been notified via other means and is satisfied that the site is or was contaminated.

If a site is on the list, it does not necessarily mean the contamination is significant enough to regulate under the CLM Act.

**Does the list contain all contaminated sites in NSW?**

No. The list only contains contaminated sites that EPA is aware of. If a site is not on the list, it does not necessarily mean the site is not contaminated.

The EPA relies on responsible parties and the public to notify contaminated sites.

**How are notified contaminated sites managed by the EPA?**

There are different ways the EPA can manage notified contaminated sites. Options include:

• regulation under the CLM Act, POEO Act, or both
• notifying the relevant planning authority for management under the planning and development process
• managing the site under the Protection of the Environment Operation (Underground Petroleum Storage Systems) Regulation 2014.

There are specific cases where contamination is managed under a tailored program operated by another agency (for example, the Resources & Geoscience's Legacy Mines Program).

**What should I do if I am a potential buyer of a site that appears on the list?**

You should seek advice from the seller to understand the contamination issue. You may need to seek independent contamination or legal advice.

The information provided in the list is indicative only and a starting point for your own assessment. Land contamination from past site uses is common, mainly in urban environments. If the site is properly remediated or managed, it may not affect the intended future use of the site.

**Who can I contact if I need more information about a site?**

You can contact the Environment Line at any time by calling 131 555 or by emailing info@environment.nsw.gov.au.

## List of NSW Contaminated Sites Notified to the EPA

**Disclaimer**

The EPA has taken all reasonable care to ensure that the information in the list of contaminated sites notified to the EPA (the list) is complete and correct. The EPA does not, however, warrant or represent that the list is free from errors or omissions or that it is exhaustive.

The EPA may, without notice, change any or all of the information in the list at any time.

You should obtain independent advice before you make any decision based on the information in the list.

The list is made available on the understanding that the EPA, its servants and agents, to the extent permitted by law, accept no responsibility for any damage, cost, loss or expense incurred by you as a result of:

1. any information in the list; or
2. any error, omission or misrepresentation in the list; or
3. any malfunction or failure to function of the list;
4. without limiting (2) or (3) above, any delay, failure or error in recording, displaying or updating information.

| Site Status | Explanation |
|---|---|
| Under assessment | The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or *Protection of the Environment Operations Act 1997* . |
| Under Preliminary Investigation Order | The EPA has issued a Preliminary Investigation Order under s10 of the *Contaminated Land Management Act 1997* , to obtain additional information needed to complete the assessment. |
| Regulation under CLM Act not required | The EPA has completed an assessment of the contamination and decided that regulation under the *Contaminated Land Management Act 1997* is not required. |

| | |
|---|---|
| Regulation being finalised | The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the *Contaminated Land Management Act 1997*. A regulatory approach is being finalised. |
| Contamination currently regulated under CLM Act | The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record. |
| Contamination currently regulated under POEO Act | Contamination is currently regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA as the appropriate regulatory authority reasonably suspects that a pollution incident is occurring/ has occurred and that it requires regulation under the POEO Act. The EPA may use environment protection notices, such as clean up notices, to require clean up action to be taken. Such regulatory notices are available on the POEO public register. |
| Contamination being managed via the planning process (EP&A Act) | The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the *Environmental Planning and Assessment Act 1979* (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment. |
| Contamination formerly regulated under the CLM Act | The EPA has determined that the contamination is no longer significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (CLM Act). The contamination was addressed under the CLM Act. |
| Contamination formerly regulated under the POEO Act | The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the *Protection of the Environment Operations Act 1997* (POEO Act). |

| | |
|---|---|
| Contamination was addressed via the planning process (EP&A Act) | The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the *Environmental Planning and Assessment Act 1979* (EP&A Act). |
| Ongoing maintenance required to manage residual contamination (CLM Act) | The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record. |

| Suburb | SiteName | Address | ContaminationActivityType | ManagementClass | Latitude | Longitude |
|---|---|---|---|---|---|---|
| EDEN | Former Caltex Eden Depot | 80-82 Imlay STREET | Service Station | Contamination currently regulated under CLM Act | -37.0570984 | 149.9038538 |
| EDENSOR PARK | Caltex Bonnyrigg Service Station, Edensor Park | 549 Elizabeth DRIVE | Service Station | Regulation under CLM Act not required | -33.88840816 | 150.8822609 |
| EDENSOR PARK | 7-Eleven (former Mobil) Service Station | 615-621 Cowpasture Road, corner Elizabeth DRIVE | Service Station | Regulation under CLM Act not required | -33.88326139 | 150.865591 |
| EDGECLIFF | BP-branded (former Coles Express) Service Station | 73-85A New South Head ROAD | Service Station | Regulation under CLM Act not required | -33.8769602 | 151.2311617 |
| EDGEWORTH | Caltex Service Station | 662 Main ROAD | Service Station | Regulation under CLM Act not required | -32.92566329 | 151.6278888 |
| EDGEWORTH | Caltex-Woolworths Branded Service Station Edgeworth | 738-742 Main ROAD | Service Station | Regulation under CLM Act not required | -32.92455492 | 151.6202897 |
| EMERALD BEACH | Shell Coles Express Woolgoolga Service Station | 1850 Pacific HIGHWAY | Service Station | Regulation under CLM Act not required | -30.16450856 | 153.1826673 |
| EMERTON | 7-Eleven Emerton | 135-137 Popondetta ROAD | Service Station | Regulation under CLM Act not required | -33.74463908 | 150.8102251 |
| EMPIRE BAY | Empire Bay Marina | 16B Sorrento ROAD | Other Industry | Contamination currently regulated under CLM Act | -33.49305196 | 151.3643119 |
| EMU HEIGHTS | 7-Eleven Service Station | 126 Old Bathurst ROAD | Service Station | Regulation under CLM Act not required | -33.74299098 | 150.6547098 |
| EMU HEIGHTS | Woolworths Service Station | 132 Old Bathurst ROAD | Service Station | Regulation under CLM Act not required | -33.7429739 | 150.6559655 |
| EMU PLAINS | Woolworths Service Station | 283 Great Western HIGHWAY | Service Station | Regulation under CLM Act not required | -33.75371349 | 150.6530165 |
| ENGADINE | Former Caltex Service Station | 995 Old Princes HIGHWAY | Service Station | Regulation under CLM Act not required | -34.06413459 | 151.0155734 |
| ENGADINE | BP Service Station | 1234 Princes HIGHWAY | Service Station | Contamination currently regulated under CLM Act | -34.07735416 | 151.01121 |
| ENGADINE | BP Branded Service Station | 963 Old Princes HIGHWAY | Service Station | Contamination currently regulated under CLM Act | -34.06428454 | 151.0167121 |

# Search results

Your search for:Suburb: Edmondson Park

Search Again
Refine Search

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

**Search TIP**

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... more search tips

More information about particular sites may be available from:

- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act.

See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.
This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register.POEO public register

22 August 2022



## Contact us

131 555 (tel:131555)

Online (https://yoursay.epa.nsw.gov.au/epa-website-feedback)

info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)

EPA Office Locations (https://www.epa.nsw.gov.au/about-us/contact-us/locations)

Accessibility (https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/help-index)
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# Search results

Your search for: **General Search** with the following criteria

**Suburb** - Edmondson Park

returned 0 result

Search Again

## For business and industry

## For local government

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info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)

EPA Office Locations (https://www.epa.nsw.gov.au/about-us/contact-us/locations)

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Find us on

Map view | List view

Clear filters | ☑ Only show sites within current map view | Showing 3 of 49 sites

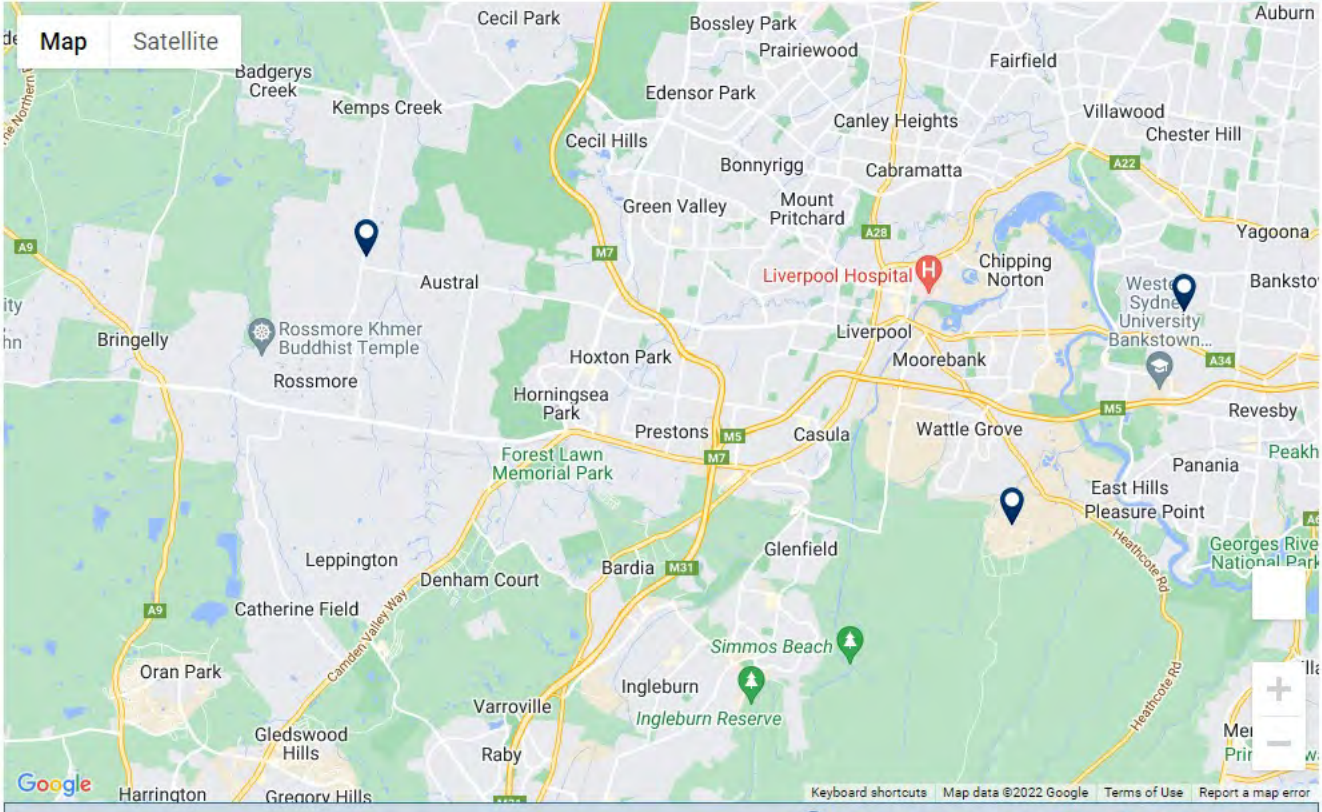
| Organisation | Address | Status |
|---|---|---|
| **filter by organisation** | **filter by address* | ☑ PFAS investigation site |
| Bankstown Airport<br>more information | 3 Avro St, Bankstown NSW 2200 | PFAS investigation site |
| Holsworthy Barracks<br>more information | Macarthur Drive, Holsworthy, 2173 | PFAS investigation site |
| Kemps Creek NSW Rural Fire Service<br>more information | 245 Devonshire Rd, Kemps Creek NSW 2178 | PFAS investigation site |

Map view | List view

No filter set

Showing 3 of 49 sites

Reset map



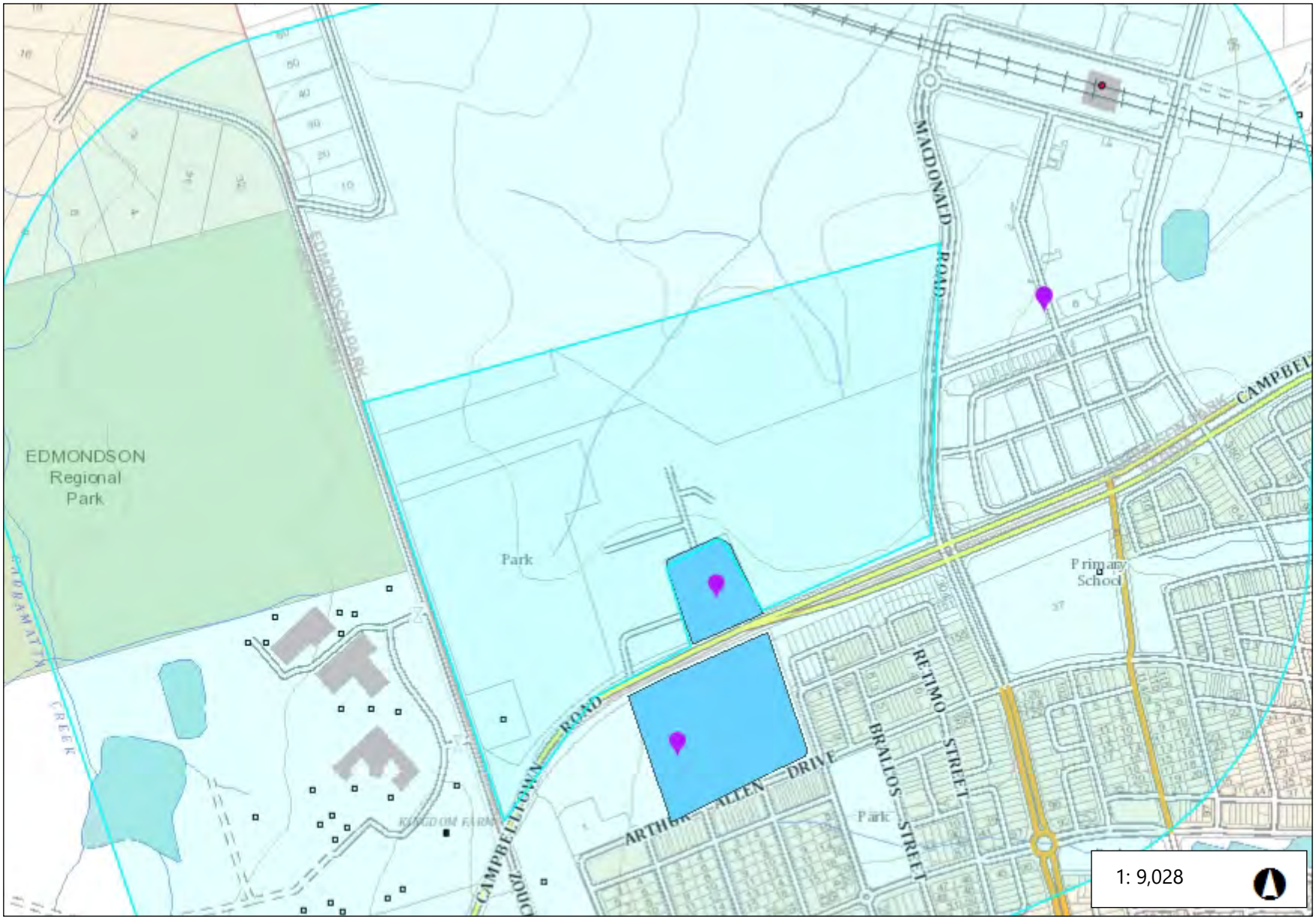

PFAS investigation site

Multiple sites

# Appendix D Australian and NSW Heritage Registers

NSW GOVERNMENT | Heritage NSW

# State Heritage Inventory







## Legend

- World Heritage Areas NSW
- SEPP
- State Heritage Register
- Aboriginal Place
- Local Environmental Plan
  - Cluster (label denotes number)
- Aboriginal Place
  - Cluster (label denotes number)
- State Heritage Register
  - Cluster (label denotes number)
- Interim Heritage Order
  - Cluster (label denotes number)

## Notes

Notes

458.6 0 229.31 458.6 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

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This map is a user generated static output from the Heritage Management System and is for reference only. Information that appears on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

# Search Results

**2 results found.**

| | | |
|---|---|---|
| Ingleburn Army Camp Campbelltown Rd | Ingleburn Village, NSW, Australia | (Registered) Register of the National Estate (Non-statutory archive) |
| Ingleburn Army Camp Campbelltown Rd | Ingleburn Village, NSW, Australia | (Place removed from CHL) Commonwealth Heritage List |

**Report Produced: Mon Aug 22 10:35:50 2022**

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# Place Details

Send Feedback

## Ingleburn Army Camp, Campbelltown Rd, Ingleburn Village, NSW, Australia

| | |
|---|---|
| **Photographs** |  |
| **List** | Register of the National Estate (Non-statutory archive) |
| **Class** | Historic |
| **Legal Status** | Registered (28/10/2003) |
| **Place ID** | 101050 |
| **Place File No** | 1/15/010/0042 |

**Statement of Significance**

The Ingleburn Army Camp, one of Australia's major army camps from 1939-1970s, is of considerable historic significance as the first purpose-built infantry training camp for World War II. It played a central role in the mobilisation of Australia's citizens and in their military training throughout the war and was the assembly point for the first miliary contingent assembled for overseas service in the war.

Ingleburn Army Camp is also significant for its role in the training of personnel for the Korean and Vietnam Wars. The Army Camp was a major centre in Australia for training under the National Service Scheme (1951-1972) and it is also associated with the anti-conscription movement. The Army Camp also played a major role in the training of Army Reserves from 1973 through to the 1990s. (Criterion A.4).

Ingleburn Army Camp is of social significance as a symbol of the service given by generations of soldiers who trained there and as a place where respect for and remembrance of that service has become a continuing and highly valued tradition. It has social value to those who lived, and worked at the army camp. Ingleburn Army Camp has a long association with a State-wide "Army community", and is a place where this sense of community is expressed, celebrated and passed on. It also serves to symbolise to the community the role of the Army within the area. (Criterion G.1).

The Sydney Williams Type Barracks (1939-1946) have a strong historic association with the war effort mounted by Australia for World War II. The huts are able to demonstrate aspects of military life at the camp. The placement of the huts in rows enhances the visual impact of the group. The barracks form a major part of the memories of the site for those who have been accommodated in them (Criteria A.4, B. 2 and G.1).

The Kitchen/Dining Hall Complex, c1955, is historically significant for its association with the expansion of the camp as a training school after the Korean War and following the introduction of National Service. It illustrates the scale of the former Training School operations and the dining needs of large numbers of troops at a permanent camp site. It represents the military practice of developing standardised building responses to needs associated with the support of a large number of army personnel. It is visually prominent due to its location, size and clerestory roof line. It contains moveable items such as crockery, furniture and kitchen appliances which illustrate its role (Criteria A.4, E.1).

The Lecture Hall Building (former Recreation Centre), 1953, is of historical significance for its role as a recreation centre erected specifically for National Service trainees of non-commissioned rank and as an education facility in its use as part of the Second Training Group Headquarters facility. Its provision reflects the self-containment characteristic of military organisations of the period. It is of social significance to National Servicemen as a former recreation facility and social centre and as a meeting place for army personnel. It is an example of architecture developed for military support structures after World War II. This building uses an unusual combination of arch-frame and standard hut construction techniques and is important for demonstrating efficient structural and acoustic design qualities for multi-purpose use (Criteria A.4, B.2, E.1 and G.1).

The Bardia Barracks entrance precinct, comprising entrance gates, Guard House and Cell Block, Chaplain's Office and Post Office, is significant as a landmark for the local community symbolising the important role played by the Army in this area. The area symbolises the entry to army life, an event which was formative in the lives of many thousands of people who served at Ingleburn. The entry gates are

associated with the establishment of military barracks on the site from 1939 and with Bardia Barracks in particular. The brick sentry boxes are symbolic of the military prescence at the site (Criteria A.4 and G.1).

The Guard House and Cell Block are historically significant as part of Bardia Barracks, with the introduction of conscription and in particular, their use during the Vietnam War. It is a representative example of a guard house and cell block. The cells demonstrate aspects of defence force discipline (Criteria A.4 and D.2).

The Mont St Quentin Oval, entry gates and flagpole are of historical significance. The oval served as the original parade ground for WWII troops, and the location from which troops were formally farewelled and welcomed on return from service overseas (Criteria A.4 and G.1).

The Memorials located within the Ingleburn Military Heritage Precinct are historically significant, being associated with former military personnel and the regiments who have occupied the Army Camp. The memorials commissioned by particular regiments or organisations celebrate or commemorate the contribution made by a particular regiment or the military collectively to the war effort. The memorials have become the focus of commemoration and gatherings (Criterion G.1).

(Historic Themes: 7.7 Defending Australia, 9.7.3 Remembering the dead)

The vegetation communities present on the site are important remnants of the vegetation communities once widespread on the Cumberland Plain. This site contains a significant proportion of those communities still present in western Sydney.

The vegetation is comprised primarily of Cumberland Plain Woodlands, Sydney Coastal River-Flat Forest and a gradient between the two. Only 8% of the pre-1750 extent of Cumberland Plain Woodlands and 9% of the pre-1750 extent of Sydney Coastal River-Flat Forest remain. Despite the management history of the site, the vegetation remains as a good example of both communities. This large area of woodland habitat, particularly taken together with vegetation external to the site boundary, contributes significantly to the overall stock of Cumberland Plain Woodlands left to the west of Sydney and contributes to a local and regional bushland corridor with connections to other woodland areas to the north of the site.

Cumberland Plain Woodland is listed as an Endangered Ecological Community under both the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and the NSW Threatened Species Act 1995. Sydney Coastal River Flat Forest is listed as an Endangered Ecological Community under Schedule 1 Part 3 of the NSW legislation.

Some key diagnostic species for Cumberland Plain Woodlands identified on the site include forest red gum (EUCALYPTUS TERETICORNIS), grey box (E. MOLUCCANA), stringybark (E. EUGENIOIDES), native cherry (EXOCARPOS CUPRESSIFORMIS), and the wattles (ACACIA FALCATA, A. IMPLEXA and A. DECURRENS). Sydney Coastal River Flat Forest is represented by EUCALYPTUS TERETICORNIS and CASUARINA GLAUCA. Casuarina is typically associated with saline estuarine situations; its distribution on the Cumberland Plain is therefore unusual and probably related to the presence of saline groundwater.

Three species listed under the NSW Threatened Species Conservation Act 1995, have been recorded within the place; eastern freetail-bat (MORMOPTERUS NORFOLKENSIS), greater broad-nosed bat (SCOTEANAX RUEPPELLI), and the large land snail (MERIDOLUM CORNEOVIRENS).
The regionally significant brown toadlet (PSEUDOPHRYNE BIBRONII), little eaglet (HIERAAETUS MORPHNOIDES), yellow-rumped thornbill (ACANTHIZA CHRYSORRHOA) and crested shrike-tit (FALCUNCULUS FRONTATUS) have been identified as using the vegetation communities.

**Official Values Not Available**

**Description**

The Ingleburn Army Camp in 2001 covered 311 hectares. It is located forty kilometres south-west of Sydney. The land is elevated, generally flat or gently rolling, grassland and bushland. Ingleburn was an open army base, generally accessible to the public. Built complexes remaining on the site include groups of timber framed, barracks-style buildings in a standard military layout, with each group originally served by a standard pattern mess, ablutions buildings, recreation facilities, a few isolated, general use structures, such as the former Lecture Hall Complex; and two discrete areas of detached housing used as married quarters. Outdoor facilities include parade ground, sporting grounds, tennis courts and firing ranges.

During military occupation of the site, a grid and block road pattern containing rows of ordered and uniform buildings, separated by areas of undeveloped land evolved. The planning was characteristic of such Defence sites and the prevailing philosophies regarding the social heirarchy of the Army and the separation of functions. The separation of functions was increased by the undulating nature of the land, with development taking place on areas of higher ground.

A group of prefabricated cottages in the Ingleburn Village area is separately listed in the Register at Reg No. 103576.

The areas and buildings of heritage significance included in this listing are:

1. The Ingleburn Military Heritage Precinct, formed in the late 1990s, and housing the former Bardia Barracks entrance gates and sentry boxes, Guard House and Cell Block, former Post Office and Chaplain's Office (Sydney Williams New Type huts), three P-1 type huts (formerly used for administration and dormitory purposes), and a number of memorials. These are described as follows:

- The Guard House and Cell Block located immediately to the west of the Bardia Barracks entrance gates. The Guard House was constructed by 1942, the Cell Block appears to be a later addition constructed by 1949. The Guard House is a timber framed, weatherboard clad building with a corrugated iron hipped roof. The front elevation has a verandah with timber posts. The Cell Block is located directly behind the Guard House, to the west, and consists of an L-shaped wing containing five cells in each length. It is timber framed with a corrugated iron clad hipped roof and features heavy timber doors to each cell. A corrugated iron flat-roofed weatherboard clad amenities block is located to the north side of the Guard House and Cell Block. The area enclosed by the three buildings forms a small exercise yard surrounded by ten cells, amenities and the guard's quarters.

- The former Post Office and Chaplains Office are P-1 type huts erected 1950-1959. They are longer and wider than the original P-1 hut type and have a two-paned hopper or double-hung sash window and are clad in profiled weatherboard with corrugated iron roof. They are associated with the Australian involvement in the Korean War and with subsequent army defence training needs.

- The three P-1 type huts (1939-1946) were formerly used for administration and dormitory purposes. The P-1 type hut was a standard Army barracks building. They are simple rectangular, gable roofed, weatherboard clad, structures raised on brick piers with corrugated-iron roof cladding. Six pairs of three-paned casement windows are located on the long sides of each building. Doors are located in the end walls with air vents located above in the apex of the gable.

- The memorials include the 16th Australian Infantry Brigade Memorial (relocated); memorial to National Servicemen erected in 1997 (relocated), a new Memorial Wall dedicated on 5 August 2001 by Mrs Danna Vale, Member for Hughes, which lists the names of all units which have served at Ingleburn; and a memorial grove of cypress surrounding a sandstone column monument, dedicated in 1987.

- The Lecture Hall building, 1953, was constructed as the Recreation Centre. It is U-shaped, constructed from four semi-circular arched corrugated iron building units that form three sides of a north-facing enclosure. The central section of the U consists of two arched building units, separated by a two storey, rectangular, skillion-roofed, weatherboard-clad building unit that forms a main entrance lobby and stairwell for the complex. A verandah runs around the enclosure side of the building. The east and west wings each contain two large rooms, three of which are fitted out as lecture rooms. The other large room contains a theatrette with tiered bench seating and a small stage recess. One of the lecture rooms has primitive but effective acoustic wall and ceiling panelling.

2. Mont St Quentin Oval, entry gates and flagpole are located to the south of Campbelltown Road. There is a set of gates, steps and flagpole mounting, creating a formal entrance to the oval. The gates are flanked by 800mm high walls of random coursed horizontal sandstone slabs with a concrete coping constructed by a local stonemason. The Mont St Quentin Oval was the original parade ground used during WWII training.

3. Kitchen/Dining Hall Complex, c1955, formerly part of the Mont St Quentin Barracks, is the only one remaining of two such complexes. It consists of four P-1 hut type standard building units located in pairs on either side of a central gable-roofed service wing and kitchen, the latter distinguished by a central clerestory section in its roof. The service wing contains a delivery area along one side and a series of refrigeration and storage rooms along the other side. The four wings are fitted out as open dining rooms and all are directly connected to the central kitchen through their end wall. Wall cladding is weatherboard or profiled weatherboard. The interiors are lined with battened painted hardboard sheeting and the ceilings are asbestos cement sheeting. It contains moveable heritage items including embossed Army crockery, furniture and kitchen appliances and fittings.

The distribution of vegetation communities within western Sydney is determined primarily by geology and associated soils and drainage, rainfall and topography. These communities also tend to be predominantly eucalypt-dominated. The Cumberland Plain Woodlands are widely distributed on the gently undulating Cumberland Plain west of Parramatta. This geographic range is reflected in a high turnover of species within the community types. Despite this, the Cumberland Plain Woodlands community is considered to be floristically distinct from woodland or forest types with similar structure elsewhere in the NSW and nationally. On the Cumberland Plain, there has been extensive clearing right up to creek lines for agricultural land uses and flood mitigation. The rich alluvial soils of the creek and river systems were extensively cleared by early settlers and as early as the 1820s the greater part of these alluvial lands along the Hawkesbury and Nepean Rivers had been cleared and cultivated. An estimated 93% of the original area covered by Cumberland Plain Woodland in western Sydney has been cleared. Present remnants comprise less than 10% of its former area and 90% of these remnants are in small patches which are subject to ongoing threatening processes.

Nine individual plant species, which have been identified as vulnerable on the Cumberland Plain have been identified on the site. EUCALYPTUS AMPLIFOLIA, DAVIESIA GENISTIFOLIA, PHYLLANTHUS VIRGATUS, CHLORIS VENTRICOSA, PLANTAGO

GAUDICHAUDI, AMYEMA GAUDICHAUDI, EREMOPHILA DEBILIS, GLYCINE MICROPHYLLA and CYPERUS TRINERVIS.

The Ingleburn Defence Area has been subject to a range of impacts since the first land grants were made in 1816. While the area appears not to have been subject to intensive farming it has been subject to clearing and grazing from that time. The remnant natural vegetation within the Ingleburn Defence Site was identified in 1992 by Doug Benson as Grey Box Woodland. The Woodland, also known as Cumberland Plain Woodlands, occurs in a number of discrete areas on the site; a major area extending generally north-east of the property, an area to the north of the Bardia Barracks, a smaller area south of Campbelltown Road and a large block west of Zouch Road.

**History**

Prior to 1939, the site was principally used for the grazing of livestock.

With the entry of Australia into WWII on 3 September 1939 there was a need for a principal site in New South Wales to train infantry for the Second Military District (NSW). Plans were drawn up for what was called the Ingleburn Military Camp in 1939 and the army acquired the 684 acres in 1940, although they were already in occupation in tents. Accommodation was initially constructed to provide for the 2nd Australian Imperial Forces (AIF). Two hundred and fifty three buildings were originally constructed with a further eighty constructed soon after. These included Artillery Units (62 buildings); Brigade Headquarters (22 buildings); Signallers Unit (44 buildings); Engineers Unit (31 buildings); Works and Ordinance Unit (6 buildings); Army Services Corps Depot (7 buildings); Army Medical Corps Depot (7 buildings); Army Medical Corps (27 buildings); Army Services Corps Camp (80 buildings); Reconnaissance Section (41 buildings) and Miscellaneous buildings (13 buildings).

Ingleburn was the first purpose-built army camp for the training of Australian infantry to fight in WWII and became the major training facility in New South Wales. It was a unified infantry camp but all corps were represented there including engineers, transport, signals and anti-aircraft units. The camp was an assembly point for Army brigades most notably, the 16th Battalion of the 6th Division, the first Australian overseas contingent. Other brigades included units from the 7th and 9th Division.

During the years between WWII and Australia's involvement in the Korean War (1951), the Army leased sections of the site to farmers for grazing purposes. The Korean War saw changes to the size and use of the site. During the 1950s, Battalions destined for Korea were stationed at Ingleburn. National Service recommenced following the outbreak of the Korean War and by 1954 Ingleburn was a major centre for the National Service Program. From 1951 onwards, many Australians experienced military training at Ingleburn prior to going into a Reserve Unit.

By 1959, a number of sporting fields, vehicle parks, larger buildings and a large area of the Married Quarters (Ingleburn Village) had been constructed. Buildings erected in the western half of the Village included some 35 Riley-Newsum houses Type CA4, produced by H Newsum Sons & Company Ltd in Lincoln, England. Between 1951-54, an order of 600 was shipped to Australia. Prefabricated Amals Sagverk Aktibolag cottages were also erected in the village area.

After 1964, the National Service Program played an even greater role in Ingleburn's history, when the Commonwealth Government extended compulsory military training and conscripts were sent on military operations outside Australia. In the 1960s, Ingleburn was a focus for public concern over the issue of conscription, as several "conscientious objectors" were interred in Ingleburn's Guard House and Cell Blocks, usually while awaiting transport to the Military Prison at Holsworthy.

The training of National Service recruits was the main function of Ingleburn from 1951 until 1972, when the Commonwealth Government abolished National Service. Since the end of WWII the Camp's main functions was training camp for the National Service Scheme (1951-1972) and as the Headquarters of Second Training Group of the Army Reserves (post 1973).

From the mid-1990s, activity at the Camp began to wind down with the units gradually being transferred to other areas. The site has most recently been used by the Australian Army for housing a combination of army units, as well as being a training facility for the Army Reserve. Many buildings were demolished or destroyed by fire in the late 1990s. There were formerly around one hundred and ten buildings of the P-1 type huts located in the Bardia Barracks Precinct containing residential, storage or administrative functions. Less than twenty remain (2002). The site has been vacant since late 2000.

**Condition and Integrity**

Condition:
All buildings and structures in the Ingleburn Military Heritage Precinct are in good condition. The former lecture hall complex is in poor condition due to vandalism and lack of maintenance and protection. The kitchen/dining hall complex is in fair condition, it has suffered from vandalism.
The Riley-Newsum cottages are in relatively good condition. (2002)
Integrity:
The Riley-Newsum cottages are relatively intact with few changes to the setting. Other structures in the Military Heritage Precinct are of relatively high integrity although some have been relocated (refer to Description).

The site shows a history of clearing and grazing but retains sufficient mature canopy and substrate species to ensure natural regeneration. The absence of fire over a long period has contributed to the spreads of weeds, particularly African Olive. There are also infestations of Tiger Pear and Prickly Pear. The area to the north -east of the site contains cleared areas associated with a sewargae treatment plant established during the 1940s. The land to the west of Zouch Road is bisected by firetrails and other minor tracks most of which have not been used for some time. Regeneration of the least disturbed areas has occurred over the years since they were first identified by Benson.

## Location

About 120ha, at Ingleburn Village, comprising the following areas:
1. Lot A DP188121.
2. Lot 3 DP831152.
3. Lot 1 DP801456.
4. An area bounded by a line commencing at the intersection of MGA easting 302000mE with an unnamed track (approximate MGA point 02003910), then westerly via the track to its intersection with MGA easting 301450mE (approximate MGA point 01453895), then via the following MGA points consecutively: 01453883, 01553877, 01653878, 01803868, 01903869, 01853875, 01773880, 01803888, 02003885, 02033886, 01983901, then directly to the point of commencement.
5. An area bounded by a line commencing at the north east corner of the Lecture Hall building (approximate MGA point 01643870), then westerly via the Lecture Hall wall and its alignment to its north west corner, then southerly to its south west corner, then directly to the intersection of MGA easting 301640mE with Campbelltown Road, then directly to the intersection of MGA northing 6238200mN with Wooten Road, then southerly via wooten Road to its intersection with MGA northing 6238050, then directly to approximate MGA point 01603807, then northerly to the intersection of Eather Road with MGA easting 301550mE, then easterly via Eather Road to its intersection with MGA easting 301700mE, then directly to MGA pointn 01803830, then northerly directly to the point of commencement.

## Bibliography

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Benson, D. H. "Natural Vegetation of the Penrith area", Cunninghamia, Vol2(4) 1992

**Report Produced Mon Aug 22 10:35:57 2022**

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# Appendix E Historical Aerials



**Legend**

Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R01 Rev A | Date 25/08/2022 |
| Drawn By: YY | Checked By: MD |
| Scale 1:7,000 | |

0 80 160

metres

Coord. Sys. GDA 1994 MGA Zone 56

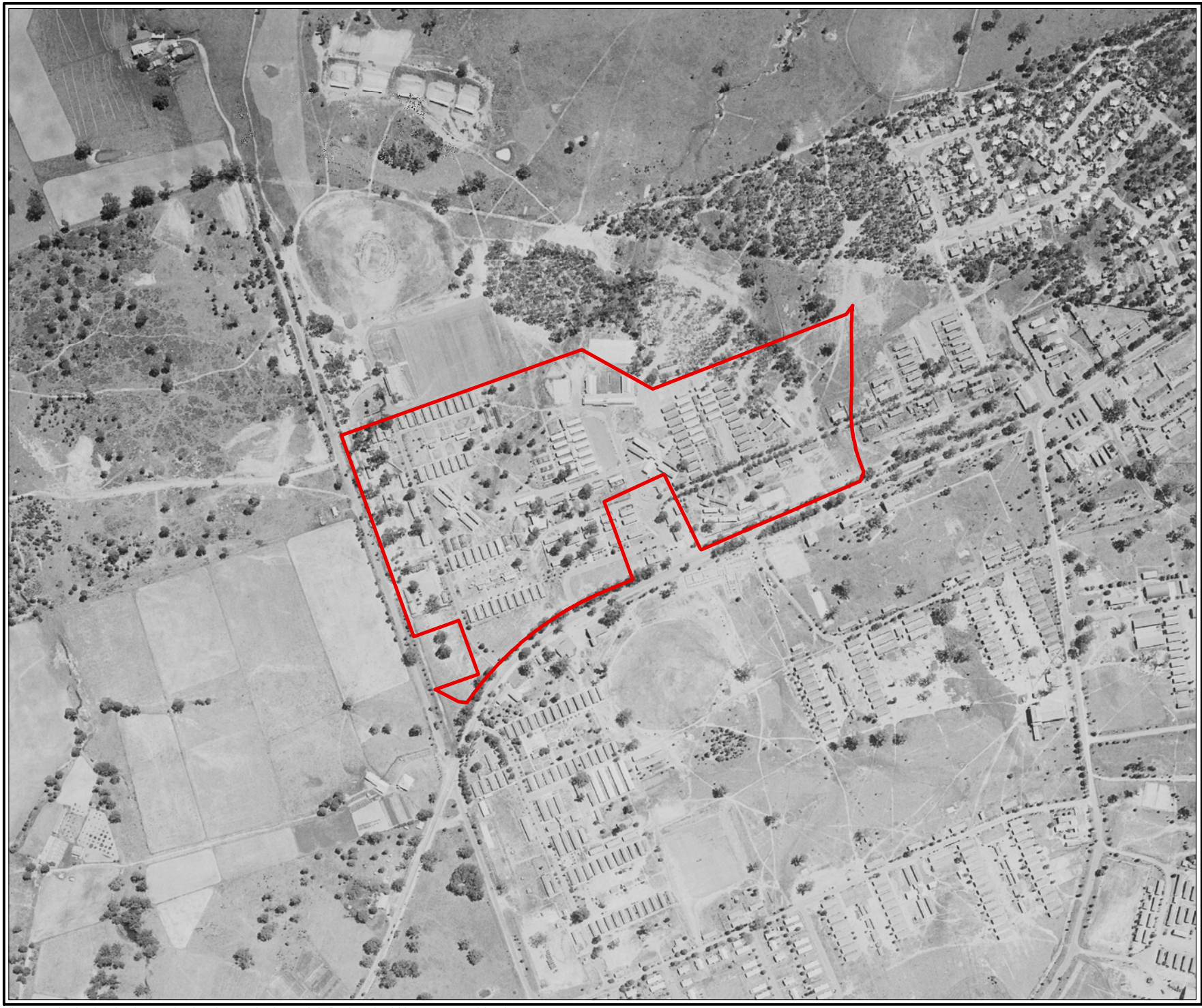
**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL AERIAL PHOTOGRAPH - 1947**

**AERIAL 1947**

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\Aerials\63325_1947_Aerial.mxd

Reference: NSW Government | Copyright © Spatial Services 2022



**Legend**

Approximate Site Boundary

JBS&G

Job No: 63325

Client: Landcom

| Version: R01 Rev A | Date 25/07/2022 |
|---|---|
| Drawn By: YY | Checked By: MD |

Scale 1:7,000

0 80 160

metres

Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL AERIAL PHOTOGRAPH - 1956**

**AERIAL 1956**

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\Aerials\63325_1956_Aerial.mxd

Reference: NSW Government | Copyright © Spatial Services 2022



**Legend**

Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R01 Rev A | Date 25/07/2022 |
| Drawn By: YY | Checked By: MD |
| Scale 1:7,000 | |

0 80 160

metres

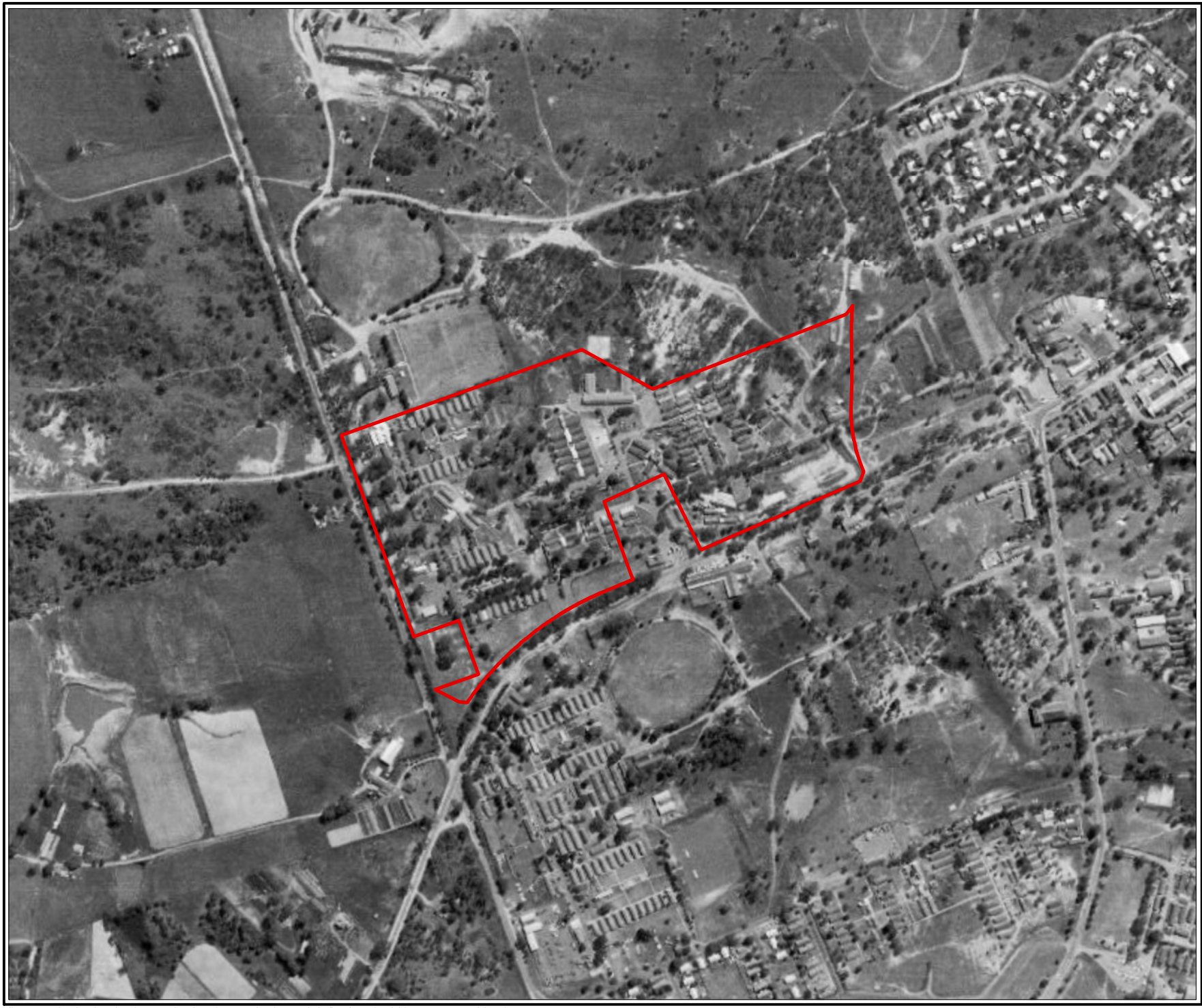
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL AERIAL PHOTOGRAPH - 1965**

**AERIAL 1965**

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\Aerials\63325_1965_Aerial.mxd
Reference: NSW Government | Copyright © Spatial Services 2022



**Legend**

Approximate Site Boundary

JBS&G

Job No: 63325

Client: Landcom

| Version: R01 Rev A | Date 25/07/2022 |
|---|---|
| Drawn By: YY | Checked By: MD |

Scale 1:7,000

0 80 160

metres

Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL AERIAL PHOTOGRAPH - 1975**

**AERIAL 1975**

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\Aerials\63325_1975_Aerial.mxd

Reference: NSW Government | Copyright © Spatial Services 2022



**Legend**

Approximate Site Boundary

JBS&G

Job No: 63325

Client: Landcom

| Version: R01 Rev A | Date 25/07/2022 |
|---|---|
| Drawn By: YY | Checked By: MD |

Scale 1:7,000

0 80 160

metres

Coord. Sys. GDA 1994 MGA Zone 56

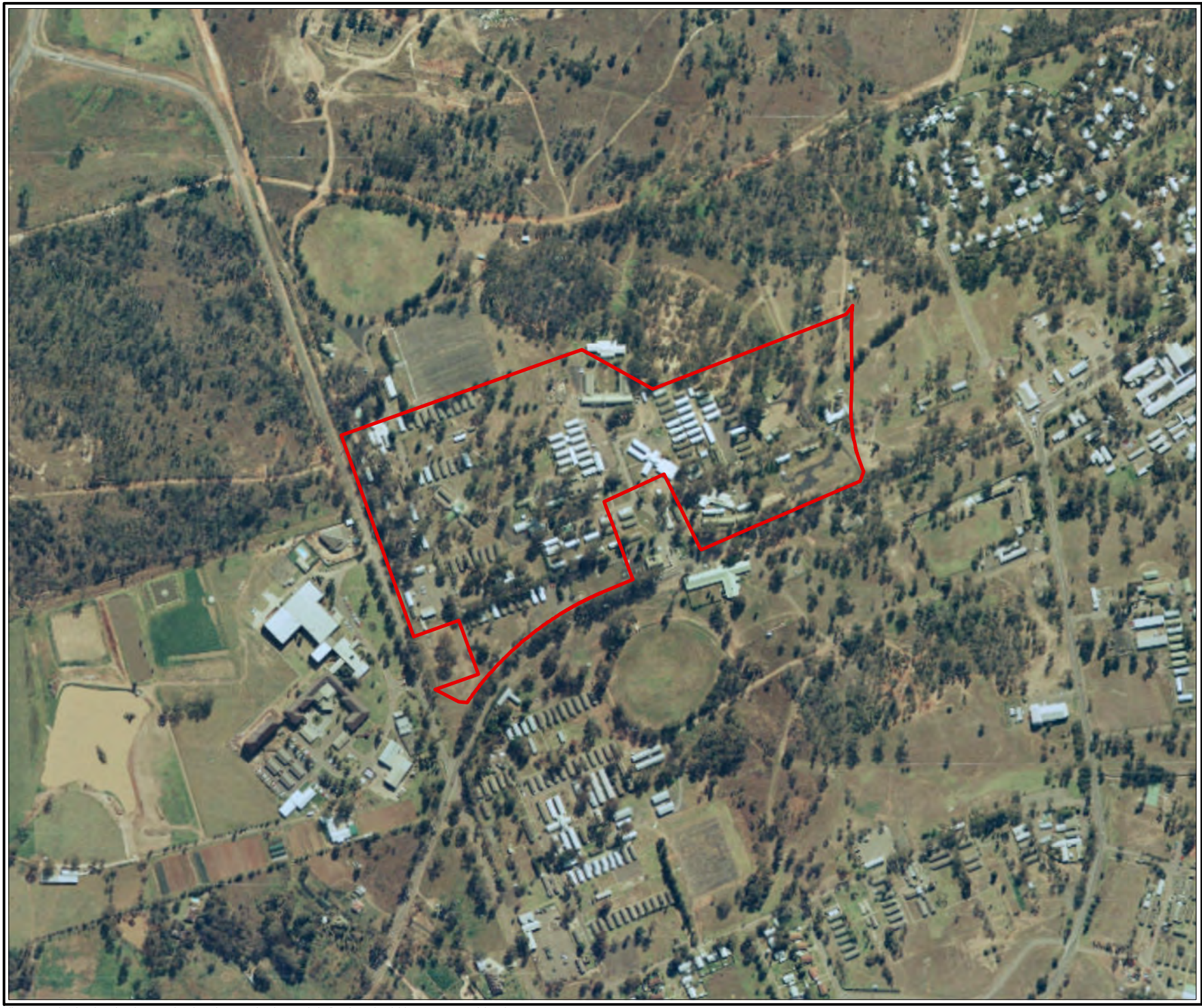
**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL AERIAL PHOTOGRAPH - 1984**

**AERIAL 1984**

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\Aerials\63325_1984_Aerial.mxd

Reference: NSW Government | Copyright © Spatial Services 2022



**Legend**

Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R01 Rev A | Date 25/07/2022 |
| Drawn By: YY | Checked By: MD |
| Scale 1:7,000 | |

0 80 160

metres

Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL AERIAL PHOTOGRAPH - 1991**

**AERIAL 1991**

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\Aerials\63325_1991_Aerial.mxd
Reference: NSW Government | Copyright © Spatial Services 2022



**Legend**

Approximate Site Boundary

JBS&G

Job No: 63325

Client: Landcom

| Version: R01 Rev A | Date 25/07/2022 |
|---|---|
| Drawn By: YY | Checked By: MD |

Scale 1:7,000

0 80 160

metres

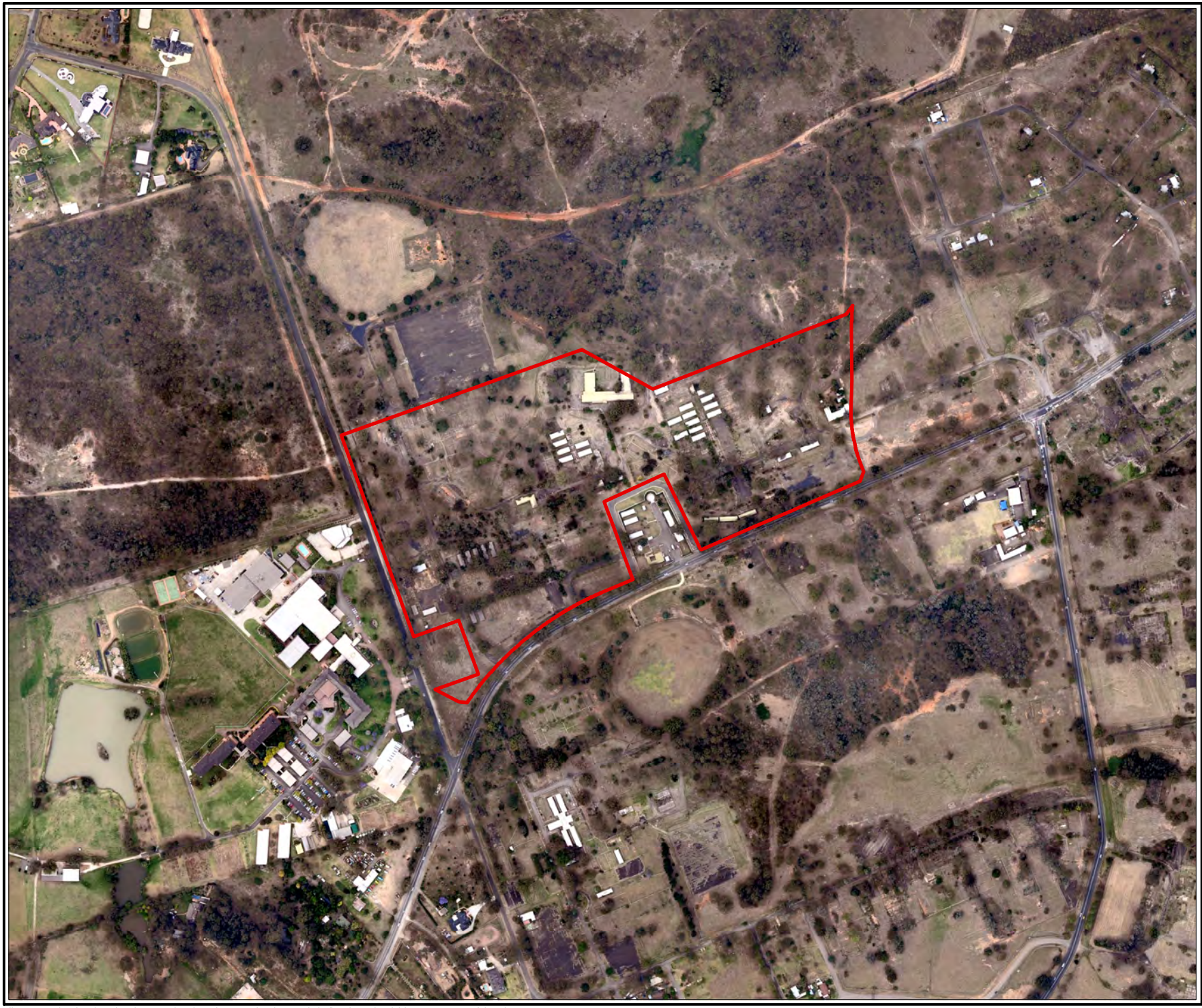
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL AERIAL PHOTOGRAPH - 1998**

**AERIAL 1998**

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\Aerials\63325_1998_Aerial.mxd
Reference: NSW Government | Copyright © Spatial Services 2022



**Legend**

Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R01 Rev A | Date 25/07/2022 |
| Drawn By: YY | Checked By: MD |
| Scale 1:7,000 | |

0 80 160

metres

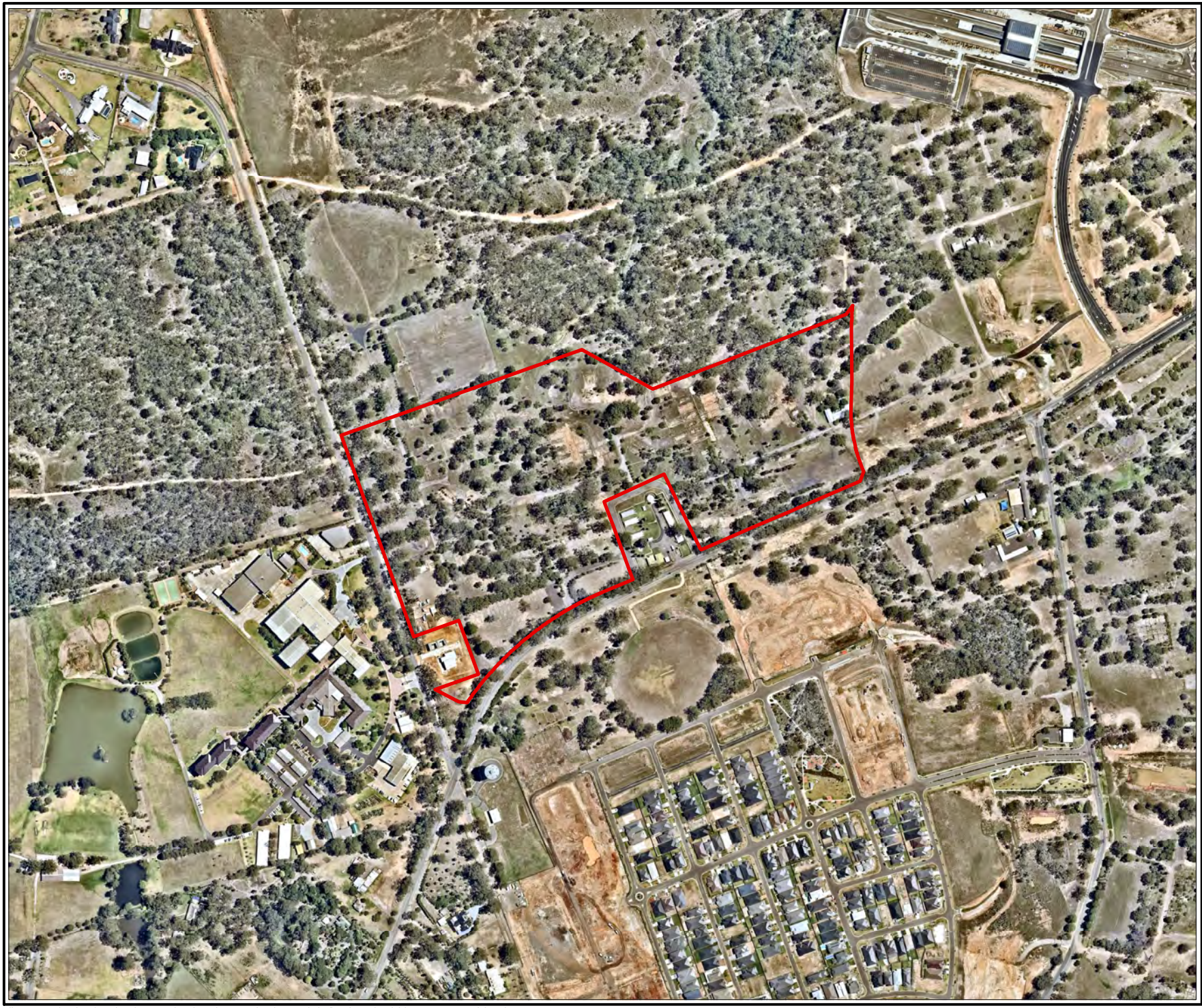
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL AERIAL PHOTOGRAPH - 2009**

**AERIAL 2009**

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\Aerials\63325_2009_Aerial.mxd
Reference: www.nearmap.com - 20091114



**Legend**

Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R01 Rev A | Date 25/07/2022 |
| Drawn By: YY | Checked By: MD |
| Scale 1:7,000 | |

0 80 160

metres

Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL AERIAL PHOTOGRAPH - 2015**

**AERIAL 2015**

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\Aerials\63325_2015_Aerial.mxd
Reference: www.nearmap.com - 20150108



**Legend**

Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: R01 Rev A | Date 25/07/2022 |
| Drawn By: YY | Checked By: MD |

Scale 1:7,000

0 80 160

metres

Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**HISTORICAL AERIAL PHOTOGRAPH - 2022**

**AERIAL 2022**

File Name: N:\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\Aerials\63325_2022_Aerial.mxd
Reference: www.nearmap.com - 20220604

# Appendix F Test Pit Logs

# TEST PIT DG01

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Silty CLAY, Black/Brown: heterogeneous, Damp, medium plasticity, Soft, Inclusion of root/rootlets, some organic Matter, Trace gravels/rocks. Becomes grey + high plasticity at 0.2m | DP | DG01_0.00-0.10 | 5.2 | No odours, staining or asbestos containing materials |
| | | | | | | | DG01_0.20-0.30 | 3.9 | |
| | | 0.4 | | CH | Natural - CLAY, Orange, heterogeneous, Dry, high plasticity, stiff, Inclusion of trace roots/rootlets. | DR | DG01_0.40-0.50 | 1.8 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | | | | | |
| | | 0.8 | | | Termination Depth at: 0.70 m. | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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produced by ESlog.ESdat.net on 19 Jan 2023

# TEST PIT DG02

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Silty CLAY, Brown, heterogeneous, Dry, high plasticity, Firm, Inclusion of roots/rootlets, some organic matter, some gravels/rocks, trace plastics | DR | DG02_0.00-0.10 | 4.6 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Orange, heterogeneous, Dry, high plasticity, stiff, Inclusion of roots/rootlets, some gravels/rocks/shales | DR | DG02_0.20-0.30 | 2.9 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

**Disclaimer** This log is intended for environmental not geotechnical purposes.
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# TEST PIT DG03

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Silty CLAY, Brown, heterogeneous, Dry, high plasticity, Firm, Inclusion of roots/rootlets, gravels/rocks, trace plastic, some wood ash | DR | DG03_0.00-0.10 | 3.9 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Orange, heterogeneous, Dry, high plasticity, Stiff, Inclusion of some roots/rootlets, trace organic matter | DR | DG03_0.20-0.30 | 2 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT DG04

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - CLAY, Brown/Black, heterogeneous, Dry, high plasticity, Firm, Inclusion of roots/rootlets, Organic matter, black charcoal/coal, trace shale gravels/rocks | DR | DG04_0.00-0.10 | 3.6 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Grey/Orange, heterogeneous, Dry, high plasticity, Stiff, Inclusion of some roots/rootlets, trace gravels/rocks, shales. Becomes very stiff at 0.6m | DR | DG04_0.20-0.30 | 1.9 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | | | DG04_0.40-0.50 | 1.7 | |
| | | 0.8 | | | | | DG04_0.60-0.70 | 1.8 | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | DG04_1.20-1.30 | 2 | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | CH | Natural - Shale/Gravelly CLAY, Light Brown, heterogeneous, Dry: medium plasticity, Hard: Inclusion of shale gravel/ fortified clays | DR | DG04_1.90-2.00 | 0.9 | No odours, staining or asbestos containing materials |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | DG04_2.40-2.50 | 0.3 | |
| | | 2.6 | | | Termination Depth at: 2.60 m. | | | | |

**Comments:**

# TEST PIT DG05

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Silty CLAY, Brown, heterogeneous, Dry, high plasticity, Firm, Inclusion of rootlets/roots, trace Organic matte, trace rocks/gravels | DR | DG05-0-0.1 | 3.6 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Orange/red: heterogeneous, Dry, high plasticity, Stiff, Inclusion of roots/rootlets, some wood ash | DR | DG05_0.20-0.30 | 1.8 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT DG06

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 18-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Andrew Cheok

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - CLAY, Brown, heterogeneous, Damp, medium plasticity, Soft, Inclusion of rootlets, roots | DP | DG06-0-0.1 | 3.3 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Red, heterogeneous, Damp, high plasticity, Stiff, Inclusion of trace rootlets/roots | DP | DG06-0.2-0.3 | 1.8 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT DG07

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 18-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Silty CLAY, Brown/Black, heterogeneous, Damp, high plasticity, Firm, Inclusion of trace roots/rootlets, some organic matter, trace gravels | DP | DG07_0.00-0.10 | 2.9 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Red/orange, heterogeneous, Dry, high plasticity, Stiff, Inclusion of trace roots/rootlets | DR | DG07-0.2-0.3 | 1.6 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT FT01

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2<br>0.4 | | Fill | Fill - silty CLAY, Brown, heterogeneous, Damp, high plasticity, Soft, Inclusion of organic matter, roots/rootlets, demo: brick, concrete, plastic tile, pvc, metal, teracotta, gravels/rocks | DP | FT01-0-0.1<br>FT01_0.20-0.30 | 6.9<br>5.5 | No odours, staining or asbestos containing materials |
| | | 0.6<br>0.8<br>1<br>1.2<br>1.4<br>1.6<br>1.8<br>2<br>2.2<br>2.4<br>2.6 | | | Termination Depth at: 0.50 m. | | | | |

**Comments:**

# TEST PIT FT02

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - CLAY, Brown, heterogeneous, Dry, high plasticity, Firm, Inclusion of roots/rootlets, osme bricks, gravels/rocks, trace plastic, shale gravels | DR | FT02_0.00-0.10 | 4.2 | No odours, staining or asbestos containing materials |
| | | | | | | | | | |
| | | | | | | | FT02-0.2-0.3 | 3.9 | |
| | | 0.4 | | | | | | | |
| | | | | | | | FT02_0.40-0.50 | 2 | |
| | | 0.6 | | | | | | | |
| | | 0.8 | | CH | Natural - CLAY, Red/orange, heterogeneous, Dry, high plasticity, Stiff, Inclusion of some | DR | | | |
| | | 1 | | CH | Natural - CLAY, Red/orange, heterogeneous, Dry, high plasticity, Stiff, Inclusion of some roots/rootlets | DR | FT02_0.90-1.00 | 1.3 | No odours, staining or asbestos containing materials |
| | | | | | | | | | |
| | | 1.2 | | | Termination Depth at: 1.10 m. | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT FT03

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Silty CLAY, Brown, heterogeneous, Dry, high plasticity, Soft, Inclusion of roots/rootlets, Organic matter, trace wood-ash, trace gravels/rocks, trace glass | DR | FT03_0.00-0.10 | 4.7 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Orange/red: heterogeneous, Dry, high plasticity, Stiff, Inclusion of some roots/ootlets, trace gravels/rocks/ironstone | DR | FT03_0.20-0.30 | 3.1 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT PF01

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 18-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Silty CLAY, Brown, heterogeneous, Damp, high plasticity, Firm, Inclusion of roots/rootlets, bricks, gravels/rocks, trace organic matter | DP | PF01_0.00-0.10 | 3.9 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Orange, heterogeneous, Dry, high plasticity, Stiff, Inclusion of some wood-ash, roots/rootlets, trace gravels/rocks | DR | PF01_0.20-0.30 | 2.1 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT PF02

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Sandy CLAY, Orange/brown, heterogeneous, Dry, high plasticity, Soft, Inclusion of roots/rootlets, bricks, gravels/rocks, trace organic matter | DR | PF02_0.00-0.10 | 4 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Orange/red: heterogeneous, Dry, high plasticity, very stiff, Inclusions of some wood-ash + roots/rootlets | DR | PF02_0.20-0.30 | 3.1 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT PF03

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - CLAY, Orange: heterogeneous, Dry, high plasticity, Stiff, Inclusion of roots/rootlets, gravels/rocks, trace plastic, some wood ash | DR | PF03_0.00-0.10 | 3.3 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, red/orange, heterogeneous, Dry, high plasticity, very stiff, Inclusion of some roots/rootlets + wood-ash | DR | PF03_0.20-0.30 | 2.8 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT PF04

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Silty CLAY, Brown, heterogeneous, Dry, high plasticity, Firm, Inclusion of roots/rootlets, concrete chunks, come gravels/rocks, wood ash, trace organic matter, some blue metal gravels | DR | PF04_0.00-0.10 | 4.1 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Orange/red: heterogeneous, Dry, high plasticity, very stiff, Inclusion of roots/rootlets, trace gravels/rocks | DR | PF04_0.20-0.30 | 3.2 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT PF05

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Sandy, Gravelly CLAY, Grey/black/ yellow, heterogeneous, Dry, medium plasticity, stiff, Inclusion of rocks/gravels/blue metals/asphalt | DR | PF05_0.00-0.10 | 6.8 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Red/orange, heterogeneous, Dry, high plasticity, very stiff, Inclusion of trace gravels/rocks + roots/rootlets | DR | PF05_0.20-0.30 | 4 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT PF06

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Gravelly sandy CLAY, Black/grey, heterogeneous, dry, medium plasticity, Firm, Inclusion of asphalt/gravels/rocks/blue metals | DR | PF06_0.00-0.10 | 9.6 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Red/brown, heterogeneous, Dry, high plasticity, very stiff, Inclusion of roots/rootlets, trace grvels | DR | PF06_0.20-0.30 | 2.8 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT PF07

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Gravelly CLAY, Grey/brown: heterogeneous, Dry, medium plasticity, Firm, Inclusions of gravels/rocks/blue metals/ asphalt | DR | PF07_0.00-0.10 | 9.1 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, Red/orange, heterogeneous, Dry, high plasticity, Stiff, Inclusion of roots/rootlets, some gravels/rocks | DR | PF07_0.20-0.30 | 5.2 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT PF08

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Gravelly sandy CLAY, Black/grey, heterogeneous, dry, medium plasticity, firm, inclusion of gravels/rocks/blue metals/ asphalt | DR | PF08_0.00-0.10 | 9.1 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, yellow/orange/red, heterogeneous, Dry, high plasticity, stiff, inclusion of roots/rootlets + trace gravels/rocks | DR | PF08_0.20-0.30 | 4.5 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.60 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT PF09

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Gravelly/sandy CLAY, Grey/brown/black, heterogeneous, Dry, high plasticity, Firm, inclusion of gravels/rocks/blue metals/ asphalt | DR | PF09_0.00-0.10 | 8.6 | No odours, staining or asbestos containing materials |
| | | 0.4 | | CH | Natural - CLAY, red/orange: heterogeneous, Damp, high plasticity, stiff, inclusion of roots/rootlets, trace gravels/rocks | DP | PF09_0.20-0.30 | 4.9 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | Termination Depth at: 0.50 m. | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | | | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT SP01

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | Fill | Fill - Silty CLAY, Brown, heterogeneous, Dry, high plasticity, Firm, Inclusion of roots/rootlets, rocks/gravels, trace SS gravels, trace tile/plastic/teracotta. | DR | SP01_0.00-0.10 | 4.1 | No odours, staining or asbestos containing materials |
| | | 0.4 | | | | | SP01_0.20-0.30 | 3.8 | |
| | | 0.6 | | | | | SP01_0.40-0.50 | 4.9 | |
| | | 0.8 | | CH | Natural - CLAY, orange, heterogeneous, Dry, medium plasticity, Stiff, Inclusion of roots/rootlets, trace gravels/rocks | DR | SP01_0.90-1.00 | 2.6 | No odours, staining or asbestos containing materials |
| | | 1 | | | | | | | |
| | | 1.2 | | | Termination Depth at: 1.10 m. | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

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# TEST PIT SP02

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2<br>0.4<br>0.6<br>0.8<br>1<br>1.2 | | Fill | Fill - CLAY, brown, heterogeneous, dry, high plasticity, Firm, Inclusion of roots/rootlets, gravels/roks, some organic matter, trace rock boulders, trace tile | DR | SP02_0.00-0.10<br>SP02_0.20-0.30<br>SP02_0.40-0.50<br>SP02_0.90-1.00 | 4.2<br>4<br>3.8<br>3 | No odours, staining or asbestos containing materials |
| | | 1.4<br>1.6<br>1.8<br>2<br>2.2<br>2.4<br>2.6 | | | Termination Depth at: 1.30 m. | | | | |

**Comments:**

# TEST PIT SP03

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2<br>0.4<br>0.6<br>0.8<br>1<br>1.2 | | Fill | Fill - Silty CLAY, Brown, heterogeneous, Dry, high plasticity, Firm, Inclusion of roots/rootlets, large concrete chunks, gravels/rocks, some organic matter, trace plastic/tile | DR | SP03_0.00-0.10<br>SP03_0.20-0.30<br>SP03_0.40-0.50<br>SP03_0.90-1.00 | 5<br>4.1<br>3.6<br>3.2 | No odours, staining or asbestos containing materials |
| | | 1.4<br>1.6<br>1.8<br>2<br>2.2<br>2.4<br>2.6 | | | Termination Depth at: 1.20 m. | | | | |

**Comments:**

# TEST PIT SP04

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2<br>0.4<br>0.6<br>0.8<br>1<br>1.2 | | Fill | Fill - silty CLAY, Brown: heterogeneous, Dry, medium plasticity, Firm, Inclusion of roots/rootlets, organic matter, some plastic, trace concrete, trace grey mottled clay chunks | DR | SP04_0.00-0.10<br>SP04_0.20-0.30<br>SP04_0.40-0.50<br>SP04_0.90-1.00 | 4.1<br>3.9<br>3<br>2.1 | No odours, staining or asbestos containing materials |
| | | 1.4<br>1.6<br>1.8<br>2<br>2.2<br>2.4<br>2.6 | | | Termination Depth at: 1.20 m. | | | | |

**Comments:**

# TEST PIT UST01

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 18-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Andrew Cheok

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.2 | | CH | Natural - CLAY, Orange/brown, heterogeneous, Damp, medium plasticity, Firm, Inclusion of rootlets, gravels, rocks | DP | UST01_0.00-0.10 | 2.6 | No odours, staining or asbestos containing materials |
| | | | | | | | UST01_0.20-0.30 | 2.4 | |
| | | 0.4 | | CH | Natural - CLAY, Orange/light brown, heterogeneous, Damp, high plasticity, Stiff, Inclusion of rootlets, gravels/roks, shale. Grey/white mottle at 0.9m | DP | UST01_0.40-0.50 | 2.1 | No odours, staining or asbestos containing materials |
| | | 0.6 | | | | | | | |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | UST01_0.90-1.00 | 2.2 | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | Termination Depth at: 1.30 m. | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |

**Comments:**

**Disclaimer** This log is intended for environmental not geotechnical purposes.
produced by ESlog.ESdat.net on 19 Jan 2023

## Appendix G Decontamination and Calibration Documents

# Field Equipment Calibration and Decontamination

| | | | |
|---|---|---|---|
| PROJECT NAME: | EAPARK RESI. | PROJECT NO: | 63325 |
| FIELDWORK DATES: | 17/10/22 | SAMPLERS: | M CHAPMAN, A CHEOK |
| TYPE OF INVESTIGATION: | TPIs | PROJECT MANAGER: | M DELANARO |

## CALIBRATION SUMMARY

| | |
|---|---|
| EQUIPMENT: | P.I.D |
| CALIBRATION STANDARD: | Isobutylene |

| DATE | TIME | READING (ppm) | COMMENTS |
|---|---|---|---|
| 17/10/22 | | 0 | Zero cal. |
| ↓ | | 100.3 | Bump Test. |
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## DECONTAMINATION SUMMARY

EQUIPMENT: —

| | | | | |
|---|---|---|---|---|
| 1 | Was the equipment decontaminated appropriately prior to sampling at each location? | Y | N | NA |
| 2 | Was excess soil removed by scraping, brushing or wiping with disposable towels? | Y | N | NA |
| 3 | Was the equipment contaminated with grease, tar or similar material? | Y | N | NA |
| | If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane? | Y | N | NA |
| 4 | Was phosphate-free detergent used to wash the equipment? | Y | N | NA |
| 5 | Was the equipment rinsed with clean water? | Y | N | NA |
| 6 | Was the equipment then rinsed with deionised water? | Y | N | NA |
| 7 | Were all sample containers cleaned and acid or solvent washed prior to sample collection? | Y | N | NA |

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS

New nitrile gloves @ each sample

Samples taken from centre of excavator bucket.


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# Field Equipment Calibration and Decontamination

| | |
|---|---|
| PROJECT NAME: EDPARK | PROJECT NO: 63325 |
| FIELDWORK DATES: 18/10/22. | SAMPLERS: M. CHAPMAN / A. CHEOK |
| TYPE OF INVESTIGATION: TP's | PROJECT MANAGER: M. DECANDRO |

**CALIBRATION SUMMARY**

| |
|---|
| EQUIPMENT: P.I.D |
| CALIBRATION STANDARD: Isobutylene 100ppm |

| DATE | TIME | READING (ppm) | COMMENTS |
|---|---|---|---|
| 18/10/22 | | 0 | Zero cal. |
| ↓ | | 100.6 | Bump Test. |
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**DECONTAMINATION SUMMARY**

EQUIPMENT: N/A.

| | | | | |
|---|---|---|---|---|
| 1 | Was the equipment decontaminated appropriately prior to sampling at each location? | Y | N | (NA) |
| 2 | Was excess soil removed by scraping, brushing or wiping with disposable towels? | Y | N | (NA) |
| 3 | Was the equipment contaminated with grease, tar or similar material? | Y | N | (NA) |
| | If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane? | Y | N | NA |
| 4 | Was phosphate-free detergent used to wash the equipment? | Y | N | (NA) |
| 5 | Was the equipment rinsed with clean water? | Y | N | (NA) |
| 6 | Was the equipment then rinsed with deionised water? | Y | N | (NA) |
| 7 | Were all sample containers cleaned and acid or solvent washed prior to sample collection? | (Y) | N | NA |

**WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS**

- New nitrile gloves @ each sample.
- Samples taken from centre of excavator bucket.


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# Field Equipment Calibration and Decontamination

| | |
|---|---|
| PROJECT NAME: EDPARK | PROJECT NO: 63325 |
| FIELDWORK DATES: 19/10/22 . | SAMPLERS: M. CHAPMAN |
| TYPE OF INVESTIGATION: TP's + HYDRANTS | PROJECT MANAGER: M. DELANDRO |

**CALIBRATION SUMMARY**

| |
|---|
| EQUIPMENT: P.I.D |
| CALIBRATION STANDARD: Isobutylene 100ppm. |

| DATE | TIME | READING (ppm) | COMMENTS |
|---|---|---|---|
| 19/10/22 | | 0 | Zero Cal. |
| ↓ | | 99.8 | Bump Test. |
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**DECONTAMINATION SUMMARY**

EQUIPMENT: N/A.

| | | | | |
|---|---|---|---|---|
| 1 | Was the equipment decontaminated appropriately prior to sampling at each location? | Y | N | (NA) |
| 2 | Was excess soil removed by scraping, brushing or wiping with disposable towels? | Y | N | (NA) |
| 3 | Was the equipment contaminated with grease, tar or similar material? | Y | N | (NA) |
| | If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane? | Y | N | NA |
| 4 | Was phosphate-free detergent used to wash the equipment? | Y | N | (NA) |
| 5 | Was the equipment rinsed with clean water? | Y | N | (NA) |
| 6 | Was the equipment then rinsed with deionised water? | Y | N | (NA) |
| 7 | Were all sample containers cleaned and acid or solvent washed prior to sample collection? | (Y) | N | NA |

**WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS**

- New nitrile gloves @ each sample.
- Samples taken from centre of excavator bucket.


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# Calibration and Service Report

ABN: 74 619 717 350
Contact: 02 9730 2019
Email: sales@experttesting.com.au
9/171 Power Street, Glendenning NSW 2761
Web: www.experttesting.com.au

EXPERT TESTING SERVICES

| | | | | | |
|---|---|---|---|---|---|
| **Company:** | JBS&G Australia | **Manufacturer:** | Ion Science | **Serial #:** | T-118375 |
| **Contact:** | Michelle Delandro | **Instrument:** | Phocheck Tiger Select | **Asset #:** | -#12 |
| **Address:** | Level1, 50 Margaret St, SYDNEY NSW 2000 | **Model:** | Tiger | **Part #:** | - |
| | | **Configuration:** | VOC | **Sold:** | - |
| **Phone:** | 0417 287 561 | **Wireless:** | - | **Last Cal:** | 11.10.2022 |
| **Fax:** | | **Network ID:** | - | **Job #:** | 102601 |
| **Email:** | mdelandro@jbsg.com.au | **Unit ID:** | -#12 | **Cal Spec:** | Std |
| | | | | **Order #:** | TBA |

| Item | Test | Pass/Fail | Comments | Part Code | S/W |
|---|---|---|---|---|---|
| **Battery** | NiCd, NiMH, Dry cell, Li Ion | ✓ | | | |
| **Charger** | Charger, Power supply | ✓ | | | |
| | Cradle | ✓ | | | |
| **Pump** | Flow | ✓ | >300ml/min | | |
| **Filter** | Filter, fitting, etc | X | Dirty - replaced | | |
| **Alarms** | Audible, visual, vibration | ✓ | | | |
| **Display** | Operation | ✓ | | | |
| **Switches** | Operation | ✓ | | | |
| **PCB** | Operation | ✓ | | | |
| **Connectors** | Condition | ✓ | | | |
| **Firmware** | Version | ✓ | | | |
| **Datalogger** | Operation | ✓ | | | |
| **Monitor Housing** | Condition | ✓ | | | |
| **Case** | Condition/Type | ✓ | | | |
| **Sensors** | | | | | |
| PID | Lamp | X | Cleaned | | |
| PID | Sensor | ✓ | | | |
| THP | Sensor | ✓ | | | |
| | | | | | |
| | | | | | |

**Engineer's Report**

Checked unit settings and configuration – okay
Replaced dirty inlet filter and serviced pump assembly.
Unit allowed to stabilize and zero calibration performed as per manufacturers specifications
Calibration procedure written and performed to manufacturers specification using traceable gases.

## Calibration Certificate

| Sensor | Type | Serial No: | Span Gas | Concentration | Traceability Lot # | CF | Reading | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Zero | Span |
| PID | 10.6eV | | Isobutylene | 100ppm | WO205484 | | 0 | 100ppm |
| | | | | | | | | |
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| | | | | | | | | |

Calibrated/Repaired by: **Amend Kumar** Date: **11.10.2022** Next Due: **11.04.2023**

GLOBAL COMPLIANCE CERTIFICATION GCC ISO 9001 Certified
GLOBAL COMPLIANCE CERTIFICATION GCC ISO 14001 Certified
JAS-ANZ WWW.JAS-ANZ.ORG/REGISTER

# Field Equipment Calibration and Decontamination

| | |
|---|---|
| **PROJECT NAME:** EDPARK 6ME. | **PROJECT NO:** 63325 |
| **FIELDWORK DATES:** 28/10/22 | **SAMPLERS:** M CHAPMAN |
| **TYPE OF INVESTIGATION:** 6ME | **PROJECT MANAGER:** M DELANDRO |

**CALIBRATION SUMMARY**

| |
|---|
| **EQUIPMENT:** WQM – Airnet. |
| **CALIBRATION STANDARD:** Airnet Calibrated. |

| DATE | TIME | READING (ppm) | COMMENTS |
|---|---|---|---|
| – | – | – | – |
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**DECONTAMINATION SUMMARY**

| | |
|---|---|
| **EQUIPMENT:** | IP + weights/collars. |

| | | | | |
|---|---|---|---|---|
| 1 | Was the equipment decontaminated appropriately prior to sampling at each location? | (Y) | N | NA |
| 2 | Was excess soil removed by scraping, brushing or wiping with disposable towels? | (Y) | N | NA |
| 3 | Was the equipment contaminated with grease, tar or similar material? | Y | N | (NA) |
| | If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane? | Y | N | NA |
| 4 | Was phosphate-free detergent used to wash the equipment? | (Y) | N | NA |
| 5 | Was the equipment rinsed with clean water? | (Y) | N | NA |
| 6 | Was the equipment then rinsed with deionised water? | (Y) | N | NA |
| 7 | Were all sample containers cleaned and acid or solvent washed prior to sample collection? | (Y) | N | NA |

**WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS**

- New nitrile gloves @ each location.
- Sampling equipment not reused between samples.


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## Multi Parameter Water Meter

**Instrument** YSI Quatro Pro Plus
**Serial No.** 11E101629

Air-Met Scientific Pty Ltd
1300 137 067

| Item | Test | Pass | Comments |
|---|---|---|---|
| **Battery** | Charge Condition | ✓ | |
| | Fuses | ✓ | |
| | Capacity | ✓ | |
| | | | |
| **Switch/keypad** | Operation | ✓ | |
| **Display** | Intensity | ✓ | |
| | Operation (segments) | ✓ | |
| **Grill Filter** | Condition | ✓ | |
| | Seal | ✓ | |
| **PCB** | Condition | ✓ | |
| **Connectors** | Condition | ✓ | |
| **Sensor** | 1. pH | ✓ | |
| | 2. mV | ✓ | |
| | 3. EC | ✓ | |
| | 4. D.O | ✓ | |
| | 5. Temp | ✓ | |
| | | | |
| **Alarms** | Beeper | | |
| | Settings | | |
| **Software** | Version | | |
| **Data logger** | Operation | | |
| **Download** | Operation | | |
| **Other tests:** | | | |

## *Certificate of Calibration*

This is to certify that the above instrument has been calibrated to the following specifications:

| Sensor | Serial no | Standard Solutions | Certified | Solution Bottle Number | Instrument Reading |
|---|---|---|---|---|---|
| 2. pH 7.00 | | pH 7.00 | | 386467 | pH 7.00 |
| 3. pH 4.00 | | pH 4.00 | | 394432 | pH 4.00 |
| 4. mV | | 234.72mV | | 390802/387761 | 234.6mV |
| 5. EC | | 2.76mS | | 385041 | 2.763mS |
| 6. Temp | | 22.4°C | | MultiTherm | 22.2°C |
| 7. DO | | 0.0% | | 379624 | -0.1% |

***Calibrated by:*** Lauren Soutar

***Calibration date:*** 25/10/2022

***Next calibration due:*** 24/11/2022

# Appendix H Groundwater Monitoring Field Documents

# Groundwater Sampling Form

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | ED PARK | **PROJECT NO:** | 63325 |
| **SAMPLING DATES:** | 28/10/22 | **SAMPLERS:** | M CHAPMAN |
| **TYPE OF INVESTIGATION:** | GME + SLEEVES | **PROJECT MANAGER:** | M DELANEY |
| **WELL ID:** | MWF3 | **WEATHER:** | SUNNY |

| | | | |
|---|---|---|---|
| **Casing Diameter (mm):** | 50. | **Depth to NAPL (mBTOC):** | — |
| **Well Completion:** | Flush Mount / (Monument) | **Depth to SWL (mBTOC):** | 6.937 |
| **Well Cap Type:** | Locking Cap / (PVC) / Other | **NAPL Thickness (m):** | — |
| **Well Condition:** | (Good) / Compromised | **Depth to EoH (mbtoc):** | 10.775 |
| **Calculated Well Volume (L):** | 7.522 | **Water Column Depth (m):** | 3.838 |
| **Sampling Method:** | + Hydra Sleeve. | **NAPL Visually Verified?** | — |
| Purge Volume | 4 Casings Vol. (L) | | |
| (Low Flow) | Pump Submersion depth (mBTOC) | | |

| TIME | VOLUME PURGED L | DSSOLVED OXYGEN ☐ % ☒ mgL/ppm | TEMP °C | pH pH units | EC µS/cm | ORP mV | Comments Inc SWL for low flow (mBTOC) |
|---|---|---|---|---|---|---|---|
| 9:00AM | 0.5 | 0.97 | 18.7 | 6.91 | 5290 | 54.6 | 6.861 |
| 9:03AM | 1.0 | 0.52 | 18.6 | 7.11 | 5277 | 24.2 | 6.834 |
| 9:06AM | 1.5 | 0.32 | 18.6 | 7.21 | 5264 | -56.2 | 6.827 (faster recharge) |
| 9:09AM | 2.0 | 0.27 | 18.5 | 7.24 | 5304 | -58.4 | 6.819 |
| 9:12AM | 2.5 | 0.26 | 18.5 | 7.25 | 5316 | -60.2 | 6.810 |
| 9:15AM | 3.0 | 0.25 | 18.5 | 7.25 | 5327 | -61.7 | 6.806 |
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| Acceptable Variations* | | +/-10% | +/- 0.2 °C | +/-0.05 pH | +/-3% | +/-10mV | Results Acceptable: (YES) / NO |

*LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)*

*PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m*

| | | | |
|---|---|---|---|
| **Clarity:** | clear | **Sheen:** | YES / (NO) |
| **Colour:** | clear | **Odour:** | YES / (NO) |


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| | | | |
|---|---|---|---|
| **Primary sample ID:** | MWF3 | **No.** | **Container / Preservative** |
| **Duplicate sample:** | YES / NO ID: | | |
| **Triplicate sample:** | YES / NO ID: | | |
| **Rinsate sample:** | YES / NO ID: | | |
| **Sample on ice:** | YES / NO | | |
| **Field Filter Method:** | 0.45µm filter / not filtered | | |
| **Water Quality Metre:** | YSI | | |
| **Gauging Equipment:** | IP | | |
| **Pump Type:** | Per. | | |
| **NOTES:** | | | |

*Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)*

| **Casing Diameter** | **25mm** | **50mm** | **100mm** | **150mm** | **300mm** |
|---|---|---|---|---|---|
| **Conversion Factor** | **0.98** | **1.96** | **7.85** | **49.1** | **196.3** |

*Volume of water in well (L) = ∏ * radius of gravel pack (m)2 * height of water column (m)*

**SA EPA Guidelines (June 2007) as referenced in NEPM*


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# Groundwater Sampling Form

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | FORTRK | **PROJECT NO:** | 63325. |
| **SAMPLING DATES:** | 28/10/22 | **SAMPLERS:** | M CHAPMAN |
| **TYPE OF INVESTIGATION:** | GME-SCEEUFS | **PROJECT MANAGER:** | M DELANDRO |
| **WELL ID:** | MW01 | **WEATHER:** | SUNNY |

| | | | |
|---|---|---|---|
| **Casing Diameter (mm):** | 50. | **Depth to NAPL (mBTOC):** | — |
| **Well Completion:** | Flush Mount / Monument | **Depth to SWL (mBTOC):** | 7.823 |
| **Well Cap Type:** | Locking Cap / PVC / Other | **NAPL Thickness (m):** | — |
| **Well Condition:** | Good / Compromised | **Depth to EoH (mbtoc):** | 13.168 |
| **Calculated Well Volume (L):** | 10.476 | **Water Column Depth (m):** | 5.345 |
| **Sampling Method:** | + Hydra sleeve | **NAPL Visually Verified?** | — |
| Purge Volume 4 Casings Vol. (L) | | | |
| Low Flow Pump Submersion depth (mBTOC) | | | |

| TIME | VOLUME PURGED L | DSSOLVED OXYGEN ☐ % ☒ mgL/ppm | TEMP °C | pH pH units | EC _S/cm | ORP mV | Comments Inc SWL for low flow (mBTOC) |
|---|---|---|---|---|---|---|---|
| 11:11AM | 0.5 | 0.87 | 19.2 | 6.45 | 11574 | 49.6 | 7.739 |
| 11:14AM | 1.0 | 0.42 | 19.0 | 6.40 | 11691 | 21.4 | 7.721 |
| 11:17AM | 1.5 | 0.39 | 18.9 | 6.38 | 11709 | -19.8 | 7.706 |
| 11:20AM | 2.0 | 0.37 | 18.8 | 6.37 | 11712 | -26.4 | 7.700 |
| 11:23AM | 2.5 | 0.35 | 18.8 | 6.36 | 11716 | -28.1 | 7.693. |
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| | | | | | | | |
| Acceptable Variations* | | +/-10% | +/- 0.2 °C | +/-0.05 pH | +/-3% | +/-10mV | Results Acceptable: YES / NO |

*LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)*

*PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m*

| | | | |
|---|---|---|---|
| **Clarity:** | murky | **Sheen:** | YES / NO |
| **Colour:** | brown / light brown | **Odour:** | YES / NO |


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| | | | |
|---|---|---|---|
| **Primary sample ID:** | MW01 | **No.** | **Container / Preservative** |
| **Duplicate sample:** | YES / NO ID: | | QC20221028 |
| **Triplicate sample:** | YES / NO ID: | | QA20221018 |
| **Rinsate sample:** | YES / NO ID: | | |
| **Sample on ice:** | YES / NO | | |
| **Field Filter Method:** | 0.45µm filter / not filtered | | metals |
| **Water Quality Metre:** | YSI | | |
| **Gauging Equipment:** | IP | | |
| **Pump Type:** | Peri | | |
| **NOTES:** | | | |

*Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)*

| **Casing Diameter** | **25mm** | **50mm** | **100mm** | **150mm** | **300mm** |
|---|---|---|---|---|---|
| **Conversion Factor** | **0.98** | **1.96** | **7.85** | **49.1** | **196.3** |

*Volume of water in well (L) = ∏ * radius of gravel pack (m)2 * height of water column (m)*

**SA EPA Guidelines (June 2007) as referenced in NEPM*


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# Groundwater Sampling Form

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | EDPARK | **PROJECT NO:** | 63325. |
| **SAMPLING DATES:** | 28/10/22 | **SAMPLERS:** | M CHAPMAN |
| **TYPE OF INVESTIGATION:** | GME + SLEEVE | **PROJECT MANAGER:** | M DELANDRO |
| **WELL ID:** | MW02 | **WEATHER:** | SUNNY |

| | | | |
|---|---|---|---|
| **Casing Diameter (mm):** | 50 | **Depth to NAPL (mBTOC):** | — |
| **Well Completion:** | Flush Mount / Monument | **Depth to SWL (mBTOC):** | 9.784 |
| **Well Cap Type:** | Locking Cap / PVC / Other | **NAPL Thickness (m):** | — |
| **Well Condition:** | Good / Compromised | **Depth to EoH (mbtoc):** | 12.679 |
| **Calculated Well Volume (L):** | 5.674 | **Water Column Depth (m):** | 2.895 |
| **Sampling Method:** | + Hydra Sleeves. | **NAPL Visually Verified?** | — |
| Purge Volume | 4 Casings Vol. (L) | | |
| Low Flow | Pump Submersion depth (mBTOC) | | |

| TIME | VOLUME PURGED L | DSSOLVED OXYGEN ☐ % ☒ mgL/ppm | TEMP °C | pH pH units | EC µS/cm | ORP mV | Comments Inc SWL for low flow (mBTOC) |
|---|---|---|---|---|---|---|---|
| 12:20PM | 0.5 | 0.43 | 19.3 | 7.43 | 8736 | -24.8 | 9.683 |
| 12:23PM | 1.0 | 0.32 | 19.1 | 7.40 | 8759 | -35.7 | 9.651 |
| 12:26PM | 1.5 | 0.29 | 19.1 | 7.39 | 8768 | -43.1 | 9.642 |
| 12:29PM | 2.0 | 0.28 | 19.1 | 7.38 | 8776 | -46.4 | 9.636 |
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| | | | | | | | |
| Acceptable Variations* | | +/-10% | +/- 0.2 °C | +/-0.05 pH | +/-3% | +/-10mV | Results Acceptable: YES / NO |

*LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)*

*PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m*

| | | | |
|---|---|---|---|
| **Clarity:** | murky | **Sheen:** | YES / NO |
| **Colour:** | brown | **Odour:** | YES / NO |


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| | | | |
|---|---|---|---|
| **Primary sample ID:** | MW02 | **No.** | **Container / Preservative** |
| **Duplicate sample:** | YES / NO ID: | | |
| **Triplicate sample:** | YES / NO ID: | | |
| **Rinsate sample:** | YES / NO ID: | | |
| **Sample on ice:** | YES / NO | | |
| **Field Filter Method:** | 0.45µm filter / not filtered | | metals |
| **Water Quality Metre:** | YSI | | |
| **Gauging Equipment:** | IP | | |
| **Pump Type:** | Peri. | | |
| **NOTES:** | | | |

*Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)*

| **Casing Diameter** | **25mm** | **50mm** | **100mm** | **150mm** | **300mm** |
|---|---|---|---|---|---|
| **Conversion Factor** | **0.98** | **1.96** | **7.85** | **49.1** | **196.3** |

*Volume of water in well (L) = ∏ * radius of gravel pack (m)2 * height of water column (m)*

**SA EPA Guidelines (June 2007) as referenced in NEPM*


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# Groundwater Sampling Form

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | & EDP Road | **PROJECT NO:** | 63325 |
| **SAMPLING DATES:** | 28/10/22 | **SAMPLERS:** | M CLAPHAM |
| **TYPE OF INVESTIGATION:** | GME + SLEEVES | **PROJECT MANAGER:** | M. DELANEY |
| **WELL ID:** | MW03 | **WEATHER:** | SUNNY |

| | | | |
|---|---|---|---|
| **Casing Diameter (mm):** | 50mm | **Depth to NAPL (mBTOC):** | – |
| **Well Completion:** | Flush Mount / Monument | **Depth to SWL (mBTOC):** | 6.796 |
| **Well Cap Type:** | Locking Cap / PVC / Other | **NAPL Thickness (m):** | – |
| **Well Condition:** | Good / Compromised | **Depth to EoH (mbtoc):** | 11.263 |
| **Calculated Well Volume (L):** | 8.755 | **Water Column Depth (m):** | 4.467 |
| **Sampling Method:** | + Hydra Sleeves | **NAPL Visually Verified?** | – |
| Purge Volume | 4 Casings Vol. (L) | | |
| Low Flow | Pump Submersion depth (mBTOC) | | |

| TIME | VOLUME PURGED L | DSSOLVED OXYGEN ☐ % ☒ mgL/ppm | TEMP °C | pH pH units | EC µS/cm | ORP mV | Comments Inc SWL for low flow (mBTOC) |
|---|---|---|---|---|---|---|---|
| 9:54AM | 0.5 | 0.64 | 19.3 | 4.62 | 12409 | 21.6 | 6.673 |
| 9:57AM | 1.0 | 0.48 | 19.2 | 5.06 | 12426 | -24.8 | 6.654 |
| 10:00AM | 1.5 | 0.40 | 19.1 | 5.12 | 12431 | -39.4 | 6.641 (faster recharge), |
| 10:03AM | 2.0 | 0.31 | 19.0 | 5.14 | 12436 | -44.4 | 6.633 |
| 10:06AM | 2.5 | 0.28 | 19.0 | 5.15 | 12439 | -47.6 | 6.629 |
| 10:09AM | 3.0 | 0.27 | 19.1 | 5.16 | 12444 | -51.4 | 6.621 |
| | | | | | | | |
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| | | | | | | | |
| Acceptable Variations* | | +/-10% | +/- 0.2 °C | +/-0.05 pH | +/-3% | +/-10mV | Results Acceptable: YES / NO |

*LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)*

*PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m*

| | | | |
|---|---|---|---|
| **Clarity:** | clear | **Sheen:** | YES / NO |
| **Colour:** | clear | **Odour:** | YES / NO |


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| | | | |
|---|---|---|---|
| **Primary sample ID:** | MW03 | **No.** | **Container / Preservative** |
| **Duplicate sample:** | YES / NO ID: | | |
| **Triplicate sample:** | YES / NO ID: | | |
| **Rinsate sample:** | YES / NO ID: | | |
| **Sample on ice:** | YES / NO | | |
| **Field Filter Method:** | 0.45µm filter / not filtered | | metals |
| **Water Quality Metre:** | YSI | | |
| **Gauging Equipment:** | IP | | |
| **Pump Type:** | Peri | | |
| **NOTES:** | | | |

*Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)*

| **Casing Diameter** | **25mm** | **50mm** | **100mm** | **150mm** | **300mm** |
|---|---|---|---|---|---|
| **Conversion Factor** | **0.98** | **1.96** | **7.85** | **49.1** | **196.3** |

*Volume of water in well (L) = ∏ * radius of gravel pack (m)2 * height of water column (m)*

**SA EPA Guidelines (June 2007) as referenced in NEPM*


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# Appendix I Summary Results Tables

**Table A: Soil Analytical Results**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | Metals & Metalloids | | | | | | | | TPHs (NEPC 1999) | | | | | TRHs (NEPC 2013) | | | | | | | BTEXN | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Arsenic | Cadmium | Chromium (III+VI) | Copper | Lead | Mercury | Nickel | Zinc | C6-C9 Fraction | C10-C14 Fraction | C15-C28 Fraction | C29-C36 Fraction | C10-C36 Fraction (Sum of Total) | C6-C10 | C10-C16 | C16-C34 | C34-C40 | C10-C40 (Sum of total) | F1 (C6-C10 minus BTEX) | F2 (C10-C16 less Naphthalene) | Benzene | Toluene | Ethylbenzene | Xylene (o) | Xylene (m & p) | Xylene Total | Naphthalene_VOC |
| | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | 2 | 0.4 | 5 | 5 | 5 | 0.1 | 5 | 5 | 20 | 20 | 50 | 50 | 50 | 20 | 50 | 100 | 100 | 100 | 20 | 50 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.5 |
| NEPC 2013 EIL, Site Specific | 100 | | 520 | 220 | 1100 | | 240 | 570 | | | | | | | | | | | | | | | | | | | 170 |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | 300 | 90 | 300 | 17000 | 600 | 80 | 1200 | 30000 | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | | | | | | NL | NL | NL | NL | NL | | | NL | NL |
| 1-2m | | | | | | | | | | | | | | | | | | | NL | NL | NL | NL | NL | | | NL | NL |
| 2-4m | | | | | | | | | | | | | | | | | | | NL | NL | NL | NL | NL | | | NL | NL |
| >4m | | | | | | | | | | | | | | | | | | | NL | NL | NL | NL | NL | | | NL | NL |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | | | | | | | | 1300 | 5600 | | 180 | 120 | 65 | 105 | 125 | | | 45 | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | 800 | 1000 | 3500 | 10000 | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Field_ID | Sampled_Date_Time | Lab_Report_Number | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG01_0_0.1 | 17/10/2022 | 933769 | 7.7 | <0.4 | 27 | 16 | 31 | <0.1 | 12 | 36 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| DG02_0_0.1 | 17/10/2022 | 933769 | 6.7 | <0.4 | 24 | 11 | 21 | <0.1 | 7.5 | 25 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| DG03_0_0.1 | 17/10/2022 | 933769 | 7.2 | <0.4 | 24 | 8.1 | 16 | <0.1 | <5 | 26 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| DG04_0.2_0.3 | 17/10/2022 | 933769 | 13 | <0.4 | 20 | 31 | 12 | <0.1 | 8 | 33 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| DG04_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_0_0.1 | 17/10/2022 | 933769 | 8 | <0.4 | 15 | 11 | 1600 | <0.1 | <5 | 81 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| DG05-0-0.1 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG06-0.2-0.3 | 18/10/2022 | 938601 | 13 | <0.4 | 25 | 21 | 12 | <0.1 | 8.4 | 34 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| DG06-0-0.1 | 18/10/2022 | 938601 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG07_0_0.1 | 17/10/2022 | 933769 | 6.6 | 1.7 | 21 | 49 | 120 | <0.1 | 8.4 | 130 | <20 | <20 | 61 | 100 | 161 | <20 | <50 | 130 | <100 | 130 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| DG07-0.2-0.3 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FT01_0.2_0.3 | 17/10/2022 | 933769 | 10 | <0.4 | 29 | 51 | 50 | <0.1 | 21 | 110 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| FT01-0-0.1 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FT02_0.2_0.3 | 17/10/2022 | 933769 | 13 | <0.4 | 33 | 9.9 | 16 | <0.1 | 11 | 23 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| FT02-0.2-0.3 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FT03_0_0.1 | 17/10/2022 | 933769 | 9.6 | <0.4 | 16 | 14 | 130 | <0.1 | 5.8 | 120 | <20 | 21 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| HD01_0.4_0.5 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HD02_0.8_0.9 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF01_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF01_0_0.1 | 17/10/2022 | 933769 | 6.7 | <0.4 | 22 | <5 | 17 | <0.1 | <5 | 13 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF02_0_0.1 | 17/10/2022 | 933769 | 11 | <0.4 | 29 | <5 | 20 | <0.1 | <5 | 13 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF03_0_0.1 | 17/10/2022 | 933769 | 10 | <0.4 | 31 | <5 | 18 | <0.1 | <5 | 12 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF04_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF04_0_0.1 | 17/10/2022 | 933769 | 7.7 | <0.4 | 22 | 11 | 19 | <0.1 | 7 | 31 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF05_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF05_0_0.1 | 17/10/2022 | 933769 | 7.1 | <0.4 | 17 | 11 | 28 | <0.1 | 6.7 | 63 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF06_0_0.1 | 17/10/2022 | 933769 | 14 | <0.4 | 19 | 15 | 19 | <0.1 | 10 | 21 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF07_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF07_0_0.1 | 17/10/2022 | 933769 | 3.7 | <0.4 | 13 | 48 | 5.2 | <0.1 | 56 | 43 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF08_0_0.1 | 17/10/2022 | 933769 | 6.3 | <0.4 | 17 | 42 | 6.6 | <0.1 | 34 | 34 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF09_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| PF09_0_0.1 | 17/10/2022 | 933769 | 14 | <0.4 | 20 | 18 | 28 | <0.1 | 13 | 35 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| QA20221017-01 | 17/10/2022 | 308571 | 4 | <0.4 | 10 | 15 | 28 | <0.1 | 6 | 24 | <25 | <50 | <100 | <100 | <50 | <25 | <50 | <100 | <100 | <50 | <25 | <50 | <0.2 | <0.5 | <1 | <1 | <2 | <1 | <1 |
| QA20221017-02 | 17/10/2022 | 308571 | 7 | <0.4 | 24 | 8 | 20 | <0.1 | 7 | 19 | <25 | <50 | <100 | <100 | <50 | <25 | <50 | <100 | <100 | <50 | <25 | <50 | <0.2 | <0.5 | <1 | <1 | <2 | <1 | <1 |
| QC20221017_01 | 17/10/2022 | 933769 | 2.5 | <0.4 | <5 | <5 | 6.8 | <0.1 | <5 | 26 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| QC20221017_02 | 17/10/2022 | 933769 | 6.1 | <0.4 | 20 | 12 | 24 | <0.1 | 8.6 | 27 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| QC202211017-01 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| QC202211017-02 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SP01_0.2_0.3 | 17/10/2022 | 933769 | 9.8 | <0.4 | 8.7 | 54 | 15 | <0.1 | 17 | 81 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| SP02_0.2_0.3 | 17/10/2022 | 933769 | 4.7 | <0.4 | 14 | 15 | 16 | <0.1 | 12 | 42 | <20 | 46 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| SP03_0.2_0.3 | 17/10/2022 | 933769 | 7.9 | <0.4 | 18 | 24 | 27 | <0.1 | 8.4 | 64 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| SP04_0.2_0.3 | 17/10/2022 | 933769 | 10 | <0.4 | 10 | 39 | 22 | <0.1 | 8.5 | 63 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| UST01_0.2_0.3 | 17/10/2022 | 933769 | 18 | <0.4 | 17 | 23 | 15 | <0.1 | 12 | 38 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |
| UST01_0.4_0.5 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 |

**Table A: Soil Analytical Results**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | | | PAH | | | | | | | | | | | | | | | | | | | | | Organochlorine Pesticides | | | | | | | | | | | | | | | | | | |

**Table A: Soil Analytical Results**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | Polychlorinated Biphenyls | | | | | | | | PFAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Arochlor 1016 | Arochlor 1221 | Arochlor 1232 | Arochlor 1242 | Arochlor 1248 | Arochlor 1254 | Arochlor 1260 | PCBs (Sum of total) | Perfluorobutanoic acid (PFBA) | Perfluoropentanoic acid (PFPeA) | Perfluorohexanoic acid (PFHxA) | Perfluoroheptanoic acid (PFHpA) | Perfluorooctanoic acid (PFOA) | Perfluorononanoic acid (PFNA) | Perfluorodecanoic acid (PFDA) | Perfluoroundecanoic acid (PFUnDA) | Perfluorododecanoic acid (PFDoDA) | Perfluorotridecanoic acid (PFTrDA) | Perfluorotetradecanoic acid (PFTeDA) | Perfluorooctane sulfonamide (FOSA) | N-Methyl perfluorooctane sulfonamide (NMeFOSA) | N-Ethyl perfluorooctane sulfonamide (NEtFOSA) | N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE) | N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE) | N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA) | N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | Perfluoropropanesulfonic acid (PFPrS) | Perfluorobutanesulfonic acid (PFBS) | Perfluoropentanesulfonic acid (PFPeS) | Perfluorohexanesulfonic acid (PFHxS) | Perfluoroheptane sulfonic acid (PFHpS) | Perfluorooctanesulfonic acid (PFOS) | Perfluorononanesulfonic acid (PFNS) | Perfluorodecanesulfonic acid (PFDS) | 1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTSA) | 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTSA) | 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTSA) | 1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2 FTSA) | Sum of PFHxS and PFOS | Sum of enHealth PFAS (PFHxS + PFDS + PFOA)* | Sum of US EPA PFAS (PFOS + PFOA)* | Sum of WA DWER PFAS (n=10)* | Sum of PFAS |
| | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/KG | mg/kg |
| EQL | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.01 | 0.01 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.01 | 0.05 |
| NEPC 2013 EIL, Site Specific | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-2m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-4m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| >4m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | | | | | | | | | 10 | | | | | | | | | | | | | | | | | 1 | | 1 | | | | | | | | 1 | | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | | | | | | | | | 10 | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| **Field_ID** | **Sampled_Date_Time** | **Lab_Report_Number** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DG01_0_0.1 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| DG02_0_0.1 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| DG03_0_0.1 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| DG04_0.2_0.3 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG04_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| DG05_0_0.1 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| DG05-0-0.1 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG06-0.2-0.3 | 18/10/2022 | 938601 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG06-0-0.1 | 18/10/2022 | 938601 | - | - | - | - | - | - | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| DG07_0_0.1 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| DG07-0.2-0.3 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FT01_0.2_0.3 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FT01-0-0.1 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FT02_0.2_0.3 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FT02-0.2-0.3 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FT03_0_0.1 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| HD01_0.4_0.5 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| HD02_0.8_0.9 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| PF01_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF01_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF02_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF03_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF04_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF04_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF05_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF05_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF06_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF07_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF07_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF08_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF09_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PF09_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| QA20221017-01 | 17/10/2022 | 308571 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.0002 | <0.0002 | <0.0001 | <0.0001 | 0.0002 | <0.0001 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.005 | <0.0002 | <0.0002 | - | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0006 | - | <0.0002 | <0.0001 | <0.0001 | <0.0002 | <0.0002 | 0.0006 | - | 0.0009 | - | 0.0009 |
| QA20221017-02 | 17/10/2022 | 308571 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.0002 | <0.0002 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.005 | <0.0002 | <0.0002 | - | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0001 | - | <0.0002 | <0.0001 | <0.0001 | <0.0002 | <0.0002 | 0.0001 | - | 0.0001 | - | 0.0001 |
| QC20221017_01 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| QC20221017_02 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| QC202211017-01 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| QC202211017-02 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SP01_0.2_0.3 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| SP02_0.2_0.3 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| SP03_0.2_0.3 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| SP04_0.2_0.3 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| UST01_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| UST01_0.4_0.5 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Table A: Soil Analytical Results**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | Chlorinated Benzenes | Ionic Balance | | | PA VIC - IWRG62 | | Particle Size | Asbestos - Eurofins | | | | | | | Asbestos - Envirolab | | | | Moisture Content | Other | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hexachlorobenzene | CEC | Conductivity (1:5 aqueous extract) | pH (aqueous extract) | Organochlorine Pesticides EPAVic | Other Organochlorine Pesticides EPAVic | % Clay* | Approximate Sample Mass | Asbestos from ACM in Soil | Asbestos from FA & AF in Soil | Organic Fibres - Comment | Respirable Fibres - Comment | Synthetic Fibres - Comment | Asbestos Reported Result | Asbestos ID in Soil | Total Asbestos | Asbestos (ACM >7mm) Estimation | Asbestos in soil (<2mm AF/FA) [%w/w] | Moisture Content | Moisture Content (dried @ 103°C) | TOC |
| | mg/kg | MEQ/100G | US/CM | pH Units | mg/kg | mg/kg | % | g | % (w/w) | % (w/w) | Comment | Comment | Comment | Comment | g/kg | g/kg | % (w/w) | % (w/w) | % | % | % |
| EQL | 0.05 | 0.05 | 10 | 0.1 | 0.1 | 0.1 | 1 | | | | | | | | | 0.1 | 0.01 | 0 | 0.1 | 1 | 0.1 |
| NEPC 2013 EIL, Site Specific | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | 10 | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | | | | | | | | |
| 1-2m | | | | | | | | | | | | | | | | | | | | | |
| 2-4m | | | | | | | | | | | | | | | | | | | | | |
| >4m | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | | 0.02 | 0.001 | | | | | | | 0.02 | 0.001 | | | |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | | | | | | | | | | | | | | | | | |
| **Field_ID** | **Sampled_Date_Time** | **Lab_Report_Number** | | | | | | | | | | | | | | | | | | | |
| DG01_0_0.1 | 17/10/2022 | 933769 | <0.05 | 11 | <10 | 8.1 | <0.1 | <0.1 | 5.1 | 584 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 15 | 5.3 |
| DG02_0_0.1 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | 519 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 15 | - |
| DG03_0_0.1 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | 582 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 12 | - |
| DG04_0.2_0.3 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 22 | - |
| DG04_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | 694 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 9.9 | - |
| DG05_0_0.1 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 14 | - |
| DG05-0-0.1 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | 513 | 0 | 0 | Nil | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | - | - |
| DG06-0.2-0.3 | 18/10/2022 | 938601 | <0.05 | - | - | - | <0.1 | <0.1 | - | 280 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 24 | - |
| DG06-0-0.1 | 18/10/2022 | 938601 | - | - | - | - | - | - | - | 587 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 20 | - |
| DG07_0_0.1 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 14 | - |
| DG07-0.2-0.3 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | 354 | 0 | 0 | Nil | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | - | - |
| FT01_0.2_0.3 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 14 | - |
| FT01-0-0.1 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | 472 | 0 | 0 | Nil | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | - | - |
| FT02_0.2_0.3 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 9.7 | - |
| FT02-0.2-0.3 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | 676 | 0 | 0 | Organic fibres detected | 0 | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | - | - |
| FT03_0_0.1 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | 457 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 18 | - |
| HD01_0.4_0.5 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 17 | - |
| HD02_0.8_0.9 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 18 | - |
| PF01_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 24 | - |
| PF01_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | 511 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 14 | - |
| PF02_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | 395 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 11 | - |
| PF03_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | 542 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 16 | - |
| PF04_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 22 | - |
| PF04_0_0.1 | 17/10/2022 | 933769 | - | 37 | 35 | 8.3 | - | - | 11 | 606 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 19 | 2.7 |
| PF05_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 23 | - |
| PF05_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | 693 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 9.8 | - |
| PF06_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | 773 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 11 | - |
| PF07_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 20 | - |
| PF07_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | 648 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 6.5 | - |
| PF08_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | 801 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 5.2 | - |
| PF09_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 23 | - |
| PF09_0_0.1 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | 648 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 8.9 | - |
| QA20221017-01 | 17/10/2022 | 308571 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | <0.1 | <0.01 | <0.001 - 0#% | 15 | - | - |
| QA20221017-02 | 17/10/2022 | 308571 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | <0.1 | <0.01 | <0.001 - 0#% | 16 | - | - |
| QC20221017_01 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 7.5 | - |
| QC20221017_02 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | 15 | - |
| QC202211017-01 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | 529 | 0 | 0 | Nil | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | - | - |
| QC202211017-02 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | 507 | 0 | 0 | Nil | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | - | - |
| SP01_0.2_0.3 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | 561 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 14 | - |
| SP02_0.2_0.3 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | 576 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 11 | - |
| SP03_0.2_0.3 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | 618 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 15 | - |
| SP04_0.2_0.3 | 17/10/2022 | 933769 | <0.05 | - | - | - | <0.1 | <0.1 | - | 710 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 12 | - |
| UST01_0.2_0.3 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | 417 | 0 | 0 | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - | - | - | - | - | 22 | - |
| UST01_0.4_0.5 | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 18 | - |

**Table B: Groundwater Analytical Summary**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | | |

**Table B: Groundwater Analytical Summary**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | PFAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Ionic Balance | | Inorganics | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Perfluorobutanoic acid (PFBA) | Perfluoropentanoic acid (PFPeA) | Perfluorohexanoic acid (PFHxA) | Perfluoroheptanoic acid (PFHpA) | Perfluorooctanoic acid (PFOA) | Perfluorononanoic acid (PFNA) | Perfluorodecanoic acid (PFDA) | Perfluoroundecanoic acid (PFUnDA) | Perfluorododecanoic acid (PFDoDA) | Perfluorotridecanoic acid (PFTrDA) | Perfluorotetradecanoic acid (PFTeDA) | Perfluorooctane sulfonamide (FOSA) | N-Methyl perfluorooctane sulfonamide (NMeFOSA) | N-Ethyl perfluorooctane sulfonamide (NEtFOSA) | N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE) | N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE) | N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA) | N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | Perfluoropropanesulfonic acid (PFPrS) | Perfluorobutanesulfonic acid (PFBS) | Perfluoropentanesulfonic acid (PFPeS) | Perfluorohexanesulfonic acid (PFHxS) | Perfluoroheptane sulfonic acid (PFHpS) | Perfluorooctanesulfonic acid (PFOS) | Perfluorononanesulfonic acid (PFNS) | Perfluorodecanesulfonic acid (PFDS) | 1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTSA) | 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTSA) | 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTSA) | 1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2 FTSA) | Sum of PFHxS and PFOS | Sum of enHealth PFAS (PFHxS + PFOS + PFOA)* | Sum of US EPA PFAS (PFOS + PFOA)* | Sum of WA DWER PFAS (n=10) * | Sum of PFAS | Electrical Conductivity (lab) | pH (Lab) | Electrical Conductivity (Non Compensated) | TDS |
| | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | UG/L | µg/L | µS/cm | pH Units | µS/cm | mg/L |
| EQL | 0.005 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.005 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.005 | 0.005 | 10 | 0.1 | 1 | 10 |
| ADWG (2011) Health x 10 (Recreational) - Updated March-2021 | | | | | 5.6 | | | | | | | | | | | | | | | | | | 0.7 | | 0.7 | | | | | | | | 0.7 | | | | | | |
| ANZG (2018) Freshwater 95% toxicant DGVs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(4) Res HSL A/B GW for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-4m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-8m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| >8m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 5 Freshwater 95% | | | | | 220 | | | | | | | | | | | | | | | | | | | 0.13 | | | | | | | | | | | | | | | | |

| Field_ID | Location_Code | Well | Sampled_Date_Time | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW01 | MW01 | MW01 | 28/10/2022 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.007 | 0.017 | 0.006 | 0.007 | <0.001 | 0.003 | <0.001 | <0.001 | <0.001 | <0.005 | <0.001 | <0.001 | 0.01 | 0.01 | 0.003 | 0.027 | 0.04 | 6500 | 7 | - | 4000 |
| QA20221028 | QA20221028 | | 28/10/2022 | <0.05 | <0.002 | <0.001 | <0.001 | <0.001 | <0.001 | <0.002 | <0.002 | <0.005 | <0.01 | <0.05 | <0.01 | <0.05 | <0.1 | <0.05 | <0.5 | <0.003 | <0.003 | - | 0.018 | 0.008 | 0.009 | <0.001 | <0.001 | 0.009 | - | <0.002 | <0.001 | <0.001 | <0.002 | <0.002 | 0.009 | - | <0.001 | - | 0.034 | - | 7.1 | 7900 | 4700 |
| QC20221028 | MW01 | MW01 | 28/10/2022 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.007 | 0.016 | 0.005 | 0.007 | <0.001 | 0.002 | <0.001 | <0.001 | <0.001 | <0.005 | <0.001 | <0.001 | 0.009 | 0.009 | 0.002 | 0.025 | 0.037 | 6200 | 7 | - | 4300 |
| MW02 | MW02 | MW02 | 28/10/2022 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.002 | <0.001 | <0.001 | <0.001 | <0.005 | <0.001 | <0.001 | 0.002 | 0.002 | 0.002 | <0.005 | <0.005 | 7100 | 7.2 | - | 4600 |
| MW03 | MW03 | MW03 | 28/10/2022 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | 0.002 | <0.001 | <0.001 | <0.001 | <0.005 | <0.001 | <0.001 | 0.002 | 0.002 | 0.002 | <0.005 | <0.005 | 11,000 | 7.3 | - | 6600 |
| MWF3 | MWF3 | MWF3 | 28/10/2022 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.007 | 0.018 | 0.007 | 0.011 | <0.001 | 0.002 | <0.001 | <0.001 | <0.001 | <0.005 | <0.001 | <0.001 | 0.013 | 0.013 | 0.002 | 0.031 | 0.045 | 4200 | 7.3 | - | 2800 |

**Table C: Asbestos Quantification Data**
Project Number: 63325
Project Name: Precinct 3 Edmondson Park Lot 3

| | | | | | | | | | | | Laboratory ACM Identification | | | | | Laboratory Asbestos Trace Analysis (NEPM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Approx. Size | Approx. Sample Mass | Asbestos Reported Result | Sample ID | Lab Report Number | Approx. Sample Mass | Asbestos from ACM in Soil | Asbestos from FA & AF in Soil | Asbestos Reported Result |
| Asbestos Quantification Results | | | | | | | | | | | | | | | | | | | |
| Location ID | Sample ID | Asbestos Identified in AQ | ACM ID | g | ACM g | % | % w/w | NEPC HSL-D (% w/w) | Result | Action | mm | g | Comment | | | g | %w/w 0.02 | %w/w 0.001 | Comment |
| DG01 | DG01_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | DG01_0_0.1 | 933769 | 584 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| DG02 | DG02_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | DG02_0_0.1 | 933769 | 519 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| DG03 | DG03_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | DG03_0_0.1 | 933769 | 582 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| DG04 | DG04_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | - |
| DG04 | DG04_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | | | | DG04_0_0.1 | 933769 | 694 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| DG05 | DG05_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | - |
| DG05 | DG05-0-0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | DG05-0-0.1 | 938609 | 513 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| DG06 | DG06-0.2-0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | DG06-0.2-0.3 | 938601 | 280 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| DG06 | DG06-0-0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | DG06-0-0.1 | 938601 | 587 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| DG07 | DG07_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | - |
| DG07 | DG07-0.2-0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | DG07-0.2-0.3 | 938609 | 354 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| FT01 | FT01_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | |
| FT01 | FT01-0-0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | FT01-0-0.1 | 938609 | 472 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| FT02 | FT02_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | |
| FT02 | FT02-0.2-0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | FT02-0.2-0.3 | 938609 | 676 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| FT03 | FT03_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | FT03_0_0.1 | 933769 | 457 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| HD01 | HD01_0.4_0.5 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | - |
| HD02 | HD02_0.8_0.9 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | - |
| PF01 | PF01_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | - |
| PF01 | PF01_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | PF01_0_0.1 | 933769 | 511 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| PF02 | PF02_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | PF02_0_0.1 | 933769 | 395 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| PF03 | PF03_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | PF03_0_0.1 | 933769 | 542 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| PF04 | PF04_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | - |
| PF04 | PF04_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | PF04_0_0.1 | 933769 | 606 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| PF05 | PF05_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | - |
| PF05 | PF05_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | PF05_0_0.1 | 933769 | 693 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| PF06 | PF06_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | PF06_0_0.1 | 933769 | 773 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| PF07 | PF07_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | - |
| PF07 | PF07_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | PF07_0_0.1 | 933769 | 648 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| PF08 | PF08_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | PF08_0_0.1 | 933769 | 801 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| PF09 | PF09_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | | | - | - | - | - |
| PF09 | PF09_0_0.1 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | PF09_0_0.1 | 933769 | 648 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| SP01 | SP01_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | SP01_0.2_0.3 | 933769 | 561 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| SP02 | SP02_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | SP02_0.2_0.3 | 933769 | 576 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| SP03 | SP03_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | SP03_0.2_0.3 | 933769 | 618 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| SP04 | SP04_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | SP04_0.2_0.3 | 933769 | 710 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| UST01 | UST01_0.2_0.3 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | UST01_0.2_0.3 | 933769 | 417 | 0 | 0 | No asbestos detected at the reporting limit of 0.001% w/w |
| UST01 | UST01_0.4_0.5 | No | - | 18600 | 0 | 0 | 0.000 | 0.01 | Below HSL | No Action Required | - | - | - | - | - | - | - | - | - |

**Table D: Soil Descriptions - Hydrant Lines**
Project Number: 63325
Project Name: Precinct 3 Edmondson Park Lot 3

| Date | Location Name | Depth Range | Material Type | Soil Description | PID (ppm) | Observations |
|---|---|---|---|---|---|---|
| 19/10/2022 | HD01 | 0.4-0.5 | Cast Iron | SAND, yellow/grey, loose, fine, damp, poorly graded | 2.9 | No asbesetos, staining or odours |
| 19/10/2022 | HD02 | 0.8-0.9 | Cast Iron | SAND, yellow/grey, loose, fine, damp, poorly graded | 3.4 | No asbesetos, staining or odours |

# Appendix J Chain of Custody and Laboratory Analytical Reports

1 of 4

EUROFINS.

# Chain of Custody

JBS&G

PROJECT NO.: 63325
PROJECT NAME: EDPARK_OP
DATE NEEDED BY:
LABORATORY BATCH NO.:
SAMPLERS: MASSIMO CHAPMAN
QC LEVEL: NEPM (2013)
PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ...mtelandro.....@jbsg.com.au; (3) ...mchapman.....@jbsg.com.au
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

EXCLUDING ASBESTOS BAGS

* ALL SAMPLES PRESERVED w/ ICE

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | Heavy metals | TRH | BTEX | PAHs | OCPs | PCBs | PFAS/PFOS | Asbestos | JB2A | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG01 - 0-0.1 | SOIL | 17/10/22 | | BAG + JAR + TUB | | | | | | | | X | | X | | X | |
| 0.2-0.3 | | | | | | | | | | | | | | | | | |
| 0.4-0.5 | | | | BAG + JAR | | | | | | | | | | | | | |
| SP02 - 0-0.1 | | | | BAG + JAR + TUB | | | | | | | | | | | | | |
| 0.2-0.3 | | | | | | | | | | | | X | | X | | X | |
| 0.4-0.5 | | | | BAG + JAR | | | | | | | | | | | | | |
| 0.9-1.0 | | | | | | | | | | | | | | | | | |
| SP04 - 0-0.1 | | | | BAG + JAR + TUB | | | | | | | | | | | | | |
| 0.2-0.3 | | | | | | | | | | | | X | | X | | X | |
| 0.4-0.5 | | | | BAG + JAR | | | | | | | | | | | | | |
| 0.9-1.0 | | | | | | | | | | | | | | | | | |
| SP03 - 0-0.1 | | | | BAG + JAR + TUB | | | | | | | | | | | | | |
| 0.2-0.3 | | | | | | | | | | | | X | | X | | X | |
| 0.4-0.5 | | | | BAG + JAR | | | | | | | | | | | | | |
| 0.9-1.0 | | | | | | | | | | | | | | | | | |
| SP01 - 0-0.1 | | | | BAG + JAR + TUB | | | | | | | | | | | | | |
| 0.2-0.3 | | | | | | | | | | | | X | | X | | X | |
| 0.4-0.5 | | | | BAG + JAR | | | | | | | | | | | | | |
| 0.9-1.0 | | | | | | | | | | | | | | | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: MASSIMO CHAPMAN DATE: 18/10/22 | CONSIGNMENT NOTE NO. | NAME: A Sinfay | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | DATE: 19/10/22 5:57pm | COOLER TEMP 15.6°C ..... deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other



# 933769

# Chain of Custody

JBS&G

| | |
|---|---|
| PROJECT NO.: 63325 | LABORATORY BATCH NO.: |
| PROJECT NAME: EDPARK_OP | SAMPLERS: MASSIMO CHAPMAN |
| DATE NEEDED BY: | QC LEVEL: NEPM (2013) |

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) mdelandro@jbsg.com.au; (3) mchapman@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | Heavy Metals | TPH | BTEX | PAHs | OCPs | PCBs | PFAS/PFOS | Asbestos | JB2A | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG02_0-0.1 | SOIL | 17/10/22 | | BAG + JAR + TUB | | | | | | | | X | | X | | X | |
| ↓ 0.2-0.3 | ↓ | ↓ | | ↓ | | | | | | | | | | | | | |
| DG03_0-0.1 | | | | | | | | | | | | X | | X | | X | |
| ↓ 0.2-0.3 | | | | | | | | | | | | | | | | | |
| PF01_0-0.1 | | | | | | X | X | X | X | | | | X | | | X | |
| ↓ 0.2-0.3 | | | | BAG + JAR | | | X | X | X | | | | | | | | |
| PF02_0-0.1 | | | | BAG + JAR + TUB | | X | X | X | X | | | | X | | | X | |
| ↓ 0.2-0.3 | | | | BAG + JAR | | | | | | | | | | | | | |
| PF03_0-0.1 | | | | BAG + JAR + TUB | | X | X | X | X | | | | X | | | X | |
| ↓ 0.2-0.3 | | | | BAG + JAR | | | | | | | | | | | | | |
| PF04_0-0.1 | | | | BAG + JAR + TUB | | X | X | X | X | | | | X | | | X | |
| ↓ 0.2-0.3 | | | | BAG + JAR | | | X | X | X | | | | | | | | |
| PF05_0-0.1 | | | | BAG + JAR + TUB | | X | X | X | X | | | | X | | | X | |
| ↓ 0.2-0.3 | | | | BAG + JAR | | | X | X | X | | | | | | | | |
| PF06_0-0.1 | | | | BAG + JAR + TUB | | X | X | X | X | | | | X | | | X | |
| ↓ 0.2-0.3 | | | | BAG + JAR | | | | | | | | | | | | | |
| PF07_0-0.1 | | | | BAG + JAR + TUB | | X | X | X | X | | | | X | | | X | |
| ↓ 0.2-0.3 | | | | BAG + JAR | | | X | X | X | | | | | | | | |
| PF07_0-0.1 | ↓ | ↓ | | BAG + JAR + TUB. | | X | X | X | X | | | | X | | | X | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: MASSIMO CHAPMAN DATE: 17/10/22 | CONSIGNMENT NOTE NO. | NAME: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | DATE: OF: | COOLER TEMP ..... deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other



#933765

# Chain of Custody

JBS&G

| | |
|---|---|
| PROJECT NO.: 63325 | LABORATORY BATCH NO.: |
| PROJECT NAME: EDPARK_OP | SAMPLERS: MASSIMO CHAPMAN. |
| DATE NEEDED BY: | QC LEVEL: NEPM (2013) |

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) mdelacruz@jbsg.com.au; (3) mchapman@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | Heavy metals | TRH | BTEX | PAHs | OCPs | PCBs | PFAS / PFOS | Asbestos | JBSA. | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PF09 - 0.2-0.3 | SOIL | 17/10/22 | | BAG + JAR | | | X | X | X | | | | | | | | |
| PF08 - 0-0.1 | | | | BAG + JAR + TUB | | X | X | X | X | | | | X | | | X | |
| ↓ 0.2-0.3 | | | | ↓ | | | | | | | | | | | | | |
| PF05 - ASH | | | | BAG + JAR | | | | | | | | | | | | | |
| PF06 | | | | | | | | | | | | | | | | | |
| PF07 | | | | | | | | | | | | | | | | | |
| PF08 | | | | | | | | | | | | | | | | | |
| PF09 | | | | | | | | | | | | | | | | | |
| FT03 - 0-0.1 | | | | BAG + JAR + TUB | | | | | | | | | | X | | X | |
| ↓ 0.2-0.3 | | | | BAG + JAR | | | | | | | | | | | | | |
| DG04 - 0-0.1 | | | | BAG + JAR + TUB | | | | | | | | X | | | | X | |
| ↓ 0.2-0.3 | | | | BAG + JAR | | | | | | | | | | X | | | |
| FT02 - 0-0.1 | | | | BAG + JAR + TB | | | | | | | | | | | | | |
| 0.2-0.3 | | | | ↓ | | | | | | | | | | X | | X | |
| 0.4-0.5 | | | | BAG + JAR | | | | | | | | | | | | | |
| ↓ 0.9-1.0 | | | | ↓ | | | | | | | | | | | | | |
| FT01 - 0-0.1 | | | | BAG + JAR + TUB | | | | | | | | | | | | | |
| ↓ 0.2-0.3 | | | | BAG + JAR | | | | | | | | | | X | | X | |
| DG05 - 0-0.1 | ↓ | ↓ | | BAG + JAR + TUB | | | | | | | | X | | X | | X | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: MASSIMO CHAPMAN DATE: 18/10/22 | CONSIGNMENT NOTE NO. | NAME: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | DATE: OF: | COOLER TEMP ..... deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other



#933769

# Chain of Custody

JBS&G

| | |
|---|---|
| PROJECT NO.: 63325 | LABORATORY BATCH NO.: |
| PROJECT NAME: EDPARK_OP | SAMPLERS: MASSIMO CHAPMAN |
| DATE NEEDED BY: | QC LEVEL: NEPM (2013) |

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) mdelandro@jbsg.com.au; (3) mchapman@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | Heavy metals | TPH | BTEX | PAHs | OCPs | PCBs | PFAS/PFOS | Asbestos | JB24. | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG05_0.2-0.3 | SOIL | 17/10/22 | | BAG + JAR | | | | | | | | | | | | | |
| UST01_0-0.1 | | 18/10/22 | | BAG + JAR + TUB | | | | | | | | | | | | | |
| 0.2-0.3 | | | | ↓ | | X | X | X | X | | | | X | | | | X |
| 0.4-0.5 | | | | BAG + JAR | | | X | X | X | | | | | | | | |
| 0.9-1.0 | | | | ↓ | | | | | | | | | | | | | |
| DG06_0-0.1 | | | | BAG + JAR + TUB | | | | | | | | X | | | | | X |
| 0.2-0.3 | | | | BAG + JAR | | | | | | | | | | X | | | |
| QC20221017_01 | | 17/10/22 | | BAG + JAR + TUB | | | | | | | | X | | X | | | X |
| QC20221017_02 | | | | ↓ | | | | | | | | X | | X | | | X |
| TS/TB | WATER | 19/10/22 | | VIAL | | | | | | | | | | | | | |
| BLANK | ↓ | ↓ | | BOTTLE. | | | | | | | | | | | | | |
| HD01_0.4-0.5 | SOIL | 19/10/22 | | TUB | | | | | | | | X | | | | | |
| HD02_0.8-0.9 | | | | BAG + JAR + TUB | | | | | | | | X | | | | | |
| DG07_0-0.1 | | | | BAG + JAR | | | | | | | | X | | X | | | X |
| 0.2-0.3 | | | | | | | | | | | | | | | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: MASSIMO DATE: 18/10/22 | CONSIGNMENT NOTE NO. | NAME: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G CHAPMAN | TRANSPORT CO. | DATE: OF: | COOLER TEMP ..... deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: OF: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

# Re: 63325 Edmondson Park Sample COC's

#AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
Thu 2022-10-20 11:41 AM
To: Andrew Black <AndrewBlack@eurofins.com>;Michelle Delandro <MDelandro@jbsg.com.au>
Cc: Massimo Chapman <mchapman@jbsg.com.au>
I've printed this out and included it with the COC.

Kind regards,
Adam Bateup

Sydney Sample Receipt

**Eurofins Environment Testing Australia Pty Ltd**

179 Magowar Rd
Girraween, NSW 2145
**Phone:** +61 2 9900 8421

**E-mail:** EnviroSampleNSW@eurofins.com
**Website:** www.eurofins.com.au/environmental-testing

---

**From:** Andrew Black <AndrewBlack@eurofins.com>
**Sent:** Thursday, October 20, 2022 11:16 AM
**To:** Michelle Delandro <MDelandro@jbsg.com.au>; #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
**Cc:** Massimo Chapman <mchapman@jbsg.com.au>
**Subject:** RE: 63325 Edmondson Park Sample COC's

**INFO**: INTERNAL EMAIL - Sent from your own Eurofins email domain.

Excellent, thanks Michelle

Sample Receipt Team- please add the below onto the job for COCs sent through yesterday afternoon thanks

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing Australia Pty Ltd**
Unit 7
7 Friesian Close
SANDGATE, NSW, 2304
AUSTRALIA
Phone: +61 2 9900 8490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website: eurofins.com.au/environmental-testing

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*For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnvirosampleNSW@eurofins.com or 02 9900 8421 (7am – 9pm).*
*For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).*

**From:** Michelle Delandro <MDelandro@jbsg.com.au>
**Sent:** Thursday, 20 October 2022 11:06 AM
**To:** Andrew Black <AndrewBlack@eurofins.com>; #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
**Cc:** Massimo Chapman <mchapman@jbsg.com.au>
**Subject:** RE: 63325 Edmondson Park Sample COC's

**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 Andrew,

Can I please add the following analysis?

DG01_0-0.1
PF04_0-0.1
DG06_0.2-0.3
DG10_0-0.1
DG11_0-0.1

For CEC, pH, % Clay, TOC

On standard TAT.

Regards,

Michelle

**Michelle Delandro| Senior Project Manager| JBS&G**
Gadigal Country | Level 1, 50 Margaret Street, Sydney, NSW
T: 02 8245 0300 | M: 0417 287 561| E: mdelandro@jbsg.com.au | W: jbsg.com.au | L: Conditions and Limitations

*Exceptional Outcomes*

**From:** Michelle Delandro
**Sent:** Wednesday, 19 October 2022 4:59 PM
**To:** AndrewBlack@eurofins.com; EnviroSampleNSW@eurofins.com
**Cc:** Massimo Chapman <mchapman@jbsg.com.au>
**Subject:** 63325 Edmondson Park Sample COC's

Hi Andrew,

#933740

Please see attached COCs for some samples that are being couriered to the Sydney lab this afternoon.

There is 3 batches of samples, all for the same JBS&G job number.

I have attached the 3 COC's to this email.
I believe that the eskies are marked OP/SAL/RES for the separate COC groups.

Let me know if you have any questions.

Cheers,

Michelle

**Michelle Delandro| Senior Project Manager| JBS&G**
Gadigal Country | Level 1, 50 Margaret Street, Sydney, NSW
T: 02 8245 0300 | M: 0417 287 561| E: mdelandro@jbsg.com.au | W: jbsg.com.au | L: Conditions and Limitations

*Exceptional Outcomes*

# 93376

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**Eurofins Environment Testing Australia Pty Ltd**

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NZBN: 9429046024954

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| Penrose, | Rolleston, |
| Auckland 1061 | Christchurch 7675 |
| Tel: +64 9 526 45 51 | Tel: 0800 856 450 |
| IANZ# 1327 | IANZ# 1290 |

# Sample Receipt Advice

| | |
|---|---|
| **Company name:** | JBS & G Australia (NSW) P/L |
| **Contact name:** | Michelle Delandro |
| **Project name:** | EDPARK-OP |
| **Project ID:** | 63325 |
| **Turnaround time:** | 3 Day |
| **Date/Time received** | Oct 19, 2022 5:56 PM |
| **Eurofins reference** | 933769 |

## 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 : 15.6 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

No jar received for DG06_0_0.1, DG06_0.2_0.3, PF09_ASH |Two jars received for PF07_ASH|No bag received for DG06_0_0.1, DG06_0.2_0.3| 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:

**Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com**

Results will be delivered electronically via email to Michelle Delandro - MDelandro@jbsg.com.au.

# Certificate of Analysis

Environment Testing

**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.

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

| | |
|---|---|
| **Attention:** | Michelle Delandro |
| **Report** | 933769-AID |
| **Project Name** | EDPARK-OP |
| **Project ID** | 63325 |
| **Received Date** | Oct 19, 2022 |
| **Date Reported** | Oct 27, 2022 |

## Methodology:

| | |
|---|---|
| Asbestos Fibre Identification | Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.<br>*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.* |
| Unknown Mineral Fibres | Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.<br>*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.* |
| Subsampling Soil Samples | The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.<br>*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.* |
| Bonded asbestos-containing material (ACM) | The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004.<br>*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.* |
| Limit of Reporting | The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).<br>The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).<br>*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.* |

**Project Name** EDPARK-OP
**Project ID** 63325
**Date Sampled** Oct 17, 2022
**Report** 933769-AID

| Client Sample ID | Eurofins Sample No. | Date Sampled | Sample Description | Result |
|---|---|---|---|---|
| DG01_0_0.1 | 22-Oc0043702 | Oct 17, 2022 | Approximate Sample 584g<br>Sample consisted of: Black fine-grained sandy soil, coal and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| SP02_0.2_0.3 | 22-Oc0043703 | Oct 17, 2022 | Approximate Sample 576g<br>Sample consisted of: Brown fine-grained sandy soil, cement and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| SP04_0.2_0.3 | 22-Oc0043704 | Oct 17, 2022 | Approximate Sample 710g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| SP03_0.2_0.3 | 22-Oc0043705 | Oct 17, 2022 | Approximate Sample 618g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| SP01_0.2_0.3 | 22-Oc0043706 | Oct 17, 2022 | Approximate Sample 561g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| DG02_0_0.1 | 22-Oc0043707 | Oct 17, 2022 | Approximate Sample 519g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| DG03_0_0.1 | 22-Oc0043708 | Oct 17, 2022 | Approximate Sample 582g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| PF01_0_0.1 | 22-Oc0043709 | Oct 17, 2022 | Approximate Sample 511g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |

| Client Sample ID | Eurofins Sample No. | Date Sampled | Sample Description | Result |
|---|---|---|---|---|
| PF02_0_0.1 | 22-Oc0043711 | Oct 17, 2022 | Approximate Sample 395g<br>Sample consisted of: Brown coarse-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| PF03_0_0.1 | 22-Oc0043712 | Oct 17, 2022 | Approximate Sample 542g<br>Sample consisted of: Brown coarse-grained clayey sandy soil, organic debris and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| PF04_0_0.1 | 22-Oc0043713 | Oct 17, 2022 | Approximate Sample 606g<br>Sample consisted of: Brown coarse-grained clayey sandy soil, cement, organic debris and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| PF05_0_0.1 | 22-Oc0043715 | Oct 17, 2022 | Approximate Sample 693g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| PF06_0_0.1 | 22-Oc0043717 | Oct 17, 2022 | Approximate Sample 773g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| PF07_0_0.1 | 22-Oc0043718 | Oct 17, 2022 | Approximate Sample 648g<br>Sample consisted of: Brown coarse-grained clayey sandy soil, brick and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| PF09_0_0.1 | 22-Oc0043720 | Oct 17, 2022 | Approximate Sample 648g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| PF08_0_0.1 | 22-Oc0043722 | Oct 17, 2022 | Approximate Sample 801g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| FT03_0_0.1 | 22-Oc0043723 | Oct 17, 2022 | Approximate Sample 457g<br>Sample consisted of: Brown coarse-grained sandy soil, organic debris and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| DG04_0_0.1 | 22-Oc0043724 | Oct 17, 2022 | Approximate Sample 694g<br>Sample consisted of: Brown coarse-grained clayey sandy soil, bitumen and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| UST01_0.2_0.3 | 22-Oc0043729 | Oct 17, 2022 | Approximate Sample 417g<br>Sample consisted of: Red-brown coarse-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |

## 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 |
|---|---|---|---|
| Asbestos - LTM-ASB-8020 | Sydney | Oct 21, 2022 | Indefinite |

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IANZ# 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** EDPARK-OP
**Project ID:** 63325

**Order No.:**
**Report #:** 933769
**Phone:** 02 8245 0300
**Fax:**

**Received:** Oct 19, 2022 5:56 PM
**Due:** Oct 26, 2022
**Priority:** 3 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25 °C as rec.) | Total Organic Carbon | Polycyclic Aromatic Hydrocarbons | Metals M8 | BTEX | Moisture Set | Moisture Set | Cation Exchange Capacity | Total Recoverable Hydrocarbons | JBS&G Suite 2 | Per- and Polyfluoroalkyl Substances (PFASs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | | X | | | | | | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| **External Laboratory** | | | | | | | | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | | | | | | | | |
| 1 | DG01_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043702 | X | X | | | X | X | | | | | X | X | | X | X |
| 2 | SP02_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043703 | | X | | | | | | | | | X | | | X | X |
| 3 | SP04_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043704 | | X | | | | | | | | | X | | | X | X |
| 4 | SP03_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043705 | | X | | | | | | | | | X | | | X | X |
| 5 | SP01_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043706 | | X | | | | | | | | | X | | | X | X |
| 6 | DG02_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043707 | | X | | | | | | | | | X | | | X | X |
| 7 | DG03_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043708 | | X | | | | | | | | | X | | | X | X |
| 8 | PF01_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043709 | | X | | | | | X | X | X | | X | | X | | |
| 9 | PF01_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043710 | | | | | | | X | | X | | X | | X | | |
| 10 | PF02_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043711 | | X | | | | | X | X | X | | X | | X | | |
| 11 | PF03_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043712 | | X | | | | | X | X | X | | X | | X | | |

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NATA# 1261 Site# 18217

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ACT 2911
Tel: +61 2 6113 8091

**Brisbane**
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Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

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NATA# 1261 Site# 25079

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43 Detroit Drive
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IANZ# 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** EDPARK-OP
**Project ID:** 63325

**Order No.:**
**Report #:** 933769
**Phone:** 02 8245 0300
**Fax:**

**Received:** Oct 19, 2022 5:56 PM
**Due:** Oct 26, 2022
**Priority:** 3 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25 °C as rec.) | Total Organic Carbon | Polycyclic Aromatic Hydrocarbons | Metals M8 | BTEX | Moisture Set | Moisture Set | Cation Exchange Capacity | Total Recoverable Hydrocarbons | JBS&G Suite 2 | Per- and Polyfluoroalkyl Substances (PFASs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | | X | | | | | | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| 12 | PF04_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043713 | X | X | | | X | X | X | X | X | | X | X | X | | |
| 13 | PF04_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043714 | | | | | | | X | | X | | X | | X | | |
| 14 | PF05_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043715 | | X | | | | | X | X | X | | X | | X | | |
| 15 | PF05_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043716 | | | | | | | X | | X | | X | | X | | |
| 16 | PF06_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043717 | | X | | | | | X | X | X | | X | | X | | |
| 17 | PF07_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043718 | | X | | | | | X | X | X | | X | | X | | |
| 18 | PF07_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043719 | | | | | | | X | | X | | X | | X | | |
| 19 | PF09_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043720 | | X | | | | | X | X | X | | X | | X | | |
| 20 | PF09_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043721 | | | | | | | X | | X | | X | | X | | |
| 21 | PF08_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043722 | | X | | | | | X | X | X | | X | | X | | |
| 22 | FT03_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043723 | | X | | | | | | | | | X | | | X | |
| 23 | DG04_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043724 | | X | | | | | | | | | X | | | | X |
| 24 | DG04_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043725 | | | | | | | | | | | X | | | X | |
| 25 | FT02_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043726 | | | | | | | | | | | X | | | X | |

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| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| 26 | FT01_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043727 | | | | | | | | | | | X | | | X | |
| 27 | DG05_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043728 | | | | | | | | | | | X | | | X | X |
| 28 | UST01_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043729 | | X | | | | | X | X | X | | X | | X | | |
| 29 | UST01_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043730 | | | | | | | X | | X | | X | | X | | |
| 30 | DG06_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043731 | | | X | | | | | | | | | | | | |
| 31 | DG06_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043732 | | | X | | | | | | | | | | | | |
| 32 | QC20221017_01 | Oct 17, 2022 | | Soil | S22-Oc0043733 | | | | | | | | | | | X | | | X | X |
| 33 | QC20221017_02 | Oct 17, 2022 | | Soil | S22-Oc0043734 | | | | | | | | | | | X | | | X | X |
| 34 | HD01_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043735 | | | | | | | | | | X | | | | | X |
| 35 | HD02_0.8_0.9 | Oct 17, 2022 | | Soil | S22-Oc0043736 | | | | | | | | | | X | | | | | X |
| 36 | DG07_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043737 | | | | | | | | | | | X | | | X | X |

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| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | | X | | | | | | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| 37 | DG01_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043738 | | | | X | | | | | | | | | | | |
| 38 | DG01_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043739 | | | | X | | | | | | | | | | | |
| 39 | SP02_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043740 | | | | X | | | | | | | | | | | |
| 40 | SP02_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043741 | | | | X | | | | | | | | | | | |
| 41 | SP02_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043742 | | | | X | | | | | | | | | | | |
| 42 | SP04_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043743 | | | | X | | | | | | | | | | | |
| 43 | SP04_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043744 | | | | X | | | | | | | | | | | |
| 44 | SP04_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043745 | | | | X | | | | | | | | | | | |
| 45 | SP03_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043746 | | | | X | | | | | | | | | | | |
| 46 | SP03_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043747 | | | | X | | | | | | | | | | | |
| 47 | SP03_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043748 | | | | X | | | | | | | | | | | |
| 48 | SP01_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043749 | | | | X | | | | | | | | | | | |
| 49 | SP01_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043750 | | | | X | | | | | | | | | | | |
| 50 | SP01_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043751 | | | | X | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | | X | | | | | | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| 51 | DG02_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043752 | | | | X | | | | | | | | | | | |
| 52 | DG03_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043753 | | | | X | | | | | | | | | | | |
| 53 | PF02_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043754 | | | | X | | | | | | | | | | | |
| 54 | PF03_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043755 | | | | X | | | | | | | | | | | |
| 55 | PF06_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043756 | | | | X | | | | | | | | | | | |
| 56 | PF08_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043757 | | | | X | | | | | | | | | | | |
| 57 | PF05_ASH | Oct 17, 2022 | | Soil | S22-Oc0043758 | | | | X | | | | | | | | | | | |
| 58 | PF06_ASH | Oct 17, 2022 | | Soil | S22-Oc0043759 | | | | X | | | | | | | | | | | |
| 59 | PF07_ASH | Oct 17, 2022 | | Soil | S22-Oc0043760 | | | | X | | | | | | | | | | | |
| 60 | PF08_ASH | Oct 17, 2022 | | Soil | S22-Oc0043761 | | | | X | | | | | | | | | | | |
| 61 | PF09_ASH | Oct 17, 2022 | | Soil | S22-Oc0043762 | | | X | | | | | | | | | | | | |
| 62 | FT03_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043763 | | | | X | | | | | | | | | | | |
| 63 | FT02_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043764 | | | | X | | | | | | | | | | | |
| 64 | FT02_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043765 | | | | X | | | | | | | | | | | |

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| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| 65 | FT02_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043766 | | | | X | | | | | | | | | | | |
| 66 | FT01_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043767 | | | | X | | | | | | | | | | | |
| 67 | DG05_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043768 | | | | X | | | | | | | | | | | |
| 68 | UST01_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043769 | | | | X | | | | | | | | | | | |
| 69 | UST01_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043770 | | | | X | | | | | | | | | | | |
| 70 | TS | Oct 17, 2022 | | Water | S22-Oc0043771 | | | | X | | | | | | | | | | | |
| 71 | TB | Oct 17, 2022 | | Water | S22-Oc0043772 | | | | X | | | | | | | | | | | |
| 72 | BLANK | Oct 17, 2022 | | Water | S22-Oc0043773 | | | | X | | | | | | | | | | | |
| 73 | DG07_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043774 | | | | X | | | | | | | | | | | |
| **Test Counts** | | | | | | 2 | 19 | 3 | 36 | 2 | 2 | 16 | 10 | 16 | 34 | 34 | 2 | 16 | 15 | 14 |

## Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

## Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
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.

## Units

| | |
|---|---|
| % w/w: | Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**) |
| F/fld | Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**) |
| F/mL | Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**) |
| g, kg | Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**) |
| g/kg | Concentration in grams per kilogram |
| L, mL | Volume, e.g. of air as measured in AFM (**V** = **r** x **t**) |
| L/min | Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**) |
| min | Time (**t**), e.g. of air sample collection period |

## Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

## Terms

| | |
|---|---|
| **%asbestos** | Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**$P_A$**). |
| **ACM** | Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm. |
| **AF** | Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable". |
| **AFM** | Airborne Fibre Monitoring, e.g. by the MFM. |
| **Amosite** | Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004. |
| **AS** | Australian Standard. |
| **Asbestos Content (as asbestos)** | Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**). |
| **Chrysotile** | Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004. |
| **COC** | Chain of Custody. |
| **Crocidolite** | Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004. |
| **Dry** | Sample is dried by heating prior to analysis. |
| **DS** | Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM. |
| **FA** | Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF. |
| **Fibre Count** | Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003 |
| **Fibre ID** | Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos. |
| **Friable** | Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability. |
| **HSG248** | UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021). |
| **HSG264** | UK HSE HSG264, *Asbestos: The Survey Guide* (2012). |
| **ISO (also ISO/IEC)** | International Organization for Standardization / International Electrotechnical Commission. |
| **K Factor** | Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**). |
| **LOR** | Limit of Reporting. |
| **MFM (also NOHSC:3003)** | Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)]. |
| **NEPM (also ASC NEPM)** | National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended). |
| **Organic** | Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004. |
| **PCM** | Phase Contrast Microscopy. As used for Fibre Counting according to the MFM. |
| **PLM** | Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004. |
| **SMF** | Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004. |
| **SRA** | Sample Receipt Advice. |
| **Trace Analysis** | Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix. |
| **UK HSE HSG** | United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication. |
| **UMF** | Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos. |
| **WA DOH** | Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis* |
| **Weighted Average** | Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**). |

## Comments

22-Oc0043723, 22-Oc0043729 and 22-Oc0043711: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

## 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 |

## Asbestos Counter/Identifier:

| | |
|---|---|
| Sayeed Abu | Senior Analyst-Asbestos |

## Authorised by:

| | |
|---|---|
| Laxman Dias | Senior Analyst-Asbestos |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

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

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

**Attention:** **Michelle Delandro**

**Report** **933769-S**
Project name EDPARK-OP
Project ID 63325
Received Date Oct 19, 2022

| **Client Sample ID** | | | **DG01_0_0.1** | **SP02_0.2_0.3** | **SP04_0.2_0.3** | **SP03_0.2_0.3** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S22-Oc0043702** | **S22-Oc0043703** | **S22-Oc0043704** | **S22-Oc0043705** |
| **Date Sampled** | | | **Oct 17, 2022** | **Oct 17, 2022** | **Oct 17, 2022** | **Oct 17, 2022** |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | 46 | < 20 | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 87 | 109 | 115 | 106 |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 | 0.6 | 0.6 | 0.6 |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 | 1.2 | 1.2 | 1.2 |
| Acenaphthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Chrysene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |

| Client Sample ID | | | DG01_0_0.1 | SP02_0.2_0.3 | SP04_0.2_0.3 | SP03_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043702 | S22-Oc0043703 | S22-Oc0043704 | S22-Oc0043705 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Fluorene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Naphthalene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Phenanthrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total PAH* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 2-Fluorobiphenyl (surr.) | 1 | % | 110 | 86 | 92 | 82 |
| p-Terphenyl-d14 (surr.) | 1 | % | 106 | 90 | 80 | 93 |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| a-HCH | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| b-HCH | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| d-HCH | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dieldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan II | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin ketone | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| g-HCH (Lindane) | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Heptachlor | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Methoxychlor | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Toxaphene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 94 | 79 | 81 | 93 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 98 | 77 | 80 | 75 |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aroclor-1221 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aroclor-1232 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aroclor-1242 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aroclor-1248 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aroclor-1254 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aroclor-1260 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Total PCB* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 94 | 79 | 81 | 93 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 98 | 77 | 80 | 75 |

| Client Sample ID | | | DG01_0_0.1 | SP02_0.2_0.3 | SP04_0.2_0.3 | SP03_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043702 | S22-Oc0043703 | S22-Oc0043704 | S22-Oc0043705 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| | | | | | | |
| % Clay | 1 | % | 5.1 | - | - | - |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | 10 | uS/cm | < 10 | - | - | - |
| pH (1:5 Aqueous extract at 25 °C as rec.) | 0.1 | pH Units | 8.1 | - | - | - |
| Total Organic Carbon | 0.1 | % | 5.3 | - | - | - |
| % Moisture | 1 | % | 15 | 11 | 12 | 15 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 7.7 | 4.7 | 10 | 7.9 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 27 | 14 | 10 | 18 |
| Copper | 5 | mg/kg | 16 | 15 | 39 | 24 |
| Lead | 5 | mg/kg | 31 | 16 | 22 | 27 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 12 | 12 | 8.5 | 8.4 |
| Zinc | 5 | mg/kg | 36 | 42 | 63 | 64 |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | 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 | % | 100 | 76 | 108 | 82 |
| 13C5-PFPeA (surr.) | 1 | % | 97 | 76 | 96 | 92 |
| 13C5-PFHxA (surr.) | 1 | % | 79 | 64 | 104 | 67 |
| 13C4-PFHpA (surr.) | 1 | % | 71 | 50 | 72 | 61 |
| 13C8-PFOA (surr.) | 1 | % | 70 | 61 | 88 | 69 |
| 13C5-PFNA (surr.) | 1 | % | 79 | 64 | 93 | 74 |
| 13C6-PFDA (surr.) | 1 | % | 76 | 58 | 87 | 68 |
| 13C2-PFUnDA (surr.) | 1 | % | 65 | 50 | 77 | 57 |
| 13C2-PFDoDA (surr.) | 1 | % | 70 | 53 | 78 | 65 |
| 13C2-PFTeDA (surr.) | 1 | % | 77 | 52 | 97 | 65 |
| **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 |

| Client Sample ID | | | DG01_0_0.1 | SP02_0.2_0.3 | SP04_0.2_0.3 | SP03_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043702 | S22-Oc0043703 | S22-Oc0043704 | S22-Oc0043705 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | | | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11] | 10 | ug/kg | < 10 | < 10 | < 10 | < 10 |
| 13C8-FOSA (surr.) | 1 | % | 88 | 63 | 95 | 78 |
| D3-N-MeFOSA (surr.) | 1 | % | 85 | 58 | 100 | 66 |
| D5-N-EtFOSA (surr.) | 1 | % | 102 | 71 | 119 | 93 |
| D7-N-MeFOSE (surr.) | 1 | % | 87 | 63 | 109 | 79 |
| D9-N-EtFOSE (surr.) | 1 | % | 120 | 75 | 130 | 92 |
| D5-N-EtFOSAA (surr.) | 1 | % | 69 | 45 | 83 | 57 |
| D3-N-MeFOSAA (surr.) | 1 | % | 82 | 55 | 93 | 68 |
| **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 | % | 116 | 93 | 127 | 95 |
| 18O2-PFHxS (surr.) | 1 | % | 81 | 69 | 99 | 78 |
| 13C8-PFOS (surr.) | 1 | % | 91 | 67 | 104 | 83 |
| **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 | % | 55 | 51 | 82 | 49 |
| 13C2-6:2 FTSA (surr.) | 1 | % | 59 | 44 | 46 | 58 |
| 13C2-8:2 FTSA (surr.) | 1 | % | 44 | 35 | 49 | 39 |
| 13C2-10:2 FTSA (surr.) | 1 | % | 74 | 67 | 82 | 71 |
| **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 | | | SP01_0.2_0.3 | DG02_0_0.1 | DG03_0_0.1 | PF01_0_0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043706 | S22-Oc0043707 | S22-Oc0043708 | S22-Oc0043709 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 93 | 110 | 107 | 101 |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 | 0.6 | 0.6 | 0.6 |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 | 1.2 | 1.2 | 1.2 |
| Acenaphthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Chrysene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Fluorene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Naphthalene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Phenanthrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total PAH* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 2-Fluorobiphenyl (surr.) | 1 | % | 67 | 90 | 93 | 88 |
| p-Terphenyl-d14 (surr.) | 1 | % | 86 | 106 | 106 | 87 |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |

| Client Sample ID | | | SP01_0.2_0.3 | DG02_0_0.1 | DG03_0_0.1 | PF01_0_0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043706 | S22-Oc0043707 | S22-Oc0043708 | S22-Oc0043709 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Organochlorine Pesticides** | | | | | | |
| a-HCH | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Aldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| b-HCH | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| d-HCH | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Dieldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endosulfan II | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endrin ketone | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| g-HCH (Lindane) | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Heptachlor | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Methoxychlor | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Toxaphene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Dibutylchlorendate (surr.) | 1 | % | 92 | 121 | 116 | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | 73 | 84 | 85 | - |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1221 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1232 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1242 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1248 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1254 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1260 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Total PCB* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Dibutylchlorendate (surr.) | 1 | % | 92 | 121 | 116 | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | 73 | 84 | 85 | - |
| | | | | | | |
| % Moisture | 1 | % | 14 | 15 | 12 | 14 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 9.8 | 6.7 | 7.2 | 6.7 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 8.7 | 24 | 24 | 22 |
| Copper | 5 | mg/kg | 54 | 11 | 8.1 | < 5 |
| Lead | 5 | mg/kg | 15 | 21 | 16 | 17 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 17 | 7.5 | < 5 | < 5 |
| Zinc | 5 | mg/kg | 81 | 25 | 26 | 13 |

| Client Sample ID | | | SP01_0.2_0.3 | DG02_0_0.1 | DG03_0_0.1 | PF01_0_0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043706 | S22-Oc0043707 | S22-Oc0043708 | S22-Oc0043709 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| 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 | % | 86 | 86 | 153 | - |
| 13C5-PFPeA (surr.) | 1 | % | 92 | 86 | 148 | - |
| 13C5-PFHxA (surr.) | 1 | % | 68 | 60 | 135 | - |
| 13C4-PFHpA (surr.) | 1 | % | 65 | 62 | 93 | - |
| 13C8-PFOA (surr.) | 1 | % | 61 | 61 | 120 | - |
| 13C5-PFNA (surr.) | 1 | % | 68 | 69 | 114 | - |
| 13C6-PFDA (surr.) | 1 | % | 65 | 66 | 111 | - |
| 13C2-PFUnDA (surr.) | 1 | % | 58 | 55 | 87 | - |
| 13C2-PFDoDA (surr.) | 1 | % | 63 | 59 | 95 | - |
| 13C2-PFTeDA (surr.) | 1 | % | 69 | 68 | 82 | - |
| **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 | % | 81 | 70 | 72 | - |
| D3-N-MeFOSA (surr.) | 1 | % | 76 | 69 | 88 | - |
| D5-N-EtFOSA (surr.) | 1 | % | 97 | 90 | 109 | - |
| D7-N-MeFOSE (surr.) | 1 | % | 76 | 91 | 64 | - |
| D9-N-EtFOSE (surr.) | 1 | % | 102 | 85 | 103 | - |
| D5-N-EtFOSAA (surr.) | 1 | % | 61 | 55 | 94 | - |
| D3-N-MeFOSAA (surr.) | 1 | % | 72 | 67 | 113 | - |
| **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 | - |

| Client Sample ID | | | SP01_0.2_0.3 | DG02_0_0.1 | DG03_0_0.1 | PF01_0_0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043706 | S22-Oc0043707 | S22-Oc0043708 | S22-Oc0043709 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | | | |
| 13C3-PFBS (surr.) | 1 | % | 92 | 93 | 154 | - |
| 18O2-PFHxS (surr.) | 1 | % | 77 | 77 | 133 | - |
| 13C8-PFOS (surr.) | 1 | % | 81 | 79 | 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 | - |
| 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 | % | 47 | 48 | 106 | - |
| 13C2-6:2 FTSA (surr.) | 1 | % | 43 | 53 | 71 | - |
| 13C2-8:2 FTSA (surr.) | 1 | % | 38 | 36 | 55 | - |
| 13C2-10:2 FTSA (surr.) | 1 | % | 65 | 63 | 105 | - |
| **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 | - |

| Client Sample ID | | | PF01_0.2_0.3 | PF02_0_0.1 | PF03_0_0.1 | PF04_0_0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043710 | S22-Oc0043711 | S22-Oc0043712 | S22-Oc0043713 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |

| Client Sample ID | | | PF01_0.2_0.3 | PF02_0_0.1 | PF03_0_0.1 | PF04_0_0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043710 | S22-Oc0043711 | S22-Oc0043712 | S22-Oc0043713 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **BTEX** | | | | | | |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 103 | 111 | 116 | 110 |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 | 0.6 | 0.6 | 0.6 |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 | 1.2 | 1.2 | 1.2 |
| Acenaphthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Chrysene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Fluorene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Naphthalene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Phenanthrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total PAH* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 2-Fluorobiphenyl (surr.) | 1 | % | 92 | 95 | 84 | 92 |
| p-Terphenyl-d14 (surr.) | 1 | % | 89 | 104 | 96 | 101 |
| | | | | | | |
| % Clay | 1 | % | - | - | - | 11 |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | 10 | uS/cm | - | - | - | 35 |
| pH (1:5 Aqueous extract at 25 °C as rec.) | 0.1 | pH Units | - | - | - | 8.3 |
| Total Organic Carbon | 0.1 | % | - | - | - | 2.7 |
| % Moisture | 1 | % | 24 | 11 | 16 | 19 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | - | 11 | 10.0 | 7.7 |
| Cadmium | 0.4 | mg/kg | - | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | - | 29 | 31 | 22 |
| Copper | 5 | mg/kg | - | < 5 | < 5 | 11 |
| Lead | 5 | mg/kg | - | 20 | 18 | 19 |
| Mercury | 0.1 | mg/kg | - | < 0.1 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | - | < 5 | < 5 | 7.0 |
| Zinc | 5 | mg/kg | - | 13 | 12 | 31 |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | - | - | - | 37 |

| Client Sample ID | | | PF04_0.2_0.3 | PF05_0_0.1 | PF05_0.2_0.3 | PF06_0_0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043714 | S22-Oc0043715 | S22-Oc0043716 | S22-Oc0043717 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 89 | 61 | 97 | 94 |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 | 0.6 | 0.6 | 0.6 |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 | 1.2 | 1.2 | 1.2 |
| Acenaphthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Chrysene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Fluorene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Naphthalene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Phenanthrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total PAH* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 2-Fluorobiphenyl (surr.) | 1 | % | 75 | 86 | 86 | 99 |
| p-Terphenyl-d14 (surr.) | 1 | % | 76 | 80 | 113 | 78 |
| | | | | | | |
| % Moisture | 1 | % | 22 | 9.8 | 23 | 11 |

| Client Sample ID | | | PF04_0.2_0.3 | PF05_0_0.1 | PF05_0.2_0.3 | PF06_0_0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043714 | S22-Oc0043715 | S22-Oc0043716 | S22-Oc0043717 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | - | 7.1 | - | 14 |
| Cadmium | 0.4 | mg/kg | - | < 0.4 | - | < 0.4 |
| Chromium | 5 | mg/kg | - | 17 | - | 19 |
| Copper | 5 | mg/kg | - | 11 | - | 15 |
| Lead | 5 | mg/kg | - | 28 | - | 19 |
| Mercury | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Nickel | 5 | mg/kg | - | 6.7 | - | 10 |
| Zinc | 5 | mg/kg | - | 63 | - | 21 |

| Client Sample ID | | | PF07_0_0.1 | PF07_0.2_0.3 | PF09_0_0.1 | PF09_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043718 | S22-Oc0043719 | S22-Oc0043720 | S22-Oc0043721 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 122 | 121 | 130 | 127 |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 | 0.6 | 0.6 | 0.6 |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 | 1.2 | 1.2 | 1.2 |
| Acenaphthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |

| Client Sample ID | | | PF07_0_0.1 | PF07_0.2_0.3 | PF09_0_0.1 | PF09_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043718 | S22-Oc0043719 | S22-Oc0043720 | S22-Oc0043721 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Chrysene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Fluorene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Naphthalene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Phenanthrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total PAH* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 2-Fluorobiphenyl (surr.) | 1 | % | 86 | 99 | 80 | 89 |
| p-Terphenyl-d14 (surr.) | 1 | % | 88 | 89 | 104 | 102 |
| | | | | | | |
| % Moisture | 1 | % | 6.5 | 20 | 8.9 | 23 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 3.7 | - | 14 | - |
| Cadmium | 0.4 | mg/kg | < 0.4 | - | < 0.4 | - |
| Chromium | 5 | mg/kg | 13 | - | 20 | - |
| Copper | 5 | mg/kg | 48 | - | 18 | - |
| Lead | 5 | mg/kg | 5.2 | - | 28 | - |
| Mercury | 0.1 | mg/kg | < 0.1 | - | < 0.1 | - |
| Nickel | 5 | mg/kg | 56 | - | 13 | - |
| Zinc | 5 | mg/kg | 43 | - | 35 | - |

| Client Sample ID | | | PF08_0_0.1 | FT03_0_0.1 | DG04_0_0.1 | DG04_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043722 | S22-Oc0043723 | S22-Oc0043724 | S22-Oc0043725 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | - | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | 21 | - | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | - | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | - | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | - | < 50 |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | - | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | - | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | - | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | - | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | - | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | - | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | - | < 100 |

| Client Sample ID | | | PF08_0_0.1 | FT03_0_0.1 | DG04_0_0.1 | DG04_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043722 | S22-Oc0043723 | S22-Oc0043724 | S22-Oc0043725 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | - | < 0.1 |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | - | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | - | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | - | < 0.2 |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | - | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | - | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 86 | 84 | - | 135 |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 | 0.6 | - | 0.6 |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 | 1.2 | - | 1.2 |
| Acenaphthene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Chrysene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Fluorene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Naphthalene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Phenanthrene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| Total PAH* | 0.5 | mg/kg | < 0.5 | < 0.5 | - | < 0.5 |
| 2-Fluorobiphenyl (surr.) | 1 | % | 101 | 86 | - | [Q09]INT |
| p-Terphenyl-d14 (surr.) | 1 | % | 91 | 81 | - | 68 |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| 4.4'-DDD | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| 4.4'-DDE | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| 4.4'-DDT | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| a-HCH | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Aldrin | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| b-HCH | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| d-HCH | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Dieldrin | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Endosulfan II | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Endosulfan sulphate | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Endrin | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Endrin aldehyde | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Endrin ketone | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| g-HCH (Lindane) | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Heptachlor | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Heptachlor epoxide | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |

| Client Sample ID | | | PF08_0_0.1 | FT03_0_0.1 | DG04_0_0.1 | DG04_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043722 | S22-Oc0043723 | S22-Oc0043724 | S22-Oc0043725 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Organochlorine Pesticides** | | | | | | |
| Hexachlorobenzene | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Methoxychlor | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Toxaphene | 0.5 | mg/kg | - | < 0.5 | - | < 0.5 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | - | < 0.05 | - | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | - | 79 | - | 62 |
| Tetrachloro-m-xylene (surr.) | 1 | % | - | 88 | - | 61 |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Aroclor-1221 | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Aroclor-1232 | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Aroclor-1242 | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Aroclor-1248 | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Aroclor-1254 | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Aroclor-1260 | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Total PCB* | 0.1 | mg/kg | - | < 0.1 | - | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | - | 79 | - | 62 |
| Tetrachloro-m-xylene (surr.) | 1 | % | - | 88 | - | 61 |
| | | | | | | |
| % Moisture | 1 | % | 5.2 | 18 | 9.9 | 22 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 6.3 | 9.6 | - | 13 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | - | < 0.4 |
| Chromium | 5 | mg/kg | 17 | 16 | - | 20 |
| Copper | 5 | mg/kg | 42 | 14 | - | 31 |
| Lead | 5 | mg/kg | 6.6 | 130 | - | 12 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | - | < 0.1 |
| Nickel | 5 | mg/kg | 34 | 5.8 | - | 8.0 |
| Zinc | 5 | mg/kg | 34 | 120 | - | 33 |
| **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 | % | - | - | 77 | - |
| 13C5-PFPeA (surr.) | 1 | % | - | - | 87 | - |
| 13C5-PFHxA (surr.) | 1 | % | - | - | 61 | - |
| 13C4-PFHpA (surr.) | 1 | % | - | - | 57 | - |
| 13C8-PFOA (surr.) | 1 | % | - | - | 59 | - |

| Client Sample ID | | | PF08_0_0.1 | FT03_0_0.1 | DG04_0_0.1 | DG04_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043722 | S22-Oc0043723 | S22-Oc0043724 | S22-Oc0043725 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | | | |
| 13C5-PFNA (surr.) | 1 | % | - | - | 64 | - |
| 13C6-PFDA (surr.) | 1 | % | - | - | 62 | - |
| 13C2-PFUnDA (surr.) | 1 | % | - | - | 55 | - |
| 13C2-PFDoDA (surr.) | 1 | % | - | - | 55 | - |
| 13C2-PFTeDA (surr.) | 1 | % | - | - | 58 | - |
| **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 | % | - | - | 67 | - |
| D3-N-MeFOSA (surr.) | 1 | % | - | - | 67 | - |
| D5-N-EtFOSA (surr.) | 1 | % | - | - | 82 | - |
| D7-N-MeFOSE (surr.) | 1 | % | - | - | 74 | - |
| D9-N-EtFOSE (surr.) | 1 | % | - | - | 85 | - |
| D5-N-EtFOSAA (surr.) | 1 | % | - | - | 51 | - |
| D3-N-MeFOSAA (surr.) | 1 | % | - | - | 65 | - |
| **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 | % | - | - | 90 | - |
| 18O2-PFHxS (surr.) | 1 | % | - | - | 72 | - |
| 13C8-PFOS (surr.) | 1 | % | - | - | 76 | - |
| **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 | % | - | - | 46 | - |
| 13C2-6:2 FTSA (surr.) | 1 | % | - | - | 44 | - |
| 13C2-8:2 FTSA (surr.) | 1 | % | - | - | 31 | - |
| 13C2-10:2 FTSA (surr.) | 1 | % | - | - | 63 | - |

| Client Sample ID | | | PF08_0_0.1 | FT03_0_0.1 | DG04_0_0.1 | DG04_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043722 | S22-Oc0043723 | S22-Oc0043724 | S22-Oc0043725 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **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 | - |

| Client Sample ID | | | FT02_0.2_0.3 | FT01_0.2_0.3 | DG05_0_0.1 | UST01_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043726 | S22-Oc0043727 | S22-Oc0043728 | S22-Oc0043729 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 72 | 105 | 124 | 92 |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 | 0.6 | 0.6 | 0.6 |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 | 1.2 | 1.2 | 1.2 |
| Acenaphthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Chrysene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |

| Client Sample ID | | | FT02_0.2_0.3 | FT01_0.2_0.3 | DG05_0_0.1 | UST01_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043726 | S22-Oc0043727 | S22-Oc0043728 | S22-Oc0043729 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Fluorene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Naphthalene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Phenanthrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total PAH* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 2-Fluorobiphenyl (surr.) | 1 | % | 94 | 101 | 111 | 81 |
| p-Terphenyl-d14 (surr.) | 1 | % | 109 | 81 | 133 | 93 |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | < 0.05 | 0.07 | - |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | 0.06 | < 0.05 | - |
| a-HCH | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Aldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| b-HCH | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| d-HCH | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Dieldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endosulfan II | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Endrin ketone | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| g-HCH (Lindane) | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Heptachlor | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Methoxychlor | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| Toxaphene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | - |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | 0.06 | 0.07 | - |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Dibutylchlorendate (surr.) | 1 | % | 121 | 147 | [Q09]INT | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | 89 | 84 | 89 | - |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1221 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1232 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1242 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1248 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1254 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Aroclor-1260 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Total PCB* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Dibutylchlorendate (surr.) | 1 | % | 121 | 147 | [Q09]INT | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | 89 | 84 | 89 | - |
| | | | | | | |
| % Moisture | 1 | % | 9.7 | 14 | 14 | 22 |

| Client Sample ID | | | FT02_0.2_0.3 | FT01_0.2_0.3 | DG05_0_0.1 | UST01_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043726 | S22-Oc0043727 | S22-Oc0043728 | S22-Oc0043729 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 13 | 10 | 8.0 | 18 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 33 | 29 | 15 | 17 |
| Copper | 5 | mg/kg | 9.9 | 51 | 11 | 23 |
| Lead | 5 | mg/kg | 16 | 50 | 1600 | 15 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 11 | 21 | < 5 | 12 |
| Zinc | 5 | mg/kg | 23 | 110 | 81 | 38 |
| **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 | % | - | - | 91 | - |
| 13C5-PFPeA (surr.) | 1 | % | - | - | 98 | - |
| 13C5-PFHxA (surr.) | 1 | % | - | - | 64 | - |
| 13C4-PFHpA (surr.) | 1 | % | - | - | 66 | - |
| 13C8-PFOA (surr.) | 1 | % | - | - | 65 | - |
| 13C5-PFNA (surr.) | 1 | % | - | - | 74 | - |
| 13C6-PFDA (surr.) | 1 | % | - | - | 73 | - |
| 13C2-PFUnDA (surr.) | 1 | % | - | - | 60 | - |
| 13C2-PFDoDA (surr.) | 1 | % | - | - | 63 | - |
| 13C2-PFTeDA (surr.) | 1 | % | - | - | 72 | - |
| **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 | % | - | - | 78 | - |
| D3-N-MeFOSA (surr.) | 1 | % | - | - | 70 | - |
| D5-N-EtFOSA (surr.) | 1 | % | - | - | 96 | - |
| D7-N-MeFOSE (surr.) | 1 | % | - | - | 79 | - |
| D9-N-EtFOSE (surr.) | 1 | % | - | - | 92 | - |
| D5-N-EtFOSAA (surr.) | 1 | % | - | - | 67 | - |
| D3-N-MeFOSAA (surr.) | 1 | % | - | - | 74 | - |

| Client Sample ID | | | FT02_0.2_0.3 | FT01_0.2_0.3 | DG05_0_0.1 | UST01_0.2_0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043726 | S22-Oc0043727 | S22-Oc0043728 | S22-Oc0043729 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **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 | % | - | - | 95 | - |
| 18O2-PFHxS (surr.) | 1 | % | - | - | 78 | - |
| 13C8-PFOS (surr.) | 1 | % | - | - | 85 | - |
| **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 | % | - | - | 50 | - |
| 13C2-6:2 FTSA (surr.) | 1 | % | - | - | 43 | - |
| 13C2-8:2 FTSA (surr.) | 1 | % | - | - | 40 | - |
| 13C2-10:2 FTSA (surr.) | 1 | % | - | - | 72 | - |
| **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 | - |

| Client Sample ID | | | UST01_0.4_0.5 | QC20221017_01 | QC20221017_02 | HD01_0.4_0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043730 | S22-Oc0043733 | S22-Oc0043734 | S22-Oc0043735 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | - |
| TRH C10-C14 | 20 | mg/kg | < 20 | < 20 | < 20 | - |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | < 50 | - |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | < 50 | - |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | < 50 | - |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | - |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | - |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | < 50 | - |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | < 50 | - |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | < 100 | - |

| Client Sample ID | | | UST01_0.4_0.5 | QC20221017_01 | QC20221017_02 | HD01_0.4_0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043730 | S22-Oc0043733 | S22-Oc0043734 | S22-Oc0043735 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | - |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | < 100 | - |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | - |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | - |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | < 0.3 | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | 107 | 105 | 84 | - |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 | 0.6 | 0.6 | - |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 | 1.2 | 1.2 | - |
| Acenaphthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Chrysene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Fluoranthene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Fluorene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Naphthalene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Phenanthrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Pyrene | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| Total PAH* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | - |
| 2-Fluorobiphenyl (surr.) | 1 | % | 83 | 74 | 65 | - |
| p-Terphenyl-d14 (surr.) | 1 | % | 80 | 76 | 86 | - |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| 4.4'-DDD | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| 4.4'-DDE | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| 4.4'-DDT | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| a-HCH | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Aldrin | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| b-HCH | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| d-HCH | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Dieldrin | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Endosulfan I | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Endosulfan II | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Endosulfan sulphate | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Endrin | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Endrin aldehyde | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |

| Client Sample ID | | | UST01_0.4_0.5 | QC20221017_01 | QC20221017_02 | HD01_0.4_0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043730 | S22-Oc0043733 | S22-Oc0043734 | S22-Oc0043735 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Organochlorine Pesticides** | | | | | | |
| Endrin ketone | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| g-HCH (Lindane) | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Heptachlor | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Heptachlor epoxide | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Hexachlorobenzene | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Methoxychlor | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Toxaphene | 0.5 | mg/kg | - | < 0.5 | < 0.5 | - |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | - | < 0.05 | < 0.05 | - |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Dibutylchlorendate (surr.) | 1 | % | - | 66 | 115 | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | - | 81 | 83 | - |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Aroclor-1221 | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Aroclor-1232 | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Aroclor-1242 | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Aroclor-1248 | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Aroclor-1254 | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Aroclor-1260 | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Total PCB* | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Dibutylchlorendate (surr.) | 1 | % | - | 66 | 115 | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | - | 81 | 83 | - |
| | | | | | | |
| % Moisture | 1 | % | 18 | 7.5 | 15 | 17 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | - | 2.5 | 6.1 | - |
| Cadmium | 0.4 | mg/kg | - | < 0.4 | < 0.4 | - |
| Chromium | 5 | mg/kg | - | < 5 | 20 | - |
| Copper | 5 | mg/kg | - | < 5 | 12 | - |
| Lead | 5 | mg/kg | - | 6.8 | 24 | - |
| Mercury | 0.1 | mg/kg | - | < 0.1 | < 0.1 | - |
| Nickel | 5 | mg/kg | - | < 5 | 8.6 | - |
| Zinc | 5 | mg/kg | - | 26 | 27 | - |
| **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 | % | - | 95 | 97 | 87 |

| Client Sample ID | | | UST01_0.4_0.5 | QC20221017_01 | QC20221017_02 | HD01_0.4_0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043730 | S22-Oc0043733 | S22-Oc0043734 | S22-Oc0043735 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | | | |
| 13C5-PFPeA (surr.) | 1 | % | - | 93 | 90 | 78 |
| 13C5-PFHxA (surr.) | 1 | % | - | 64 | 69 | 75 |
| 13C4-PFHpA (surr.) | 1 | % | - | 53 | 59 | 60 |
| 13C8-PFOA (surr.) | 1 | % | - | 69 | 72 | 65 |
| 13C5-PFNA (surr.) | 1 | % | - | 71 | 76 | 65 |
| 13C6-PFDA (surr.) | 1 | % | - | 65 | 71 | 65 |
| 13C2-PFUnDA (surr.) | 1 | % | - | 58 | 62 | 55 |
| 13C2-PFDoDA (surr.) | 1 | % | - | 60 | 64 | 59 |
| 13C2-PFTeDA (surr.) | 1 | % | - | 68 | 72 | 66 |
| **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 | % | - | 74 | 85 | 72 |
| D3-N-MeFOSA (surr.) | 1 | % | - | 80 | 79 | 69 |
| D5-N-EtFOSA (surr.) | 1 | % | - | 97 | 102 | 100 |
| D7-N-MeFOSE (surr.) | 1 | % | - | 96 | 96 | 78 |
| D9-N-EtFOSE (surr.) | 1 | % | - | 104 | 114 | 98 |
| D5-N-EtFOSAA (surr.) | 1 | % | - | 57 | 67 | 55 |
| D3-N-MeFOSAA (surr.) | 1 | % | - | 68 | 78 | 65 |
| **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 | % | - | 91 | 94 | 93 |
| 18O2-PFHxS (surr.) | 1 | % | - | 79 | 82 | 77 |
| 13C8-PFOS (surr.) | 1 | % | - | 87 | 94 | 83 |
| **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 | % | - | 42 | 48 | 45 |

| Client Sample ID | | | UST01_0.4_0.5 | QC20221017_01 | QC20221017_02 | HD01_0.4_0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043730 | S22-Oc0043733 | S22-Oc0043734 | S22-Oc0043735 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)** | | | | | | |
| 13C2-6:2 FTSA (surr.) | 1 | % | - | 42 | 47 | 42 |
| 13C2-8:2 FTSA (surr.) | 1 | % | - | 36 | 42 | 38 |
| 13C2-10:2 FTSA (surr.) | 1 | % | - | 69 | 75 | 64 |
| **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 |

| Client Sample ID | | | HD02_0.8_0.9 | DG07_0_0.1 |
|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043736 | S22-Oc0043737 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | |
| **Total Recoverable Hydrocarbons** | | | | |
| TRH C6-C9 | 20 | mg/kg | - | < 20 |
| TRH C10-C14 | 20 | mg/kg | - | < 20 |
| TRH C15-C28 | 50 | mg/kg | - | 61 |
| TRH C29-C36 | 50 | mg/kg | - | 100 |
| TRH C10-C36 (Total) | 50 | mg/kg | - | 161 |
| Naphthalene[N02] | 0.5 | mg/kg | - | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | - | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | - | < 20 |
| TRH >C10-C16 | 50 | mg/kg | - | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | - | < 50 |
| TRH >C16-C34 | 100 | mg/kg | - | 130 |
| TRH >C34-C40 | 100 | mg/kg | - | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | - | 130 |
| **BTEX** | | | | |
| Benzene | 0.1 | mg/kg | - | < 0.1 |
| Toluene | 0.1 | mg/kg | - | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | - | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | - | < 0.2 |
| o-Xylene | 0.1 | mg/kg | - | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | - | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | - | 89 |
| **Polycyclic Aromatic Hydrocarbons** | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | - | < 0.5 |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | - | 0.6 |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | - | 1.2 |
| Acenaphthene | 0.5 | mg/kg | - | < 0.5 |
| Acenaphthylene | 0.5 | mg/kg | - | < 0.5 |
| Anthracene | 0.5 | mg/kg | - | < 0.5 |
| Benz(a)anthracene | 0.5 | mg/kg | - | < 0.5 |
| Benzo(a)pyrene | 0.5 | mg/kg | - | < 0.5 |

| Client Sample ID | | | HD02_0.8_0.9 | DG07_0_0.1 |
|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043736 | S22-Oc0043737 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | - | < 0.5 |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | - | < 0.5 |
| Benzo(k)fluoranthene | 0.5 | mg/kg | - | < 0.5 |
| Chrysene | 0.5 | mg/kg | - | < 0.5 |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | - | < 0.5 |
| Fluoranthene | 0.5 | mg/kg | - | < 0.5 |
| Fluorene | 0.5 | mg/kg | - | < 0.5 |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | - | < 0.5 |
| Naphthalene | 0.5 | mg/kg | - | < 0.5 |
| Phenanthrene | 0.5 | mg/kg | - | < 0.5 |
| Pyrene | 0.5 | mg/kg | - | < 0.5 |
| Total PAH* | 0.5 | mg/kg | - | < 0.5 |
| 2-Fluorobiphenyl (surr.) | 1 | % | - | 107 |
| p-Terphenyl-d14 (surr.) | 1 | % | - | 96 |
| **Organochlorine Pesticides** | | | | |
| Chlordanes - Total | 0.1 | mg/kg | - | < 0.1 |
| 4.4'-DDD | 0.05 | mg/kg | - | < 0.05 |
| 4.4'-DDE | 0.05 | mg/kg | - | < 0.05 |
| 4.4'-DDT | 0.05 | mg/kg | - | < 0.05 |
| a-HCH | 0.05 | mg/kg | - | < 0.05 |
| Aldrin | 0.05 | mg/kg | - | < 0.05 |
| b-HCH | 0.05 | mg/kg | - | < 0.05 |
| d-HCH | 0.05 | mg/kg | - | < 0.05 |
| Dieldrin | 0.05 | mg/kg | - | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | - | < 0.05 |
| Endosulfan II | 0.05 | mg/kg | - | < 0.05 |
| Endosulfan sulphate | 0.05 | mg/kg | - | < 0.05 |
| Endrin | 0.05 | mg/kg | - | < 0.05 |
| Endrin aldehyde | 0.05 | mg/kg | - | < 0.05 |
| Endrin ketone | 0.05 | mg/kg | - | < 0.05 |
| g-HCH (Lindane) | 0.05 | mg/kg | - | < 0.05 |
| Heptachlor | 0.05 | mg/kg | - | < 0.05 |
| Heptachlor epoxide | 0.05 | mg/kg | - | < 0.05 |
| Hexachlorobenzene | 0.05 | mg/kg | - | < 0.05 |
| Methoxychlor | 0.05 | mg/kg | - | < 0.05 |
| Toxaphene | 0.5 | mg/kg | - | < 0.5 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | - | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | - | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | - | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | - | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | - | 112 |
| Tetrachloro-m-xylene (surr.) | 1 | % | - | 115 |
| **Polychlorinated Biphenyls** | | | | |
| Aroclor-1016 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1221 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1232 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1242 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1248 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1254 | 0.1 | mg/kg | - | < 0.1 |

| Client Sample ID | | | HD02_0.8_0.9 | DG07_0_0.1 |
|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043736 | S22-Oc0043737 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | |
| **Polychlorinated Biphenyls** | | | | |
| Aroclor-1260 | 0.1 | mg/kg | - | < 0.1 |
| Total PCB* | 0.1 | mg/kg | - | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | - | 112 |
| Tetrachloro-m-xylene (surr.) | 1 | % | - | 115 |
| | | | | |
| % Moisture | 1 | % | 18 | 14 |
| **Heavy Metals** | | | | |
| Arsenic | 2 | mg/kg | - | 6.6 |
| Cadmium | 0.4 | mg/kg | - | 1.7 |
| Chromium | 5 | mg/kg | - | 21 |
| Copper | 5 | mg/kg | - | 49 |
| Lead | 5 | mg/kg | - | 120 |
| Mercury | 0.1 | mg/kg | - | < 0.1 |
| Nickel | 5 | mg/kg | - | 8.4 |
| Zinc | 5 | mg/kg | - | 130 |
| **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 | % | 86 | 96 |
| 13C5-PFPeA (surr.) | 1 | % | 77 | 85 |
| 13C5-PFHxA (surr.) | 1 | % | 72 | 74 |
| 13C4-PFHpA (surr.) | 1 | % | 52 | 56 |
| 13C8-PFOA (surr.) | 1 | % | 64 | 69 |
| 13C5-PFNA (surr.) | 1 | % | 63 | 75 |
| 13C6-PFDA (surr.) | 1 | % | 65 | 72 |
| 13C2-PFUnDA (surr.) | 1 | % | 53 | 60 |
| 13C2-PFDoDA (surr.) | 1 | % | 57 | 62 |
| 13C2-PFTeDA (surr.) | 1 | % | 64 | 66 |
| **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 | | | HD02_0.8_0.9 | DG07_0_0.1 |
|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil |
| Eurofins Sample No. | | | S22-Oc0043736 | S22-Oc0043737 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | |
| **Perfluoroalkyl sulfonamido substances** | | | | |
| 13C8-FOSA (surr.) | 1 | % | 73 | 71 |
| D3-N-MeFOSA (surr.) | 1 | % | 71 | 72 |
| D5-N-EtFOSA (surr.) | 1 | % | 103 | 97 |
| D7-N-MeFOSE (surr.) | 1 | % | 82 | 93 |
| D9-N-EtFOSE (surr.) | 1 | % | 104 | 97 |
| D5-N-EtFOSAA (surr.) | 1 | % | 56 | 57 |
| D3-N-MeFOSAA (surr.) | 1 | % | 70 | 72 |
| **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 | % | 85 | 90 |
| 18O2-PFHxS (surr.) | 1 | % | 82 | 79 |
| 13C8-PFOS (surr.) | 1 | % | 82 | 87 |
| **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 | % | 40 | 51 |
| 13C2-6:2 FTSA (surr.) | 1 | % | 44 | 54 |
| 13C2-8:2 FTSA (surr.) | 1 | % | 34 | 41 |
| 13C2-10:2 FTSA (surr.) | 1 | % | 52 | 66 |
| **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 |
|---|---|---|---|
| JBS&G Suite 2 | | | |
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Sydney | Oct 22, 2022 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Oct 22, 2022 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Oct 22, 2022 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Sydney | Oct 22, 2022 | 14 Days |
| - Method: LTM-ORG-2010 BTEX and Volatile TRH | | | |
| Polycyclic Aromatic Hydrocarbons | Sydney | Oct 22, 2022 | 14 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water | | | |
| Organochlorine Pesticides | Sydney | Oct 22, 2022 | 14 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Polychlorinated Biphenyls | Sydney | Oct 22, 2022 | 28 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Metals M8 | Sydney | Oct 22, 2022 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| % Clay | Brisbane | Oct 24, 2022 | 14 Days |
| - Method: LTM-GEN-7040 | | | |
| pH (1:5 Aqueous extract at 25 °C as rec.) | Sydney | Oct 21, 2022 | 7 Days |
| - Method: LTM-GEN-7090 pH by ISE | | | |
| Total Organic Carbon | Melbourne | Oct 24, 2022 | 28 Days |
| - Method: LTM-INO-4060 Total Organic Carbon in water and soil | | | |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | Melbourne | Oct 24, 2022 | 7 Days |
| - Method: LTM-INO-4030 Conductivity | | | |
| Cation Exchange Capacity | Melbourne | Oct 24, 2022 | 28 Days |
| - Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage | | | |
| % Moisture | Sydney | Oct 21, 2022 | 14 Days |
| - Method: LTM-GEN-7080 Moisture | | | |
| Per- and Polyfluoroalkyl Substances (PFASs) | | | |
| Perfluoroalkyl carboxylic acids (PFCAs) | Brisbane | Oct 24, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Perfluoroalkyl sulfonamido substances | Brisbane | Oct 24, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Perfluoroalkyl sulfonic acids (PFSAs) | Brisbane | Oct 24, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) | Brisbane | Oct 24, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |

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IANZ# 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** EDPARK-OP
**Project ID:** 63325

**Order No.:**
**Report #:** 933769
**Phone:** 02 8245 0300
**Fax:**

**Received:** Oct 19, 2022 5:56 PM
**Due:** Oct 26, 2022
**Priority:** 3 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25 °C as rec.) | Total Organic Carbon | Polycyclic Aromatic Hydrocarbons | Metals M8 | BTEX | Moisture Set | Moisture Set | Cation Exchange Capacity | Total Recoverable Hydrocarbons | JBS&G Suite 2 | Per- and Polyfluoroalkyl Substances (PFASs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | | X | | | | | | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| **External Laboratory** | | | | | | | | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | | | | | | | | |
| 1 | DG01_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043702 | X | X | | | X | X | | | | | X | X | | X | X |
| 2 | SP02_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043703 | | X | | | | | | | | | X | | | X | X |
| 3 | SP04_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043704 | | X | | | | | | | | | X | | | X | X |
| 4 | SP03_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043705 | | X | | | | | | | | | X | | | X | X |
| 5 | SP01_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043706 | | X | | | | | | | | | X | | | X | X |
| 6 | DG02_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043707 | | X | | | | | | | | | X | | | X | X |
| 7 | DG03_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043708 | | X | | | | | | | | | X | | | X | X |
| 8 | PF01_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043709 | | X | | | | | X | X | X | | X | | X | | |
| 9 | PF01_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043710 | | | | | | | X | | X | | X | | X | | |
| 10 | PF02_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043711 | | X | | | | | X | X | X | | X | | X | | |
| 11 | PF03_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043712 | | X | | | | | X | X | X | | X | | X | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | | X | | | | | | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| 12 | PF04_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043713 | X | X | | | X | X | X | X | X | | X | X | X | | |
| 13 | PF04_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043714 | | | | | | | X | | X | | X | | X | | |
| 14 | PF05_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043715 | | X | | | | | X | X | X | | X | | X | | |
| 15 | PF05_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043716 | | | | | | | X | | X | | X | | X | | |
| 16 | PF06_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043717 | | X | | | | | X | X | X | | X | | X | | |
| 17 | PF07_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043718 | | X | | | | | X | X | X | | X | | X | | |
| 18 | PF07_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043719 | | | | | | | X | | X | | X | | X | | |
| 19 | PF09_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043720 | | X | | | | | X | X | X | | X | | X | | |
| 20 | PF09_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043721 | | | | | | | X | | X | | X | | X | | |
| 21 | PF08_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043722 | | X | | | | | X | X | X | | X | | X | | |
| 22 | FT03_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043723 | | X | | | | | | | | | X | | | X | |
| 23 | DG04_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043724 | | X | | | | | | | | | X | | | | X |
| 24 | DG04_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043725 | | | | | | | | | | | X | | | X | |
| 25 | FT02_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043726 | | | | | | | | | | | X | | | X | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | | X | | | | | | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| 26 | FT01_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043727 | | | | | | | | | | | X | | | X | |
| 27 | DG05_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043728 | | | | | | | | | | | X | | | X | X |
| 28 | UST01_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043729 | | X | | | | | X | X | X | | X | | X | | |
| 29 | UST01_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043730 | | | | | | | X | | X | | X | | X | | |
| 30 | DG06_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043731 | | | X | | | | | | | | | | | | |
| 31 | DG06_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043732 | | | X | | | | | | | | | | | | |
| 32 | QC20221017_01 | Oct 17, 2022 | | Soil | S22-Oc0043733 | | | | | | | | | | | X | | | X | X |
| 33 | QC20221017_02 | Oct 17, 2022 | | Soil | S22-Oc0043734 | | | | | | | | | | | X | | | X | X |
| 34 | HD01_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043735 | | | | | | | | | | X | | | | | X |
| 35 | HD02_0.8_0.9 | Oct 17, 2022 | | Soil | S22-Oc0043736 | | | | | | | | | | X | | | | | X |
| 36 | DG07_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043737 | | | | | | | | | | | X | | | X | X |

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**Project ID:** 63325

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | | X | | | | | | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| 37 | DG01_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043738 | | | | X | | | | | | | | | | | |
| 38 | DG01_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043739 | | | | X | | | | | | | | | | | |
| 39 | SP02_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043740 | | | | X | | | | | | | | | | | |
| 40 | SP02_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043741 | | | | X | | | | | | | | | | | |
| 41 | SP02_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043742 | | | | X | | | | | | | | | | | |
| 42 | SP04_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043743 | | | | X | | | | | | | | | | | |
| 43 | SP04_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043744 | | | | X | | | | | | | | | | | |
| 44 | SP04_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043745 | | | | X | | | | | | | | | | | |
| 45 | SP03_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043746 | | | | X | | | | | | | | | | | |
| 46 | SP03_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043747 | | | | X | | | | | | | | | | | |
| 47 | SP03_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043748 | | | | X | | | | | | | | | | | |
| 48 | SP01_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043749 | | | | X | | | | | | | | | | | |
| 49 | SP01_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043750 | | | | X | | | | | | | | | | | |
| 50 | SP01_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043751 | | | | X | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| 51 | DG02_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043752 | | | | X | | | | | | | | | | | |
| 52 | DG03_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043753 | | | | X | | | | | | | | | | | |
| 53 | PF02_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043754 | | | | X | | | | | | | | | | | |
| 54 | PF03_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043755 | | | | X | | | | | | | | | | | |
| 55 | PF06_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043756 | | | | X | | | | | | | | | | | |
| 56 | PF08_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043757 | | | | X | | | | | | | | | | | |
| 57 | PF05_ASH | Oct 17, 2022 | | Soil | S22-Oc0043758 | | | | X | | | | | | | | | | | |
| 58 | PF06_ASH | Oct 17, 2022 | | Soil | S22-Oc0043759 | | | | X | | | | | | | | | | | |
| 59 | PF07_ASH | Oct 17, 2022 | | Soil | S22-Oc0043760 | | | | X | | | | | | | | | | | |
| 60 | PF08_ASH | Oct 17, 2022 | | Soil | S22-Oc0043761 | | | | X | | | | | | | | | | | |
| 61 | PF09_ASH | Oct 17, 2022 | | Soil | S22-Oc0043762 | | | X | | | | | | | | | | | | |
| 62 | FT03_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043763 | | | | X | | | | | | | | | | | |
| 63 | FT02_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043764 | | | | X | | | | | | | | | | | |
| 64 | FT02_0.4_0.5 | Oct 17, 2022 | | Soil | S22-Oc0043765 | | | | X | | | | | | | | | | | |

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| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | X | | | | | | | | | X | X | | | | X |
| 65 | FT02_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043766 | | | | X | | | | | | | | | | | |
| 66 | FT01_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043767 | | | | X | | | | | | | | | | | |
| 67 | DG05_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043768 | | | | X | | | | | | | | | | | |
| 68 | UST01_0_0.1 | Oct 17, 2022 | | Soil | S22-Oc0043769 | | | | X | | | | | | | | | | | |
| 69 | UST01_0.9_1 | Oct 17, 2022 | | Soil | S22-Oc0043770 | | | | X | | | | | | | | | | | |
| 70 | TS | Oct 17, 2022 | | Water | S22-Oc0043771 | | | | X | | | | | | | | | | | |
| 71 | TB | Oct 17, 2022 | | Water | S22-Oc0043772 | | | | X | | | | | | | | | | | |
| 72 | BLANK | Oct 17, 2022 | | Water | S22-Oc0043773 | | | | X | | | | | | | | | | | |
| 73 | DG07_0.2_0.3 | Oct 17, 2022 | | Soil | S22-Oc0043774 | | | | X | | | | | | | | | | | |
| **Test Counts** | | | | | | 2 | 19 | 3 | 36 | 2 | 2 | 16 | 10 | 16 | 34 | 34 | 2 | 16 | 15 | 14 |

## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

### Units

**mg/kg:** milligrams per kilogram
**mg/L:** milligrams per litre
**µg/L:** micrograms per litre
**ppm:** parts per million
**ppb:** parts per billion
**%:** Percentage
**org/100 mL:** Organisms per 100 millilitres
**NTU:** Nephelometric Turbidity Units
**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres

### Terms

| | |
|---|---|
| **APHA** | American Public Health Association |
| **COC** | Chain of Custody |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **CRM** | Certified Reference Material (ISO17034) - reported as percent recovery. |
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **LOR** | Limit of Reporting. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **SRA** | Sample Receipt Advice |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **TBTO** | Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits. |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **TEQ** | Toxic Equivalency Quotient or Total Equivalence |
| **QSM** | US Department of Defense Quality Systems Manual Version 5.4 |
| **US EPA** | United States Environmental Protection Agency |
| **WA DWER** | Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA |

### QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

### QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C6-C9 | mg/kg | < 20 | | | 20 | Pass | |
| TRH C10-C14 | mg/kg | < 20 | | | 20 | Pass | |
| TRH C15-C28 | mg/kg | < 50 | | | 50 | Pass | |
| TRH C29-C36 | mg/kg | < 50 | | | 50 | Pass | |
| Naphthalene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| TRH C6-C10 | mg/kg | < 20 | | | 20 | Pass | |
| TRH >C10-C16 | mg/kg | < 50 | | | 50 | Pass | |
| TRH >C16-C34 | mg/kg | < 100 | | | 100 | Pass | |
| TRH >C34-C40 | mg/kg | < 100 | | | 100 | Pass | |
| **Method Blank** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Toluene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Ethylbenzene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| m&p-Xylenes | mg/kg | < 0.2 | | | 0.2 | Pass | |
| o-Xylene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Xylenes - Total* | mg/kg | < 0.3 | | | 0.3 | Pass | |
| **Method Blank** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Acenaphthylene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benz(a)anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(a)pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(b&j)fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(g.h.i)perylene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(k)fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Chrysene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Dibenz(a.h)anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Fluorene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Indeno(1.2.3-cd)pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Naphthalene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Phenanthrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | mg/kg | < 0.1 | | | 0.1 | Pass | |
| 4.4'-DDD | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDE | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDT | mg/kg | < 0.05 | | | 0.05 | Pass | |
| a-HCH | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Aldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| b-HCH | mg/kg | < 0.05 | | | 0.05 | Pass | |
| d-HCH | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Dieldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan I | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan II | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan sulphate | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin | mg/kg | < 0.05 | | | 0.05 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin ketone | mg/kg | < 0.05 | | | 0.05 | Pass | |
| g-HCH (Lindane) | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor epoxide | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Hexachlorobenzene | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Methoxychlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Toxaphene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1221 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1232 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1242 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1248 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1254 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1260 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Total PCB* | mg/kg | < 0.1 | | | 0.1 | Pass | |
| **Method Blank** | | | | | | | |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | uS/cm | < 10 | | | 10 | Pass | |
| Total Organic Carbon | % | < 0.1 | | | 0.1 | Pass | |
| **Method Blank** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | mg/kg | < 2 | | | 2 | Pass | |
| Cadmium | mg/kg | < 0.4 | | | 0.4 | Pass | |
| Chromium | mg/kg | < 5 | | | 5 | Pass | |
| Copper | mg/kg | < 5 | | | 5 | Pass | |
| Lead | mg/kg | < 5 | | | 5 | Pass | |
| Mercury | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Nickel | mg/kg | < 5 | | | 5 | Pass | |
| Zinc | mg/kg | < 5 | | | 5 | Pass | |
| **Method Blank** | | | | | | | |
| **Cation Exchange Capacity** | | | | | | | |
| Cation Exchange Capacity | meq/100g | < 0.05 | | | 0.05 | 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 | |
| **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 | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| 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** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C6-C9 | % | 84 | | | 70-130 | Pass | |
| TRH C10-C14 | % | 75 | | | 70-130 | Pass | |
| Naphthalene | % | 90 | | | 70-130 | Pass | |
| TRH C6-C10 | % | 84 | | | 70-130 | Pass | |
| TRH >C10-C16 | % | 73 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 92 | | | 70-130 | Pass | |
| Toluene | % | 86 | | | 70-130 | Pass | |
| Ethylbenzene | % | 84 | | | 70-130 | Pass | |
| m&p-Xylenes | % | 87 | | | 70-130 | Pass | |
| o-Xylene | % | 85 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 86 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | % | 86 | | | 70-130 | Pass | |
| Acenaphthylene | % | 91 | | | 70-130 | Pass | |
| Anthracene | % | 74 | | | 70-130 | Pass | |
| Benz(a)anthracene | % | 78 | | | 70-130 | Pass | |
| Benzo(a)pyrene | % | 82 | | | 70-130 | Pass | |
| Benzo(b&j)fluoranthene | % | 78 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | % | 83 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | % | 115 | | | 70-130 | Pass | |
| Chrysene | % | 102 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | % | 72 | | | 70-130 | Pass | |
| Fluoranthene | % | 78 | | | 70-130 | Pass | |
| Fluorene | % | 84 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | % | 71 | | | 70-130 | Pass | |
| Naphthalene | % | 89 | | | 70-130 | Pass | |
| Phenanthrene | % | 77 | | | 70-130 | Pass | |
| Pyrene | % | 84 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | % | 81 | | | 70-130 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| 4.4'-DDD | % | 94 | | | 70-130 | Pass | |
| 4.4'-DDE | % | 87 | | | 70-130 | Pass | |
| 4.4'-DDT | % | 87 | | | 70-130 | Pass | |
| a-HCH | % | 97 | | | 70-130 | Pass | |
| Aldrin | % | 88 | | | 70-130 | Pass | |
| b-HCH | % | 95 | | | 70-130 | Pass | |
| d-HCH | % | 81 | | | 70-130 | Pass | |
| Dieldrin | % | 90 | | | 70-130 | Pass | |
| Endosulfan I | % | 87 | | | 70-130 | Pass | |
| Endosulfan II | % | 82 | | | 70-130 | Pass | |
| Endosulfan sulphate | % | 73 | | | 70-130 | Pass | |
| Endrin | % | 78 | | | 70-130 | Pass | |
| Endrin aldehyde | % | 73 | | | 70-130 | Pass | |
| Endrin ketone | % | 80 | | | 70-130 | Pass | |
| g-HCH (Lindane) | % | 88 | | | 70-130 | Pass | |
| Heptachlor | % | 109 | | | 70-130 | Pass | |
| Heptachlor epoxide | % | 89 | | | 70-130 | Pass | |
| Hexachlorobenzene | % | 86 | | | 70-130 | Pass | |
| Methoxychlor | % | 112 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | % | 80 | | | 70-130 | Pass | |
| Aroclor-1260 | % | 81 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| % Clay | % | 104 | | | 70-130 | Pass | |
| Total Organic Carbon | % | 99 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | % | 99 | | | 80-120 | Pass | |
| Cadmium | % | 98 | | | 80-120 | Pass | |
| Chromium | % | 104 | | | 80-120 | Pass | |
| Copper | % | 105 | | | 80-120 | Pass | |
| Lead | % | 104 | | | 80-120 | Pass | |
| Mercury | % | 113 | | | 80-120 | Pass | |
| Nickel | % | 104 | | | 80-120 | Pass | |
| Zinc | % | 103 | | | 80-120 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | | | | |
| Perfluorobutanoic acid (PFBA) | % | 99 | | | 50-150 | Pass | |
| Perfluoropentanoic acid (PFPeA) | % | 107 | | | 50-150 | Pass | |
| Perfluorohexanoic acid (PFHxA) | % | 110 | | | 50-150 | Pass | |
| Perfluoroheptanoic acid (PFHpA) | % | 99 | | | 50-150 | Pass | |
| Perfluorooctanoic acid (PFOA) | % | 109 | | | 50-150 | Pass | |
| Perfluorononanoic acid (PFNA) | % | 111 | | | 50-150 | Pass | |
| Perfluorodecanoic acid (PFDA) | % | 97 | | | 50-150 | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | % | 109 | | | 50-150 | Pass | |
| Perfluorododecanoic acid (PFDoDA) | % | 107 | | | 50-150 | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | % | 106 | | | 50-150 | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | % | 124 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | % | 87 | | | 50-150 | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | % | 111 | | | 50-150 | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | % | 122 | | | 50-150 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | % | 104 | | | 50-150 | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | % | 91 | | | 50-150 | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | % | 123 | | | 50-150 | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | % | 114 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | | | | |
| Perfluorobutanesulfonic acid (PFBS) | % | 95 | | | 50-150 | Pass | |
| Perfluorononanesulfonic acid (PFNS) | % | 102 | | | 50-150 | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | % | 131 | | | 50-150 | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | % | 102 | | | 50-150 | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | % | 99 | | | 50-150 | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | % | 91 | | | 50-150 | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | % | 88 | | | 50-150 | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | % | 80 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)** | | | | | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | % | 111 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | % | 131 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | % | 141 | | | 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** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | | | | | |
| TRH C10-C14 | S22-Oc0042184 | NCP | % | 72 | | | 70-130 | Pass | |
| TRH >C10-C16 | S22-Oc0042215 | NCP | % | 77 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | | | | | |
| Acenaphthene | S22-Oc0041521 | NCP | % | 87 | | | 70-130 | Pass | |
| Acenaphthylene | S22-Oc0041521 | NCP | % | 102 | | | 70-130 | Pass | |
| Benz(a)anthracene | S22-Oc0041521 | NCP | % | 104 | | | 70-130 | Pass | |
| Benzo(a)pyrene | S22-Oc0041521 | NCP | % | 88 | | | 70-130 | Pass | |
| Benzo(b&j)fluoranthene | S22-Oc0041521 | NCP | % | 94 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | S22-Oc0041521 | NCP | % | 79 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | S22-Oc0041521 | NCP | % | 75 | | | 70-130 | Pass | |
| Chrysene | S22-Oc0041521 | NCP | % | 73 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | S22-Oc0041521 | NCP | % | 78 | | | 70-130 | Pass | |
| Fluoranthene | S22-Oc0041521 | NCP | % | 80 | | | 70-130 | Pass | |
| Fluorene | S22-Oc0041521 | NCP | % | 88 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | S22-Oc0041521 | NCP | % | 77 | | | 70-130 | Pass | |
| Naphthalene | S22-Oc0041521 | NCP | % | 87 | | | 70-130 | Pass | |
| Phenanthrene | S22-Oc0041521 | NCP | % | 86 | | | 70-130 | Pass | |
| Pyrene | S22-Oc0041521 | NCP | % | 89 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | | | | | |
| Chlordanes - Total | S22-Oc0043702 | CP | % | 84 | | | 70-130 | Pass | |
| 4.4'-DDD | S22-Oc0043702 | CP | % | 105 | | | 70-130 | Pass | |
| 4.4'-DDE | S22-Oc0043702 | CP | % | 92 | | | 70-130 | Pass | |
| 4.4'-DDT | S22-Oc0043702 | CP | % | 93 | | | 70-130 | Pass | |
| a-HCH | S22-Oc0043702 | CP | % | 93 | | | 70-130 | Pass | |
| Aldrin | S22-Oc0043702 | CP | % | 88 | | | 70-130 | Pass | |
| b-HCH | S22-Oc0043702 | CP | % | 88 | | | 70-130 | Pass | |
| d-HCH | S22-Oc0043702 | CP | % | 81 | | | 70-130 | Pass | |
| Dieldrin | S22-Oc0043702 | CP | % | 88 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Endosulfan I | S22-Oc0043702 | CP | % | 96 | | | 70-130 | Pass | |
| Endosulfan II | S22-Oc0043702 | CP | % | 95 | | | 70-130 | Pass | |
| Endosulfan sulphate | S22-Oc0043702 | CP | % | 85 | | | 70-130 | Pass | |
| Endrin | S22-Oc0043702 | CP | % | 103 | | | 70-130 | Pass | |
| Endrin aldehyde | S22-Oc0043702 | CP | % | 85 | | | 70-130 | Pass | |
| Endrin ketone | S22-Oc0043702 | CP | % | 80 | | | 70-130 | Pass | |
| g-HCH (Lindane) | S22-Oc0043702 | CP | % | 99 | | | 70-130 | Pass | |
| Heptachlor | S22-Oc0043702 | CP | % | 93 | | | 70-130 | Pass | |
| Heptachlor epoxide | S22-Oc0043702 | CP | % | 89 | | | 70-130 | Pass | |
| Hexachlorobenzene | S22-Oc0043702 | CP | % | 86 | | | 70-130 | Pass | |
| Methoxychlor | S22-Oc0043702 | CP | % | 110 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Polychlorinated Biphenyls** | | | | Result 1 | | | | | |
| Aroclor-1016 | S22-Oc0043702 | CP | % | 78 | | | 70-130 | Pass | |
| Aroclor-1260 | S22-Oc0043702 | CP | % | 95 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | S22-Oc0043703 | CP | % | 104 | | | 75-125 | Pass | |
| Cadmium | S22-Oc0043703 | CP | % | 101 | | | 75-125 | Pass | |
| Chromium | S22-Oc0043703 | CP | % | 107 | | | 75-125 | Pass | |
| Copper | S22-Oc0043703 | CP | % | 111 | | | 75-125 | Pass | |
| Lead | S22-Oc0043703 | CP | % | 106 | | | 75-125 | Pass | |
| Mercury | S22-Oc0043703 | CP | % | 109 | | | 75-125 | Pass | |
| Nickel | S22-Oc0043703 | CP | % | 107 | | | 75-125 | Pass | |
| Zinc | S22-Oc0043703 | CP | % | 115 | | | 75-125 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | | | | | |
| TRH C6-C9 | S22-Oc0043706 | CP | % | 77 | | | 70-130 | Pass | |
| Naphthalene | S22-Oc0043706 | CP | % | 74 | | | 70-130 | Pass | |
| TRH C6-C10 | S22-Oc0043706 | CP | % | 77 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |
| Benzene | S22-Oc0043706 | CP | % | 80 | | | 70-130 | Pass | |
| Toluene | S22-Oc0043706 | CP | % | 77 | | | 70-130 | Pass | |
| Ethylbenzene | S22-Oc0043706 | CP | % | 73 | | | 70-130 | Pass | |
| m&p-Xylenes | S22-Oc0043706 | CP | % | 74 | | | 70-130 | Pass | |
| o-Xylene | S22-Oc0043706 | CP | % | 74 | | | 70-130 | Pass | |
| Xylenes - Total* | S22-Oc0043706 | CP | % | 74 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | | | | | |
| TRH C6-C9 | S22-Oc0043716 | CP | % | 74 | | | 70-130 | Pass | |
| Naphthalene | S22-Oc0043716 | CP | % | 71 | | | 70-130 | Pass | |
| TRH C6-C10 | S22-Oc0043716 | CP | % | 74 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |
| Benzene | S22-Oc0043716 | CP | % | 80 | | | 70-130 | Pass | |
| Toluene | S22-Oc0043716 | CP | % | 75 | | | 70-130 | Pass | |
| Ethylbenzene | S22-Oc0043716 | CP | % | 77 | | | 70-130 | Pass | |
| m&p-Xylenes | S22-Oc0043716 | CP | % | 76 | | | 70-130 | Pass | |
| o-Xylene | S22-Oc0043716 | CP | % | 76 | | | 70-130 | Pass | |
| Xylenes - Total* | S22-Oc0043716 | CP | % | 76 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | S22-Oc0043717 | CP | % | 101 | | | 75-125 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Cadmium | S22-Oc0043717 | CP | % | 101 | | | 75-125 | Pass | |
| Chromium | S22-Oc0043717 | CP | % | 110 | | | 75-125 | Pass | |
| Copper | S22-Oc0043717 | CP | % | 97 | | | 75-125 | Pass | |
| Lead | S22-Oc0043717 | CP | % | 103 | | | 75-125 | Pass | |
| Mercury | S22-Oc0043717 | CP | % | 107 | | | 75-125 | Pass | |
| Nickel | S22-Oc0043717 | CP | % | 98 | | | 75-125 | Pass | |
| Zinc | S22-Oc0043717 | CP | % | 91 | | | 75-125 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | Result 1 | | | | | |
| Perfluorobutanoic acid (PFBA) | S22-Oc0043733 | CP | % | 98 | | | 50-150 | Pass | |
| Perfluoropentanoic acid (PFPeA) | S22-Oc0043733 | CP | % | 106 | | | 50-150 | Pass | |
| Perfluorohexanoic acid (PFHxA) | S22-Oc0043733 | CP | % | 106 | | | 50-150 | Pass | |
| Perfluoroheptanoic acid (PFHpA) | S22-Oc0043733 | CP | % | 99 | | | 50-150 | Pass | |
| Perfluorooctanoic acid (PFOA) | S22-Oc0043733 | CP | % | 112 | | | 50-150 | Pass | |
| Perfluorononanoic acid (PFNA) | S22-Oc0043733 | CP | % | 106 | | | 50-150 | Pass | |
| Perfluorodecanoic acid (PFDA) | S22-Oc0043733 | CP | % | 98 | | | 50-150 | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | S22-Oc0043733 | CP | % | 113 | | | 50-150 | Pass | |
| Perfluorododecanoic acid (PFDoDA) | S22-Oc0043733 | CP | % | 107 | | | 50-150 | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | S22-Oc0043733 | CP | % | 105 | | | 50-150 | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | S22-Oc0043733 | CP | % | 119 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | Result 1 | | | | | |
| Perfluorooctane sulfonamide (FOSA) | S22-Oc0043733 | CP | % | 86 | | | 50-150 | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | S22-Oc0043733 | CP | % | 120 | | | 50-150 | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | S22-Oc0043733 | CP | % | 119 | | | 50-150 | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | S22-Oc0043733 | CP | % | 122 | | | 50-150 | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | S22-Oc0043733 | CP | % | 91 | | | 50-150 | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | S22-Oc0043733 | CP | % | 116 | | | 50-150 | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | S22-Oc0043733 | CP | % | 112 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | Result 1 | | | | | |
| Perfluorobutanesulfonic acid (PFBS) | S22-Oc0043733 | CP | % | 101 | | | 50-150 | Pass | |
| Perfluorononanesulfonic acid (PFNS) | S22-Oc0043733 | CP | % | 98 | | | 50-150 | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | S22-Oc0043733 | CP | % | 132 | | | 50-150 | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | S22-Oc0043733 | CP | % | 93 | | | 50-150 | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | S22-Oc0043733 | CP | % | 91 | | | 50-150 | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | S22-Oc0043733 | CP | % | 92 | | | 50-150 | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | S22-Oc0043733 | CP | % | 88 | | | 50-150 | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | S22-Oc0043733 | CP | % | 81 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)** | | | | Result 1 | | | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | S22-Oc0043733 | CP | % | 98 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | S22-Oc0043733 | CP | % | 113 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | S22-Oc0043733 | CP | % | 121 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | S22-Oc0043733 | CP | % | 95 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | | | | | |
| Anthracene | N22-Oc0036307 | NCP | % | 79 | | | 70-130 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Clay | S22-Oc0043702 | CP | % | 5.1 | 5.1 | <1 | 30% | Pass | |
| pH (1:5 Aqueous extract at 25 °C as rec.) | S22-Oc0032421 | NCP | pH Units | 6.1 | 6.3 | <1 | 30% | Pass | |
| Total Organic Carbon | B22-Oc0040289 | NCP | % | 4.1 | 4.7 | 13 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S22-Oc0043702 | CP | mg/kg | 7.7 | 5.4 | 35 | 30% | Fail | Q15 |
| Cadmium | S22-Oc0043702 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S22-Oc0043702 | CP | mg/kg | 27 | 15 | 61 | 30% | Fail | Q15 |
| Copper | S22-Oc0043702 | CP | mg/kg | 16 | 19 | 14 | 30% | Pass | |
| Lead | S22-Oc0043702 | CP | mg/kg | 31 | 22 | 34 | 30% | Fail | Q15 |
| Mercury | S22-Oc0043702 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S22-Oc0043702 | CP | mg/kg | 12 | 8.9 | 29 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorobutanoic acid (PFBA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoropentanoic acid (PFPeA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorohexanoic acid (PFHxA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoroheptanoic acid (PFHpA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorooctanoic acid (PFOA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorononanoic acid (PFNA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorodecanoic acid (PFDA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorododecanoic acid (PFDoDA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorooctane sulfonamide (FOSA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |

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|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | Result 1 | Result 2 | RPD | | | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | S22-Oc0043702 | CP | ug/kg | < 10 | < 10 | <1 | 30% | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | S22-Oc0043702 | CP | ug/kg | < 10 | < 10 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorobutanesulfonic acid (PFBS) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorononanesulfonic acid (PFNS) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | S22-Oc0043702 | 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) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | S22-Oc0043702 | CP | ug/kg | < 10 | < 10 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | S22-Oc0043702 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S22-Oc0043703 | CP | % | 11 | 10 | 6.6 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Acenaphthene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Acenaphthylene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Anthracene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benz(a)anthracene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(a)pyrene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(b&j)fluoranthene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(g.h.i)perylene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(k)fluoranthene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Chrysene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Dibenz(a.h)anthracene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluoranthene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluorene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Indeno(1.2.3-cd)pyrene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Naphthalene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Phenanthrene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Pyrene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Chlordanes - Total | S22-Oc0043704 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| 4.4'-DDD | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDE | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDT | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| a-HCH | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Aldrin | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| b-HCH | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| d-HCH | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Dieldrin | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan I | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan II | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan sulphate | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin aldehyde | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin ketone | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| g-HCH (Lindane) | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor epoxide | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Hexachlorobenzene | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Methoxychlor | S22-Oc0043704 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Toxaphene | S22-Oc0043704 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polychlorinated Biphenyls** | | | | Result 1 | Result 2 | RPD | | | |
| Aroclor-1016 | S22-Oc0043704 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1221 | S22-Oc0043704 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1232 | S22-Oc0043704 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1242 | S22-Oc0043704 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1248 | S22-Oc0043704 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1254 | S22-Oc0043704 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1260 | S22-Oc0043704 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Total PCB* | S22-Oc0043704 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | S22-Oc0043705 | CP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| Naphthalene | S22-Oc0043705 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| TRH C6-C10 | S22-Oc0043705 | CP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | S22-Oc0043705 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Toluene | S22-Oc0043705 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Ethylbenzene | S22-Oc0043705 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| m&p-Xylenes | S22-Oc0043705 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| o-Xylene | S22-Oc0043705 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Xylenes - Total* | S22-Oc0043705 | CP | mg/kg | < 0.3 | < 0.3 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S22-Oc0043705 | CP | mg/kg | 7.9 | 7.7 | 3.4 | 30% | Pass | |
| Cadmium | S22-Oc0043705 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S22-Oc0043705 | CP | mg/kg | 18 | 11 | 42 | 30% | Fail | Q15 |
| Copper | S22-Oc0043705 | CP | mg/kg | 24 | 24 | 1.2 | 30% | Pass | |
| Lead | S22-Oc0043705 | CP | mg/kg | 27 | 34 | 24 | 30% | Pass | |
| Mercury | S22-Oc0043705 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S22-Oc0043705 | CP | mg/kg | 8.4 | 9.1 | 7.1 | 30% | Pass | |
| Zinc | S22-Oc0043705 | CP | mg/kg | 64 | 69 | 7.5 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Acenaphthene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Acenaphthylene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Anthracene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benz(a)anthracene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(a)pyrene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(b&j)fluoranthene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(g.h.i)perylene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(k)fluoranthene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Chrysene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Dibenz(a.h)anthracene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluoranthene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluorene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Indeno(1.2.3-cd)pyrene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Naphthalene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Phenanthrene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Pyrene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Chlordanes - Total | S22-Oc0043706 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| 4.4'-DDD | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDE | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDT | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| a-HCH | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Aldrin | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| b-HCH | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| d-HCH | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Dieldrin | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan I | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan II | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan sulphate | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin aldehyde | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin ketone | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| g-HCH (Lindane) | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor epoxide | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Hexachlorobenzene | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Methoxychlor | S22-Oc0043706 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Toxaphene | S22-Oc0043706 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polychlorinated Biphenyls** | | | | Result 1 | Result 2 | RPD | | | |
| Aroclor-1016 | S22-Oc0043706 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1221 | S22-Oc0043706 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1232 | S22-Oc0043706 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1242 | S22-Oc0043706 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1248 | S22-Oc0043706 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1254 | S22-Oc0043706 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1260 | S22-Oc0043706 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Total PCB* | S22-Oc0043706 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25 °C as rec.) | M22-Oc0045093 | NCP | uS/cm | 96 | 110 | 14 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S22-Oc0043714 | CP | % | 22 | 22 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | S22-Oc0043715 | CP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| Naphthalene | S22-Oc0043715 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| TRH C6-C10 | S22-Oc0043715 | CP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | S22-Oc0043715 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Toluene | S22-Oc0043715 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Ethylbenzene | S22-Oc0043715 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| m&p-Xylenes | S22-Oc0043715 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| o-Xylene | S22-Oc0043715 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Xylenes - Total* | S22-Oc0043715 | CP | mg/kg | < 0.3 | < 0.3 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S22-Oc0043724 | CP | % | 9.9 | 9.5 | 3.7 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C10-C14 | S22-Oc0043726 | CP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C15-C28 | S22-Oc0043726 | CP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH C29-C36 | S22-Oc0043726 | CP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH >C10-C16 | S22-Oc0043726 | CP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH >C16-C34 | S22-Oc0043726 | CP | mg/kg | < 100 | < 100 | <1 | 30% | Pass | |
| TRH >C34-C40 | S22-Oc0043726 | CP | mg/kg | < 100 | < 100 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S22-Oc0043729 | CP | mg/kg | 18 | 15 | 14 | 30% | Pass | |
| Cadmium | S22-Oc0043729 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S22-Oc0043729 | CP | mg/kg | 17 | 15 | 15 | 30% | Pass | |
| Copper | S22-Oc0043729 | CP | mg/kg | 23 | 23 | <1 | 30% | Pass | |
| Lead | S22-Oc0043729 | CP | mg/kg | 15 | 15 | 2.0 | 30% | Pass | |
| Mercury | S22-Oc0043729 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S22-Oc0043729 | CP | mg/kg | 12 | 12 | 1.9 | 30% | Pass | |
| Zinc | S22-Oc0043729 | CP | mg/kg | 38 | 45 | 19 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S22-Oc0043733 | CP | mg/kg | 2.5 | 2.7 | 7.5 | 30% | Pass | |
| Cadmium | S22-Oc0043733 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S22-Oc0043733 | CP | mg/kg | < 5 | 5.4 | 37 | 30% | Fail | Q15 |
| Copper | S22-Oc0043733 | CP | mg/kg | < 5 | 5.5 | 15 | 30% | Pass | |
| Lead | S22-Oc0043733 | CP | mg/kg | 6.8 | 6.9 | 1.3 | 30% | Pass | |
| Mercury | S22-Oc0043733 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S22-Oc0043733 | CP | mg/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Zinc | S22-Oc0043733 | CP | mg/kg | 26 | 29 | 10.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S22-Oc0043734 | CP | % | 15 | 15 | 2.1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorobutanoic acid (PFBA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoropentanoic acid (PFPeA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorohexanoic acid (PFHxA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoroheptanoic acid (PFHpA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorooctanoic acid (PFOA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorononanoic acid (PFNA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorodecanoic acid (PFDA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorododecanoic acid (PFDoDA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorooctane sulfonamide (FOSA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | S22-Oc0043735 | CP | ug/kg | < 10 | < 10 | <1 | 30% | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | S22-Oc0043735 | CP | ug/kg | < 10 | < 10 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorobutanesulfonic acid (PFBS) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorononanesulfonic acid (PFNS) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | S22-Oc0043735 | 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) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | S22-Oc0043735 | CP | ug/kg | < 10 | < 10 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | S22-Oc0043735 | CP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | S22-Oc0043735 | 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 |
|---|---|
| N01 | F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis). |
| N02 | Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid. |
| N04 | F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. |
| N07 | Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs |
| 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). |
| Q09 | The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC |
| 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:

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Gabriele Cordero | Senior Analyst-Metal |
| Jonathon Angell | Senior Analyst-PFAS |
| Jonathon Angell | Senior Analyst-Sample Properties |
| Laxman Dias | Senior Analyst-Asbestos |
| Maria Tian | Senior Analyst-Organic |
| Mary Makarios | Senior Analyst-Inorganic |
| Mary Makarios | Senior Analyst-Metal |
| Roopesh Rangarajan | Senior Analyst-Inorganic |
| Roopesh Rangarajan | Senior Analyst-Organic |
| Roopesh Rangarajan | Senior Analyst-Volatile |
| Scott Beddoes | Senior Analyst-Inorganic |
| Scott Beddoes | Senior Analyst-Metal |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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**From:** Andrew Black <AndrewBlack@eurofins.com>
**Sent:** Monday, November 7, 2022 1:47 PM
**To:** Adam Bateup <AdamBateup@eurofins.com>; #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
**Subject:** *****IMPORTNAT*****JBS&G Job 933769 that was never sorted

**INFO**: INTERNAL EMAIL - Sent from your own Eurofins email domain.

Hi Team

933769- client replied to SRA and said asbestos missed on a few samples and have not been done. Please log additionally on overnight TAT for asbestos WA on
FT02-0.2-0.3- Oc0043726
FT01-0-0.1- Oc0043767
DG05-0-0.1- Oc0043728
DG06-0-0.1- Oc0043731 (looks to be in 933384 as Oc0040265)
DG06-0.2-0.3- Oc0043732 (looks to be in 933384 as Oc0040266)
QC202211017-01- Oc0043733
QC202211017-02- Oc0043734
DG07-0.2-0.3- Oc0043774

933384
DG06-0-0.1- needs to be analysed for PFAS
DG06-0.2-0.3- needs to be analysed for JB2A suite

Please have all of the above done in an additional overnight TAT job please and let Brisbane know. Bags were provided for all asbestos sample

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing Australia Pty Ltd**
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*For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnvirosampleNSW@eurofins.com or 02 9900 8421 (7am – 9pm).*
*For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).*

eurofins | Environment Testing

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| Tel: +64 9 526 45 51 | Tel: 0800 856 450 |
| IANZ# 1327 | IANZ# 1290 |

# Sample Receipt Advice

| | |
|---|---|
| **Company name:** | JBS & G Australia (NSW) P/L |
| **Contact name:** | Michelle Delandro |
| **Project name:** | ADDITIONAL - EDPARK-RES |
| **Project ID:** | ADDITIONAL - 63325 |
| **Turnaround time:** | Overnight |
| **Date/Time received** | Nov 7, 2022 4:19 PM |
| **Eurofins reference** | 938601 |

## 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 : 19.2 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:

**Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com**

Results will be delivered electronically via email to Michelle Delandro - MDelandro@jbsg.com.au.

Global Leader - Results you can trust

# Certificate of Analysis

**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.

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

| | |
|---|---|
| **Attention:** | Michelle Delandro |
| **Report** | 938601-AID |
| **Project Name** | ADDITIONAL - EDPARK-RES |
| **Project ID** | ADDITIONAL - 63325 |
| **Received Date** | Nov 07, 2022 |
| **Date Reported** | Nov 08, 2022 |

## Methodology:

| | |
|---|---|
| Asbestos Fibre Identification | Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.<br>*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.* |
| Unknown Mineral Fibres | Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.<br>*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.* |
| Subsampling Soil Samples | The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.<br>*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.* |
| Bonded asbestos-containing material (ACM) | The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004.<br>*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.* |
| Limit of Reporting | The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).<br>The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).<br>*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.* |

**Project Name** ADDITIONAL - EDPARK-RES
**Project ID** ADDITIONAL - 63325
**Date Sampled** Oct 18, 2022
**Report** 938601-AID

| Client Sample ID | Eurofins Sample No. | Date Sampled | Sample Description | Result |
|---|---|---|---|---|
| DG06-0-0.1 | 22-No0015084 | Oct 18, 2022 | Approximate Sample 587g<br>Sample consisted of: Brown fine-grained clayey soil, organic debris and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| DG06-0.2-0.3 | 22-No0015085 | Oct 18, 2022 | Approximate Sample 280g<br>Sample consisted of: Red-Brown fine-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |

## 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 |
|---|---|---|---|
| Asbestos - LTM-ASB-8020 | Sydney | Nov 07, 2022 | Indefinite |

eurofins

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NATA# 1261 Site# 1254

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**Sydney**
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ACT 2911
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**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** ADDITIONAL - EDPARK-RES
**Project ID:** ADDITIONAL - 63325

**Order No.:**
**Report #:** 938601
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 7, 2022 4:19 PM
**Due:** Nov 8, 2022
**Priority:** Overnight
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Asbestos - WA guidelines | Moisture Set | Moisture Set | JBS&G Suite 2 | Per- and Polyfluoroalkyl Substances (PFASs) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | X | X | | X |
| **External Laboratory** | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | |
| 1 | DG06-0-0.1 | Oct 18, 2022 | | Soil | S22-No0015084 | X | X | | | X |
| 2 | DG06-0.2-0.3 | Oct 18, 2022 | | Soil | S22-No0015085 | X | | X | X | |
| **Test Counts** | | | | | | 2 | 2 | 2 | 1 | 1 |

## Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

## Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
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.

## Units

| | |
|---|---|
| % w/w: | Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**) |
| F/fld | Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**) |
| F/mL | Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**) |
| g, kg | Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**) |
| g/kg | Concentration in grams per kilogram |
| L, mL | Volume, e.g. of air as measured in AFM (**V** = **r** x **t**) |
| L/min | Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**) |
| min | Time (**t**), e.g. of air sample collection period |

## Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

## Terms

| | |
|---|---|
| **%asbestos** | Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**$P_A$**). |
| **ACM** | Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm. |
| **AF** | Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable". |
| **AFM** | Airborne Fibre Monitoring, e.g. by the MFM. |
| **Amosite** | Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004. |
| **AS** | Australian Standard. |
| **Asbestos Content (as asbestos)** | Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**). |
| **Chrysotile** | Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004. |
| **COC** | Chain of Custody. |
| **Crocidolite** | Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004. |
| **Dry** | Sample is dried by heating prior to analysis. |
| **DS** | Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM. |
| **FA** | Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF. |
| **Fibre Count** | Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003 |
| **Fibre ID** | Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos. |
| **Friable** | Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability. |
| **HSG248** | UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021). |
| **HSG264** | UK HSE HSG264, *Asbestos: The Survey Guide* (2012). |
| **ISO (also ISO/IEC)** | International Organization for Standardization / International Electrotechnical Commission. |
| **K Factor** | Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**). |
| **LOR** | Limit of Reporting. |
| **MFM (also NOHSC:3003)** | Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)]. |
| **NEPM (also ASC NEPM)** | National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended). |
| **Organic** | Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004. |
| **PCM** | Phase Contrast Microscopy. As used for Fibre Counting according to the MFM. |
| **PLM** | Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004. |
| **SMF** | Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004. |
| **SRA** | Sample Receipt Advice. |
| **Trace Analysis** | Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix. |
| **UK HSE HSG** | United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication. |
| **UMF** | Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos. |
| **WA DOH** | Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis* |
| **Weighted Average** | Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**). |

## Comments

Sample No0015085 received was less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

## 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 |

## Asbestos Counter/Identifier:

| | |
|---|---|
| Bennel Jiri | Senior Analyst-Asbestos |

## Authorised by:

| | |
|---|---|
| Sayeed Abu | Senior Analyst-Asbestos |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

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

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

**Attention:** **Michelle Delandro**

**Report** **938601-S**
Project name ADDITIONAL - EDPARK-RES
Project ID ADDITIONAL - 63325
Received Date Nov 07, 2022

| **Client Sample ID** | | | **DG06-0-0.1** | **DG06-0.2-0.3** |
|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S22-No0015084** | **S22-No0015085** |
| **Date Sampled** | | | **Oct 18, 2022** | **Oct 18, 2022** |
| Test/Reference | LOR | Unit | | |
| | | | | |
| % Moisture | 1 | % | 20 | 24 |
| **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 | % | 101 | - |
| 13C5-PFPeA (surr.) | 1 | % | 102 | - |
| 13C5-PFHxA (surr.) | 1 | % | 134 | - |
| 13C4-PFHpA (surr.) | 1 | % | 109 | - |
| 13C8-PFOA (surr.) | 1 | % | 107 | - |
| 13C5-PFNA (surr.) | 1 | % | 106 | - |
| 13C6-PFDA (surr.) | 1 | % | 138 | - |
| 13C2-PFUnDA (surr.) | 1 | % | 102 | - |
| 13C2-PFDoDA (surr.) | 1 | % | 112 | - |
| 13C2-PFTeDA (surr.) | 1 | % | 114 | - |
| **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 | | | DG06-0-0.1 | DG06-0.2-0.3 |
|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil |
| Eurofins Sample No. | | | S22-No0015084 | S22-No0015085 |
| Date Sampled | | | Oct 18, 2022 | Oct 18, 2022 |
| Test/Reference | LOR | Unit | | |
| **Perfluoroalkyl sulfonamido substances** | | | | |
| 13C8-FOSA (surr.) | 1 | % | 86 | - |
| D3-N-MeFOSA (surr.) | 1 | % | 79 | - |
| D5-N-EtFOSA (surr.) | 1 | % | 77 | - |
| D7-N-MeFOSE (surr.) | 1 | % | 83 | - |
| D9-N-EtFOSE (surr.) | 1 | % | 86 | - |
| D5-N-EtFOSAA (surr.) | 1 | % | 90 | - |
| D3-N-MeFOSAA (surr.) | 1 | % | 88 | - |
| **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 | % | 117 | - |
| 18O2-PFHxS (surr.) | 1 | % | 106 | - |
| 13C8-PFOS (surr.) | 1 | % | 90 | - |
| **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 | % | 128 | - |
| 13C2-6:2 FTSA (surr.) | 1 | % | 111 | - |
| 13C2-8:2 FTSA (surr.) | 1 | % | 125 | - |
| 13C2-10:2 FTSA (surr.) | 1 | % | 118 | - |
| **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 | - |
| **Total Recoverable Hydrocarbons** | | | | |
| TRH C6-C9 | 20 | mg/kg | - | < 20 |
| TRH C10-C14 | 20 | mg/kg | - | < 20 |
| TRH C15-C28 | 50 | mg/kg | - | < 50 |
| TRH C29-C36 | 50 | mg/kg | - | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | - | < 50 |
| Naphthalene[N02] | 0.5 | mg/kg | - | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | - | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | - | < 20 |
| TRH >C10-C16 | 50 | mg/kg | - | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | - | < 50 |
| TRH >C16-C34 | 100 | mg/kg | - | < 100 |

| Client Sample ID | | | DG06-0-0.1 | DG06-0.2-0.3 |
|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil |
| Eurofins Sample No. | | | S22-No0015084 | S22-No0015085 |
| Date Sampled | | | Oct 18, 2022 | Oct 18, 2022 |
| Test/Reference | LOR | Unit | | |
| **Total Recoverable Hydrocarbons** | | | | |
| TRH >C34-C40 | 100 | mg/kg | - | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | - | < 100 |
| **BTEX** | | | | |
| Benzene | 0.1 | mg/kg | - | < 0.1 |
| Toluene | 0.1 | mg/kg | - | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | - | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | - | < 0.2 |
| o-Xylene | 0.1 | mg/kg | - | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | - | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | - | 83 |
| **Polycyclic Aromatic Hydrocarbons** | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | - | < 0.5 |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | - | 0.6 |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | - | 1.2 |
| Acenaphthene | 0.5 | mg/kg | - | < 0.5 |
| Acenaphthylene | 0.5 | mg/kg | - | < 0.5 |
| Anthracene | 0.5 | mg/kg | - | < 0.5 |
| Benz(a)anthracene | 0.5 | mg/kg | - | < 0.5 |
| Benzo(a)pyrene | 0.5 | mg/kg | - | < 0.5 |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | - | < 0.5 |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | - | < 0.5 |
| Benzo(k)fluoranthene | 0.5 | mg/kg | - | < 0.5 |
| Chrysene | 0.5 | mg/kg | - | < 0.5 |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | - | < 0.5 |
| Fluoranthene | 0.5 | mg/kg | - | < 0.5 |
| Fluorene | 0.5 | mg/kg | - | < 0.5 |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | - | < 0.5 |
| Naphthalene | 0.5 | mg/kg | - | < 0.5 |
| Phenanthrene | 0.5 | mg/kg | - | < 0.5 |
| Pyrene | 0.5 | mg/kg | - | < 0.5 |
| Total PAH* | 0.5 | mg/kg | - | < 0.5 |
| 2-Fluorobiphenyl (surr.) | 1 | % | - | 90 |
| p-Terphenyl-d14 (surr.) | 1 | % | - | 84 |
| **Organochlorine Pesticides** | | | | |
| Chlordanes - Total | 0.1 | mg/kg | - | < 0.1 |
| 4.4'-DDD | 0.05 | mg/kg | - | < 0.05 |
| 4.4'-DDE | 0.05 | mg/kg | - | < 0.05 |
| 4.4'-DDT | 0.05 | mg/kg | - | < 0.05 |
| a-HCH | 0.05 | mg/kg | - | < 0.05 |
| Aldrin | 0.05 | mg/kg | - | < 0.05 |
| b-HCH | 0.05 | mg/kg | - | < 0.05 |
| d-HCH | 0.05 | mg/kg | - | < 0.05 |
| Dieldrin | 0.05 | mg/kg | - | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | - | < 0.05 |
| Endosulfan II | 0.05 | mg/kg | - | < 0.05 |
| Endosulfan sulphate | 0.05 | mg/kg | - | < 0.05 |
| Endrin | 0.05 | mg/kg | - | < 0.05 |
| Endrin aldehyde | 0.05 | mg/kg | - | < 0.05 |
| Endrin ketone | 0.05 | mg/kg | - | < 0.05 |

| Client Sample ID | | | DG06-0-0.1 | DG06-0.2-0.3 |
|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil |
| Eurofins Sample No. | | | S22-No0015084 | S22-No0015085 |
| Date Sampled | | | Oct 18, 2022 | Oct 18, 2022 |
| Test/Reference | LOR | Unit | | |
| **Organochlorine Pesticides** | | | | |
| g-HCH (Lindane) | 0.05 | mg/kg | - | < 0.05 |
| Heptachlor | 0.05 | mg/kg | - | < 0.05 |
| Heptachlor epoxide | 0.05 | mg/kg | - | < 0.05 |
| Hexachlorobenzene | 0.05 | mg/kg | - | < 0.05 |
| Methoxychlor | 0.05 | mg/kg | - | < 0.05 |
| Toxaphene | 0.5 | mg/kg | - | < 0.5 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | - | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | - | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | - | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | - | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | - | 98 |
| Tetrachloro-m-xylene (surr.) | 1 | % | - | 77 |
| **Polychlorinated Biphenyls** | | | | |
| Aroclor-1016 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1221 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1232 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1242 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1248 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1254 | 0.1 | mg/kg | - | < 0.1 |
| Aroclor-1260 | 0.1 | mg/kg | - | < 0.1 |
| Total PCB* | 0.1 | mg/kg | - | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | - | 98 |
| Tetrachloro-m-xylene (surr.) | 1 | % | - | 77 |
| **Heavy Metals** | | | | |
| Arsenic | 2 | mg/kg | - | 13 |
| Cadmium | 0.4 | mg/kg | - | < 0.4 |
| Chromium | 5 | mg/kg | - | 25 |
| Copper | 5 | mg/kg | - | 21 |
| Lead | 5 | mg/kg | - | 12 |
| Mercury | 0.1 | mg/kg | - | < 0.1 |
| Nickel | 5 | mg/kg | - | 8.4 |
| Zinc | 5 | mg/kg | - | 34 |

## 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 07, 2022 | 14 Days |
| - Method: LTM-GEN-7080 Moisture | | | |
| Per- and Polyfluoroalkyl Substances (PFASs) | | | |
| Perfluoroalkyl carboxylic acids (PFCAs) | Brisbane | Nov 08, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Perfluoroalkyl sulfonamido substances | Brisbane | Nov 08, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Perfluoroalkyl sulfonic acids (PFSAs) | Brisbane | Nov 08, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) | Brisbane | Nov 08, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| JBS&G Suite 2 | | | |
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Sydney | Nov 07, 2022 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 07, 2022 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 07, 2022 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Sydney | Nov 07, 2022 | 14 Days |
| - Method: LTM-ORG-2010 BTEX and Volatile TRH | | | |
| Polycyclic Aromatic Hydrocarbons | Sydney | Nov 07, 2022 | 14 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water | | | |
| Organochlorine Pesticides | Sydney | Nov 07, 2022 | 14 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Polychlorinated Biphenyls | Sydney | Nov 07, 2022 | 28 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Metals M8 | Sydney | Nov 07, 2022 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |

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**Project Name:** ADDITIONAL - EDPARK-RES
**Project ID:** ADDITIONAL - 63325

**Order No.:**
**Report #:** 938601
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 7, 2022 4:19 PM
**Due:** Nov 8, 2022
**Priority:** Overnight
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Asbestos - WA guidelines | Moisture Set | Moisture Set | JBS&G Suite 2 | Per- and Polyfluoroalkyl Substances (PFASs) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | X | X | | X |
| **External Laboratory** | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | |
| 1 | DG06-0-0.1 | Oct 18, 2022 | | Soil | S22-No0015084 | X | X | | | X |
| 2 | DG06-0.2-0.3 | Oct 18, 2022 | | Soil | S22-No0015085 | X | | X | X | |
| **Test Counts** | | | | | | 2 | 2 | 2 | 1 | 1 |

## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

### Units

**mg/kg:** milligrams per kilogram
**mg/L:** milligrams per litre
**µg/L:** micrograms per litre
**ppm:** parts per million
**ppb:** parts per billion
**%:** Percentage
**org/100 mL:** Organisms per 100 millilitres
**NTU:** Nephelometric Turbidity Units
**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres

### Terms

| | |
|---|---|
| **APHA** | American Public Health Association |
| **COC** | Chain of Custody |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **CRM** | Certified Reference Material (ISO17034) - reported as percent recovery. |
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **LOR** | Limit of Reporting. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **SRA** | Sample Receipt Advice |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **TBTO** | Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits. |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **TEQ** | Toxic Equivalency Quotient or Total Equivalence |
| **QSM** | US Department of Defense Quality Systems Manual Version 5.4 |
| **US EPA** | United States Environmental Protection Agency |
| **WA DWER** | Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA |

### QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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### 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 | |
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C6-C9 | mg/kg | < 20 | | | 20 | Pass | |
| TRH C10-C14 | mg/kg | < 20 | | | 20 | Pass | |
| TRH C15-C28 | mg/kg | < 50 | | | 50 | Pass | |
| TRH C29-C36 | mg/kg | < 50 | | | 50 | Pass | |
| Naphthalene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| TRH C6-C10 | mg/kg | < 20 | | | 20 | Pass | |
| TRH >C10-C16 | mg/kg | < 50 | | | 50 | Pass | |
| TRH >C16-C34 | mg/kg | < 100 | | | 100 | Pass | |
| TRH >C34-C40 | mg/kg | < 100 | | | 100 | Pass | |
| **Method Blank** | | | | | | | |
| **BTEX** | | | | | | | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Benzene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Toluene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Ethylbenzene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| m&p-Xylenes | mg/kg | < 0.2 | | | 0.2 | Pass | |
| o-Xylene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Xylenes - Total* | mg/kg | < 0.3 | | | 0.3 | Pass | |
| **Method Blank** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Acenaphthylene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benz(a)anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(a)pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(b&j)fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(g.h.i)perylene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(k)fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Chrysene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Dibenz(a.h)anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Fluorene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Indeno(1.2.3-cd)pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Naphthalene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Phenanthrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | mg/kg | < 0.1 | | | 0.1 | Pass | |
| 4.4'-DDD | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDE | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDT | mg/kg | < 0.05 | | | 0.05 | Pass | |
| a-HCH | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Aldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| b-HCH | mg/kg | < 0.05 | | | 0.05 | Pass | |
| d-HCH | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Dieldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan I | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan II | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan sulphate | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin aldehyde | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin ketone | mg/kg | < 0.05 | | | 0.05 | Pass | |
| g-HCH (Lindane) | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor epoxide | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Hexachlorobenzene | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Methoxychlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Toxaphene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1221 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1232 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1242 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1248 | mg/kg | < 0.1 | | | 0.1 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Aroclor-1254 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1260 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Total PCB* | mg/kg | < 0.1 | | | 0.1 | Pass | |
| **Method Blank** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | mg/kg | < 2 | | | 2 | Pass | |
| Cadmium | mg/kg | < 0.4 | | | 0.4 | Pass | |
| Chromium | mg/kg | < 5 | | | 5 | Pass | |
| Copper | mg/kg | < 5 | | | 5 | Pass | |
| Lead | mg/kg | < 5 | | | 5 | Pass | |
| Mercury | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Nickel | mg/kg | < 5 | | | 5 | Pass | |
| Zinc | mg/kg | < 5 | | | 5 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | | | | |
| Perfluorobutanoic acid (PFBA) | % | 96 | | | 50-150 | Pass | |
| Perfluoropentanoic acid (PFPeA) | % | 92 | | | 50-150 | Pass | |
| Perfluorohexanoic acid (PFHxA) | % | 85 | | | 50-150 | Pass | |
| Perfluoroheptanoic acid (PFHpA) | % | 91 | | | 50-150 | Pass | |
| Perfluorooctanoic acid (PFOA) | % | 94 | | | 50-150 | Pass | |
| Perfluorononanoic acid (PFNA) | % | 108 | | | 50-150 | Pass | |
| Perfluorodecanoic acid (PFDA) | % | 88 | | | 50-150 | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | % | 99 | | | 50-150 | Pass | |
| Perfluorododecanoic acid (PFDoDA) | % | 93 | | | 50-150 | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | % | 97 | | | 50-150 | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | % | 94 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | % | 97 | | | 50-150 | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | % | 111 | | | 50-150 | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | % | 109 | | | 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) | % | 93 | | | 50-150 | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | % | 97 | | | 50-150 | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | % | 99 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | | | | |
| Perfluorobutanesulfonic acid (PFBS) | % | 83 | | | 50-150 | Pass | |
| Perfluorononanesulfonic acid (PFNS) | % | 109 | | | 50-150 | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | % | 79 | | | 50-150 | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | % | 82 | | | 50-150 | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | % | 109 | | | 50-150 | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | % | 101 | | | 50-150 | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | % | 108 | | | 50-150 | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | % | 116 | | | 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) | % | 100 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | % | 106 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | % | 101 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C6-C9 | % | 90 | | | 70-130 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| TRH C10-C14 | % | 76 | | | 70-130 | Pass | |
| Naphthalene | % | 86 | | | 70-130 | Pass | |
| TRH C6-C10 | % | 90 | | | 70-130 | Pass | |
| TRH >C10-C16 | % | 83 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 94 | | | 70-130 | Pass | |
| Toluene | % | 95 | | | 70-130 | Pass | |
| Ethylbenzene | % | 98 | | | 70-130 | Pass | |
| m&p-Xylenes | % | 97 | | | 70-130 | Pass | |
| o-Xylene | % | 101 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 98 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | % | 84 | | | 70-130 | Pass | |
| Acenaphthylene | % | 90 | | | 70-130 | Pass | |
| Anthracene | % | 82 | | | 70-130 | Pass | |
| Benz(a)anthracene | % | 90 | | | 70-130 | Pass | |
| Benzo(a)pyrene | % | 87 | | | 70-130 | Pass | |
| Benzo(b&j)fluoranthene | % | 92 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | % | 103 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | % | 92 | | | 70-130 | Pass | |
| Chrysene | % | 102 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | % | 91 | | | 70-130 | Pass | |
| Fluoranthene | % | 80 | | | 70-130 | Pass | |
| Fluorene | % | 80 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | % | 91 | | | 70-130 | Pass | |
| Naphthalene | % | 92 | | | 70-130 | Pass | |
| Phenanthrene | % | 84 | | | 70-130 | Pass | |
| Pyrene | % | 80 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | % | 84 | | | 70-130 | Pass | |
| 4.4'-DDD | % | 92 | | | 70-130 | Pass | |
| 4.4'-DDE | % | 90 | | | 70-130 | Pass | |
| 4.4'-DDT | % | 101 | | | 70-130 | Pass | |
| a-HCH | % | 87 | | | 70-130 | Pass | |
| Aldrin | % | 87 | | | 70-130 | Pass | |
| b-HCH | % | 83 | | | 70-130 | Pass | |
| d-HCH | % | 87 | | | 70-130 | Pass | |
| Dieldrin | % | 88 | | | 70-130 | Pass | |
| Endosulfan I | % | 96 | | | 70-130 | Pass | |
| Endosulfan II | % | 88 | | | 70-130 | Pass | |
| Endosulfan sulphate | % | 95 | | | 70-130 | Pass | |
| Endrin | % | 100 | | | 70-130 | Pass | |
| Endrin aldehyde | % | 102 | | | 70-130 | Pass | |
| Endrin ketone | % | 97 | | | 70-130 | Pass | |
| g-HCH (Lindane) | % | 95 | | | 70-130 | Pass | |
| Heptachlor | % | 86 | | | 70-130 | Pass | |
| Heptachlor epoxide | % | 85 | | | 70-130 | Pass | |
| Hexachlorobenzene | % | 86 | | | 70-130 | Pass | |
| Methoxychlor | % | 87 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |

| Test | | | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | | | % | 101 | | | 70-130 | Pass | |
| Aroclor-1260 | | | % | 99 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Arsenic | | | % | 98 | | | 80-120 | Pass | |
| Cadmium | | | % | 106 | | | 80-120 | Pass | |
| Chromium | | | % | 101 | | | 80-120 | Pass | |
| Copper | | | % | 102 | | | 80-120 | Pass | |
| Lead | | | % | 96 | | | 80-120 | Pass | |
| Mercury | | | % | 110 | | | 80-120 | Pass | |
| Nickel | | | % | 109 | | | 80-120 | Pass | |
| Zinc | | | % | 111 | | | 80-120 | 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) | N22-No0013235 | NCP | % | 88 | | | 50-150 | Pass | |
| Perfluoropentanoic acid (PFPeA) | N22-No0013235 | NCP | % | 89 | | | 50-150 | Pass | |
| Perfluorohexanoic acid (PFHxA) | N22-No0013235 | NCP | % | 98 | | | 50-150 | Pass | |
| Perfluoroheptanoic acid (PFHpA) | N22-No0013235 | NCP | % | 80 | | | 50-150 | Pass | |
| Perfluorooctanoic acid (PFOA) | N22-No0013235 | NCP | % | 87 | | | 50-150 | Pass | |
| Perfluorononanoic acid (PFNA) | N22-No0013235 | NCP | % | 84 | | | 50-150 | Pass | |
| Perfluorodecanoic acid (PFDA) | N22-No0013235 | NCP | % | 96 | | | 50-150 | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | N22-No0013235 | NCP | % | 92 | | | 50-150 | Pass | |
| Perfluorododecanoic acid (PFDoDA) | N22-No0013235 | NCP | % | 81 | | | 50-150 | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | N22-No0013235 | NCP | % | 78 | | | 50-150 | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | N22-No0013235 | NCP | % | 91 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | Result 1 | | | | | |
| Perfluorooctane sulfonamide (FOSA) | N22-No0013235 | NCP | % | 90 | | | 50-150 | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | N22-No0013235 | NCP | % | 105 | | | 50-150 | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | N22-No0013235 | NCP | % | 100 | | | 50-150 | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | N22-No0013235 | NCP | % | 115 | | | 50-150 | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | N22-No0013235 | NCP | % | 85 | | | 50-150 | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | N22-No0013235 | NCP | % | 92 | | | 50-150 | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | N22-No0013235 | NCP | % | 94 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | Result 1 | | | | | |
| Perfluorobutanesulfonic acid (PFBS) | N22-No0013235 | NCP | % | 83 | | | 50-150 | Pass | |
| Perfluorononanesulfonic acid (PFNS) | N22-No0013235 | NCP | % | 108 | | | 50-150 | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | N22-No0013235 | NCP | % | 61 | | | 50-150 | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | N22-No0013235 | NCP | % | 84 | | | 50-150 | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | N22-No0013235 | NCP | % | 146 | | | 50-150 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Perfluoroheptanesulfonic acid (PFHpS) | N22-No0013235 | NCP | % | 103 | | | 50-150 | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | N22-No0013235 | NCP | % | 147 | | | 50-150 | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | N22-No0013235 | 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) | N22-No0013235 | NCP | % | 95 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | N22-No0013235 | NCP | % | 104 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | N22-No0013235 | NCP | % | 101 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | N22-No0013235 | NCP | % | 92 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | | | | | |
| TRH C6-C9 | R22-Oc0060487 | NCP | % | 72 | | | 70-130 | Pass | |
| TRH C10-C14 | S22-No0009651 | NCP | % | 87 | | | 70-130 | Pass | |
| Naphthalene | N22-No0005944 | NCP | % | 70 | | | 70-130 | Pass | |
| TRH C6-C10 | R22-Oc0060487 | NCP | % | 72 | | | 70-130 | Pass | |
| TRH >C10-C16 | S22-No0009651 | NCP | % | 94 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |
| Benzene | R22-Oc0060487 | NCP | % | 82 | | | 70-130 | Pass | |
| Toluene | R22-Oc0060487 | NCP | % | 83 | | | 70-130 | Pass | |
| Ethylbenzene | R22-Oc0060487 | NCP | % | 85 | | | 70-130 | Pass | |
| m&p-Xylenes | R22-Oc0060487 | NCP | % | 84 | | | 70-130 | Pass | |
| o-Xylene | R22-Oc0060487 | NCP | % | 86 | | | 70-130 | Pass | |
| Xylenes - Total* | R22-Oc0060487 | NCP | % | 85 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | | | | | |
| Chlordanes - Total | S22-No0014020 | NCP | % | 89 | | | 70-130 | Pass | |
| 4.4'-DDD | S22-No0014020 | NCP | % | 81 | | | 70-130 | Pass | |
| 4.4'-DDE | S22-No0014020 | NCP | % | 95 | | | 70-130 | Pass | |
| 4.4'-DDT | S22-No0014020 | NCP | % | 98 | | | 70-130 | Pass | |
| a-HCH | S22-No0014020 | NCP | % | 85 | | | 70-130 | Pass | |
| Aldrin | S22-No0014020 | NCP | % | 88 | | | 70-130 | Pass | |
| b-HCH | S22-No0014020 | NCP | % | 89 | | | 70-130 | Pass | |
| d-HCH | S22-No0014020 | NCP | % | 90 | | | 70-130 | Pass | |
| Dieldrin | S22-No0014020 | NCP | % | 91 | | | 70-130 | Pass | |
| Endosulfan I | S22-No0014020 | NCP | % | 103 | | | 70-130 | Pass | |
| Endosulfan II | S22-No0014020 | NCP | % | 70 | | | 70-130 | Pass | |
| Endosulfan sulphate | S22-No0014020 | NCP | % | 100 | | | 70-130 | Pass | |
| Endrin | S22-No0014020 | NCP | % | 113 | | | 70-130 | Pass | |
| Endrin aldehyde | S22-No0014020 | NCP | % | 112 | | | 70-130 | Pass | |
| Endrin ketone | S22-No0014020 | NCP | % | 109 | | | 70-130 | Pass | |
| g-HCH (Lindane) | S22-No0014020 | NCP | % | 90 | | | 70-130 | Pass | |
| Heptachlor | S22-No0014020 | NCP | % | 89 | | | 70-130 | Pass | |
| Heptachlor epoxide | S22-No0014020 | NCP | % | 89 | | | 70-130 | Pass | |
| Hexachlorobenzene | S22-No0014020 | NCP | % | 90 | | | 70-130 | Pass | |
| Methoxychlor | S22-No0014020 | NCP | % | 86 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Polychlorinated Biphenyls** | | | | Result 1 | | | | | |
| Aroclor-1016 | S22-No0014020 | NCP | % | 106 | | | 70-130 | Pass | |
| Aroclor-1260 | S22-No0014020 | NCP | % | 109 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | S22-No0014000 | NCP | % | 98 | | | 75-125 | Pass | |
| Cadmium | S22-No0014000 | NCP | % | 109 | | | 75-125 | Pass | |
| Chromium | S22-No0014000 | NCP | % | 99 | | | 75-125 | Pass | |
| Copper | S22-No0014000 | NCP | % | 102 | | | 75-125 | Pass | |
| Lead | S22-No0014000 | NCP | % | 97 | | | 75-125 | Pass | |
| Mercury | S22-No0014000 | NCP | % | 114 | | | 75-125 | Pass | |
| Nickel | S22-No0014000 | NCP | % | 110 | | | 75-125 | Pass | |
| Zinc | S22-No0014000 | NCP | % | 107 | | | 75-125 | 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) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoropentanoic acid (PFPeA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorohexanoic acid (PFHxA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoroheptanoic acid (PFHpA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorooctanoic acid (PFOA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorononanoic acid (PFNA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorodecanoic acid (PFDA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorododecanoic acid (PFDoDA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorooctane sulfonamide (FOSA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | N22-No0013234 | NCP | ug/kg | < 10 | < 10 | <1 | 30% | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | N22-No0013234 | NCP | ug/kg | < 10 | < 10 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorobutanesulfonic acid (PFBS) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorononanesulfonic acid (PFNS) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorohexanesulfonic acid (PFHxS) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | N22-No0013234 | NCP | ug/kg | 6.8 | < 5 | 69 | 30% | Fail | Q15 |
| Perfluorodecanesulfonic acid (PFDS) | N22-No0013234 | 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) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | N22-No0013234 | NCP | ug/kg | < 10 | < 10 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | N22-No0013234 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S22-No0015085 | CP | % | 24 | 23 | 4.9 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | R22-Oc0060486 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C10-C14 | N22-No0002258 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C15-C28 | N22-No0002258 | NCP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH C29-C36 | N22-No0002258 | NCP | mg/kg | 81 | 83 | 3.2 | 30% | Pass | |
| Naphthalene | R22-Oc0060486 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| TRH C6-C10 | R22-Oc0060486 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH >C10-C16 | N22-No0002258 | NCP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH >C16-C34 | N22-No0002258 | NCP | mg/kg | < 100 | < 100 | <1 | 30% | Pass | |
| TRH >C34-C40 | N22-No0002258 | NCP | mg/kg | 100 | < 100 | 7.2 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | R22-Oc0060486 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Toluene | R22-Oc0060486 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Ethylbenzene | R22-Oc0060486 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| m&p-Xylenes | R22-Oc0060486 | NCP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| o-Xylene | R22-Oc0060486 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Xylenes - Total* | R22-Oc0060486 | NCP | mg/kg | < 0.3 | < 0.3 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Acenaphthene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Acenaphthylene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Anthracene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benz(a)anthracene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(a)pyrene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(b&j)fluoranthene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(g.h.i)perylene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(k)fluoranthene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Chrysene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Dibenz(a.h)anthracene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluoranthene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluorene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Indeno(1.2.3-cd)pyrene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Naphthalene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Phenanthrene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Pyrene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Chlordanes - Total | S22-No0005264 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| 4.4'-DDD | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDE | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDT | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| a-HCH | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Aldrin | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| b-HCH | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| d-HCH | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Dieldrin | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan I | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan II | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan sulphate | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin aldehyde | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin ketone | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| g-HCH (Lindane) | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor epoxide | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Hexachlorobenzene | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Methoxychlor | S22-No0005264 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Toxaphene | S22-No0005264 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polychlorinated Biphenyls** | | | | Result 1 | Result 2 | RPD | | | |
| Aroclor-1016 | S22-No0005264 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1221 | S22-No0005264 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1232 | S22-No0005264 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1242 | S22-No0005264 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1248 | S22-No0005264 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1254 | S22-No0005264 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1260 | S22-No0005264 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Total PCB* | S22-No0005264 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | R22-Oc0060572 | NCP | mg/kg | 13 | 13 | <1 | 30% | Pass | |
| Cadmium | R22-Oc0060572 | NCP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | R22-Oc0060572 | NCP | mg/kg | 38 | 32 | 18 | 30% | Pass | |
| Copper | R22-Oc0060572 | NCP | mg/kg | 17 | 15 | 14 | 30% | Pass | |
| Lead | R22-Oc0060572 | NCP | mg/kg | 12 | 10 | 13 | 30% | Pass | |
| Mercury | R22-Oc0060572 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | R22-Oc0060572 | NCP | mg/kg | 16 | 14 | 11 | 30% | Pass | |
| Zinc | R22-Oc0060572 | NCP | mg/kg | 48 | 43 | 9.5 | 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 |
|---|---|
| N01 | F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis). |
| N02 | Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid. |
| N04 | F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. |
| N07 | Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs |
| 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:

| | |
|---|---|
| Bonnie Pu | Analytical Services Manager |
| Sayeed Abu | Senior Analyst-Asbestos |
| Raymond Siu | Senior Analyst-Volatile |
| Roopesh Rangarajan | Senior Analyst-Organic |
| Charl Du Preez | Senior Analyst-Metal |
| Jonathon Angell | Senior Analyst-PFAS |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

**From:** Andrew Black <AndrewBlack@eurofins.com>
**Sent:** Monday, November 7, 2022 1:47 PM
**To:** Adam Bateup <AdamBateup@eurofins.com>; #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
**Subject:** *****IMPORTNAT*****JBS&G Job 933769 that was never sorted

**INFO**: INTERNAL EMAIL - Sent from your own Eurofins email domain.

Hi Team

933769- client replied to SRA and said asbestos missed on a few samples and have not been done. Please log additionally on overnight TAT for asbestos WA on
FT02-0.2-0.3- Oc0043726
FT01-0-0.1- Oc0043767
DG05-0-0.1- Oc0043728
DG06-0-0.1- Oc0043731 (looks to be in 933384 as Oc0040265)
DG06-0.2-0.3- Oc0043732 (looks to be in 933384 as Oc0040266)
QC202211017-01- Oc0043733
QC202211017-02- Oc0043734
DG07-0.2-0.3- Oc0043774

933384
DG06-0-0.1- needs to be analysed for PFAS
DG06-0.2-0.3- needs to be analysed for JB2A suite

Please have all of the above done in an additional overnight TAT job please and let Brisbane know. Bags were provided for all asbestos sample

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing Australia Pty Ltd**
Unit 7
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AUSTRALIA
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*For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnvirosampleNSW@eurofins.com or 02 9900 8421 (7am – 9pm).*
*For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).*

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|---|---|
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| Auckland 1061 | Christchurch 7675 |
| Tel: +64 9 526 45 51 | Tel: 0800 856 450 |
| IANZ# 1327 | IANZ# 1290 |


# Sample Receipt Advice

| | |
|---|---|
| **Company name:** | JBS & G Australia (NSW) P/L |
| **Contact name:** | Michelle Delandro |
| **Project name:** | ADDITIONAL - EDPARK-OP |
| **Project ID:** | ADDITIONAL - 63325 |
| **Turnaround time:** | Overnight |
| **Date/Time received** | Nov 7, 2022 1:47 PM |
| **Eurofins reference** | 938609 |

## Sample Information

| | |
|---|---|
| ✓ | A detailed list of analytes logged into our LIMS, is included in the attached summary table. |
| ✓ | All samples have been received as described on the above COC. |
| ✓ | COC has been completed correctly. |
| N/A | 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:

**Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com**

Results will be delivered electronically via email to Michelle Delandro - MDelandro@jbsg.com.au.

Global Leader - Results you can trust

# Certificate of Analysis

**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.

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

| | |
|---|---|
| **Attention:** | Michelle Delandro |
| **Report** | 938609-AID |
| **Project Name** | ADDITIONAL - EDPARK-OP |
| **Project ID** | ADDITIONAL - 63325 |
| **Received Date** | Nov 07, 2022 |
| **Date Reported** | Nov 08, 2022 |

## Methodology:

| | |
|---|---|
| Asbestos Fibre Identification | Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.<br>*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.* |
| Unknown Mineral Fibres | Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.<br>*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.* |
| Subsampling Soil Samples | The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.<br>*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.* |
| Bonded asbestos-containing material (ACM) | The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004.<br>*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.* |
| Limit of Reporting | The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).<br>The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).<br>*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.* |

**Project Name** ADDITIONAL - EDPARK-OP
**Project ID** ADDITIONAL - 63325
**Date Sampled** Oct 17, 2022
**Report** 938609-AID

| Client Sample ID | Eurofins Sample No. | Date Sampled | Sample Description | Result |
|---|---|---|---|---|
| FT02-0.2-0.3 | 22-No0015182 | Oct 17, 2022 | Approximate Sample 676g<br>Sample consisted of: Brown coarse-grained soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| FT01-0-0.1 | 22-No0015183 | Oct 17, 2022 | Approximate Sample 472g / >500ml<br>Sample consisted of: Brown fine-grained clayey soil, glass, organic debris and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| DG05-0-0.1 | 22-No0015184 | Oct 17, 2022 | Approximate Sample 513g<br>Sample consisted of: Brown coarse-grained clayey sandy soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| QC202211017-01 | 22-No0015185 | Oct 17, 2022 | Approximate Sample 529g<br>Sample consisted of: Black fine-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| QC202211017-02 | 22-No0015186 | Oct 17, 2022 | Approximate Sample 507g<br>Sample consisted of: Brown coarse-grained clayey soil, organic debris and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| DG07-0.2-0.3 | 22-No0015187 | Oct 17, 2022 | Approximate Sample 354g<br>Sample consisted of: Red-Brown coarse-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |

## 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 |
|---|---|---|---|
| Asbestos - LTM-ASB-8020 | Sydney | Nov 07, 2022 | Indefinite |

eurofins

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**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** ADDITIONAL - EDPARK-OP
**Project ID:** ADDITIONAL - 63325

**Order No.:**
**Report #:** 938609
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 7, 2022 1:47 PM
**Due:** Nov 8, 2022
**Priority:** Overnight
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Asbestos - WA guidelines |
|---|---|---|---|---|---|---|
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X |
| **External Laboratory** | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | |
| 1 | FT02-0.2-0.3 | Oct 17, 2022 | | Soil | S22-No0015182 | X |
| 2 | FT01-0-0.1 | Oct 17, 2022 | | Soil | S22-No0015183 | X |
| 3 | DG05-0-0.1 | Oct 17, 2022 | | Soil | S22-No0015184 | X |
| 4 | QC202211017-01 | Oct 17, 2022 | | Soil | S22-No0015185 | X |
| 5 | QC202211017-02 | Oct 17, 2022 | | Soil | S22-No0015186 | X |
| 6 | DG07-0.2-0.3 | Oct 17, 2022 | | Soil | S22-No0015187 | X |
| **Test Counts** | | | | | | 6 |

## Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

## Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
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.

## Units

| | |
|---|---|
| % w/w: | Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**) |
| F/fld | Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**) |
| F/mL | Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**) |
| g, kg | Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**) |
| g/kg | Concentration in grams per kilogram |
| L, mL | Volume, e.g. of air as measured in AFM (**V** = **r** x **t**) |
| L/min | Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**) |
| min | Time (**t**), e.g. of air sample collection period |

## Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

## Terms

| | |
|---|---|
| **%asbestos** | Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**$P_A$**). |
| **ACM** | Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm. |
| **AF** | Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable". |
| **AFM** | Airborne Fibre Monitoring, e.g. by the MFM. |
| **Amosite** | Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004. |
| **AS** | Australian Standard. |
| **Asbestos Content (as asbestos)** | Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**). |
| **Chrysotile** | Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004. |
| **COC** | Chain of Custody. |
| **Crocidolite** | Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004. |
| **Dry** | Sample is dried by heating prior to analysis. |
| **DS** | Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM. |
| **FA** | Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF. |
| **Fibre Count** | Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003 |
| **Fibre ID** | Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos. |
| **Friable** | Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability. |
| **HSG248** | UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021). |
| **HSG264** | UK HSE HSG264, *Asbestos: The Survey Guide* (2012). |
| **ISO (also ISO/IEC)** | International Organization for Standardization / International Electrotechnical Commission. |
| **K Factor** | Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**). |
| **LOR** | Limit of Reporting. |
| **MFM (also NOHSC:3003)** | Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)]. |
| **NEPM (also ASC NEPM)** | National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended). |
| **Organic** | Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004. |
| **PCM** | Phase Contrast Microscopy. As used for Fibre Counting according to the MFM. |
| **PLM** | Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004. |
| **SMF** | Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004. |
| **SRA** | Sample Receipt Advice. |
| **Trace Analysis** | Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix. |
| **UK HSE HSG** | United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication. |
| **UMF** | Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos. |
| **WA DOH** | Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis* |
| **Weighted Average** | Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**). |

## Comments

Sample No0015187 received was less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

## Sample Integrity

| | |
|---|---|
| Custody Seals Intact (if used) | N/A |
| Attempt to Chill was evident | N/A |
| 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 |

## Asbestos Counter/Identifier:

| | |
|---|---|
| Bennel Jiri | Senior Analyst-Asbestos |

## Authorised by:

| | |
|---|---|
| Sayeed Abu | Senior Analyst-Asbestos |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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| IANZ# 1327 | IANZ# 1290 |

# Sample Receipt Advice

| | |
|---|---|
| **Company name:** | JBS & G Australia (NSW) P/L |
| **Contact name:** | Michelle Delandro |
| **Project name:** | EDPARK-OP |
| **Project ID:** | 63325 |
| **Turnaround time:** | 3 Day |
| **Date/Time received** | Nov 7, 2022 2:13 PM |
| **Eurofins reference** | 939621 |

## 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 : 15.6 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:

**Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com**

Results will be delivered electronically via email to Michelle Delandro - MDelandro@jbsg.com.au.

Global Leader - Results you can trust

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

**NATA Accredited**
**Accreditation Number 1261**
**Site Number 20794**

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:** **Michelle Delandro**

**Report** **939621-W**
Project name EDPARK-OP
Project ID 63325
Received Date Nov 07, 2022

| **Client Sample ID** | | | **BLANK** | **TRIP SPIKE** | **TRIP BLANK** |
|---|---|---|---|---|---|
| **Sample Matrix** | | | **Water** | **Water** | **Water** |
| **Eurofins Sample No.** | | | **S22-No0023129** | **S22-No0023130** | **S22-No0023131** |
| **Date Sampled** | | | **Oct 17, 2022** | **Oct 17, 2022** | **Oct 17, 2022** |
| Test/Reference | LOR | Unit | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | | |
| Perfluorobutanoic acid (PFBA)[N11] | 0.05 | ug/L | < 0.05 | - | - |
| Perfluoropentanoic acid (PFPeA)[N11] | 0.01 | ug/L | < 0.01 | - | - |
| Perfluorohexanoic acid (PFHxA)[N11] | 0.01 | ug/L | < 0.01 | - | - |
| Perfluoroheptanoic acid (PFHpA)[N11] | 0.01 | ug/L | < 0.01 | - | - |
| Perfluorooctanoic acid (PFOA)[N11] | 0.01 | ug/L | < 0.01 | - | - |
| Perfluorononanoic acid (PFNA)[N11] | 0.01 | ug/L | < 0.01 | - | - |
| Perfluorodecanoic acid (PFDA)[N11] | 0.01 | ug/L | < 0.01 | - | - |
| Perfluoroundecanoic acid (PFUnDA)[N11] | 0.01 | ug/L | < 0.01 | - | - |
| Perfluorododecanoic acid (PFDoDA)[N11] | 0.01 | ug/L | < 0.01 | - | - |
| Perfluorotridecanoic acid (PFTrDA)[N15] | 0.01 | ug/L | < 0.01 | - | - |
| Perfluorotetradecanoic acid (PFTeDA)[N11] | 0.01 | ug/L | < 0.01 | - | - |
| 13C4-PFBA (surr.) | 1 | % | 141 | - | - |
| 13C5-PFPeA (surr.) | 1 | % | 133 | - | - |
| 13C5-PFHxA (surr.) | 1 | % | 130 | - | - |
| 13C4-PFHpA (surr.) | 1 | % | 122 | - | - |
| 13C8-PFOA (surr.) | 1 | % | 150 | - | - |
| 13C5-PFNA (surr.) | 1 | % | 135 | - | - |
| 13C6-PFDA (surr.) | 1 | % | 137 | - | - |
| 13C2-PFUnDA (surr.) | 1 | % | 109 | - | - |
| 13C2-PFDoDA (surr.) | 1 | % | 105 | - | - |
| 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 | % | 78 | - | - |
| D3-N-MeFOSA (surr.) | 1 | % | 100 | - | - |

| Client Sample ID | | | BLANK | TRIP SPIKE | TRIP BLANK |
|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water |
| Eurofins Sample No. | | | S22-No0023129 | S22-No0023130 | S22-No0023131 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | | |
| D5-N-EtFOSA (surr.) | 1 | % | 95 | - | - |
| D7-N-MeFOSE (surr.) | 1 | % | 96 | - | - |
| D9-N-EtFOSE (surr.) | 1 | % | 104 | - | - |
| D5-N-EtFOSAA (surr.) | 1 | % | 107 | - | - |
| D3-N-MeFOSAA (surr.) | 1 | % | 116 | - | - |
| **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 | % | 135 | - | - |
| 13C8-PFOS (surr.) | 1 | % | 137 | - | - |
| **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 | % | 89 | - | - |
| 13C2-6:2 FTSA (surr.) | 1 | % | 99 | - | - |
| 13C2-8:2 FTSA (surr.) | 1 | % | 87 | - | - |
| 13C2-10:2 FTSA (surr.) | 1 | % | 77 | - | - |
| **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 | - | - |
| | | | | | |
| TRH C6-C10 | 1 | % | - | 120 | - |
| **Total Recoverable Hydrocarbons** | | | | | |
| Naphthalene | 1 | % | - | 130 | - |
| TRH C6-C9 | 1 | % | - | 110 | - |
| **BTEX** | | | | | |
| Benzene | 1 | % | - | 110 | - |
| Ethylbenzene | 1 | % | - | 130 | - |
| m&p-Xylenes | 1 | % | - | 130 | - |
| o-Xylene | 1 | % | - | 120 | - |
| Toluene | 1 | % | - | 110 | - |
| Xylenes - Total | 1 | % | - | 120 | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | - | 106 | - |

| Client Sample ID | | | BLANK | TRIP SPIKE | TRIP BLANK |
|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water |
| Eurofins Sample No. | | | S22-No0023129 | S22-No0023130 | S22-No0023131 |
| Date Sampled | | | Oct 17, 2022 | Oct 17, 2022 | Oct 17, 2022 |
| Test/Reference | LOR | Unit | | | |
| **Total Recoverable Hydrocarbons** | | | | | |
| TRH C6-C9 | 0.02 | mg/L | - | - | < 0.02 |
| Naphthalene[N02] | 0.01 | mg/L | - | - | < 0.01 |
| TRH C6-C10 | 0.02 | mg/L | - | - | < 0.02 |
| TRH C6-C10 less BTEX (F1)[N04] | 0.02 | mg/L | - | - | < 0.02 |
| **BTEX** | | | | | |
| Benzene | 0.001 | mg/L | - | - | < 0.001 |
| Toluene | 0.001 | mg/L | - | - | < 0.001 |
| Ethylbenzene | 0.001 | mg/L | - | - | < 0.001 |
| m&p-Xylenes | 0.002 | mg/L | - | - | < 0.002 |
| o-Xylene | 0.001 | mg/L | - | - | < 0.001 |
| Xylenes - Total* | 0.003 | mg/L | - | - | < 0.003 |
| 4-Bromofluorobenzene (surr.) | 1 | % | - | - | 116 |

## Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Per- and Polyfluoroalkyl Substances (PFASs) | | | |
| Perfluoroalkyl carboxylic acids (PFCAs) | Brisbane | Nov 10, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Perfluoroalkyl sulfonamido substances | Brisbane | Nov 10, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Perfluoroalkyl sulfonic acids (PFSAs) | Brisbane | Nov 10, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) | Brisbane | Nov 10, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Sydney | Nov 10, 2022 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons | Sydney | Nov 10, 2022 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Sydney | Nov 10, 2022 | 14 Days |
| - Method: LTM-ORG-2010 BTEX and Volatile TRH | | | |

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**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** EDPARK-OP
**Project ID:** 63325

**Order No.:**
**Report #:** 939621
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 7, 2022 2:13 PM
**Due:** Nov 10, 2022
**Priority:** 3 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | BTEXN and Volatile TRH | Per- and Polyfluoroalkyl Substances (PFASs) | BTEXN and Volatile TRH |
|---|---|---|---|---|---|---|---|---|
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | X | |
| **External Laboratory** | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | |
| 1 | BLANK | Oct 17, 2022 | | Water | S22-No0023129 | | X | |
| 2 | TRIP SPIKE | Oct 17, 2022 | | Water | S22-No0023130 | | | X |
| 3 | TRIP BLANK | Oct 17, 2022 | | Water | S22-No0023131 | X | | |
| **Test Counts** | | | | | | 1 | 1 | 1 |

## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

### Units

**mg/kg:** milligrams per kilogram
**mg/L:** milligrams per litre
**µg/L:** micrograms per litre
**ppm:** parts per million
**ppb:** parts per billion
**%:** Percentage
**org/100 mL:** Organisms per 100 millilitres
**NTU:** Nephelometric Turbidity Units
**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres

### Terms

| | |
|---|---|
| **APHA** | American Public Health Association |
| **COC** | Chain of Custody |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **CRM** | Certified Reference Material (ISO17034) - reported as percent recovery. |
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **LOR** | Limit of Reporting. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **SRA** | Sample Receipt Advice |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **TBTO** | Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits. |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **TEQ** | Toxic Equivalency Quotient or Total Equivalence |
| **QSM** | US Department of Defense Quality Systems Manual Version 5.4 |
| **US EPA** | United States Environmental Protection Agency |
| **WA DWER** | Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA |

### QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

### QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | | | | |
| Perfluorobutanoic acid (PFBA) | ug/L | < 0.05 | | | 0.05 | Pass | |
| Perfluoropentanoic acid (PFPeA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorohexanoic acid (PFHxA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluoroheptanoic acid (PFHpA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorooctanoic acid (PFOA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorononanoic acid (PFNA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorodecanoic acid (PFDA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorododecanoic acid (PFDoDA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| **Method Blank** | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | ug/L | < 0.05 | | | 0.05 | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | ug/L | < 0.05 | | | 0.05 | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | ug/L | < 0.05 | | | 0.05 | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | ug/L | < 0.05 | | | 0.05 | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | ug/L | < 0.05 | | | 0.05 | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | ug/L | < 0.05 | | | 0.05 | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | ug/L | < 0.05 | | | 0.05 | Pass | |
| **Method Blank** | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | | | | |
| Perfluorobutanesulfonic acid (PFBS) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorononanesulfonic acid (PFNS) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | ug/L | < 0.01 | | | 0.01 | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | ug/L | < 0.01 | | | 0.01 | Pass | |
| **Method Blank** | | | | | | | |
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)** | | | | | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | ug/L | < 0.05 | | | 0.05 | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | ug/L | < 0.01 | | | 0.01 | Pass | |
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C6-C9 | mg/L | < 0.02 | | | 0.02 | Pass | |
| Naphthalene | mg/L | < 0.01 | | | 0.01 | Pass | |
| TRH C6-C10 | mg/L | < 0.02 | | | 0.02 | Pass | |
| **Method Blank** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Toluene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Ethylbenzene | mg/L | < 0.001 | | | 0.001 | Pass | |
| m&p-Xylenes | mg/L | < 0.002 | | | 0.002 | Pass | |
| o-Xylene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Xylenes - Total* | mg/L | < 0.003 | | | 0.003 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | | | | |
| Perfluorobutanoic acid (PFBA) | % | 104 | | | 50-150 | Pass | |
| Perfluoropentanoic acid (PFPeA) | % | 92 | | | 50-150 | Pass | |
| Perfluorohexanoic acid (PFHxA) | % | 112 | | | 50-150 | Pass | |
| Perfluoroheptanoic acid (PFHpA) | % | 81 | | | 50-150 | Pass | |
| Perfluorooctanoic acid (PFOA) | % | 106 | | | 50-150 | Pass | |
| Perfluorononanoic acid (PFNA) | % | 112 | | | 50-150 | Pass | |
| Perfluorodecanoic acid (PFDA) | % | 77 | | | 50-150 | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | % | 106 | | | 50-150 | Pass | |
| Perfluorododecanoic acid (PFDoDA) | % | 115 | | | 50-150 | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | % | 145 | | | 50-150 | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | % | 137 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | % | 79 | | | 50-150 | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | % | 129 | | | 50-150 | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | % | 74 | | | 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) | % | 126 | | | 50-150 | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | % | 128 | | | 50-150 | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | % | 125 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | | | | |
| Perfluorobutanesulfonic acid (PFBS) | % | 73 | | | 50-150 | Pass | |
| Perfluorononanesulfonic acid (PFNS) | % | 112 | | | 50-150 | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | % | 126 | | | 50-150 | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | % | 86 | | | 50-150 | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | % | 90 | | | 50-150 | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | % | 91 | | | 50-150 | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | % | 95 | | | 50-150 | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | % | 88 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)** | | | | | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | % | 123 | | | 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) | % | 120 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | % | 138 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C6-C9 | % | 112 | | | 70-130 | Pass | |
| Naphthalene | % | 123 | | | 70-130 | Pass | |
| TRH C6-C10 | % | 117 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 97 | | | 70-130 | Pass | |
| Toluene | % | 117 | | | 70-130 | Pass | |
| Ethylbenzene | % | 122 | | | 70-130 | Pass | |
| m&p-Xylenes | % | 125 | | | 70-130 | Pass | |
| o-Xylene | % | 124 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 125 | | | 70-130 | 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) | S22-No0011471 | NCP | % | 99 | | | 50-150 | Pass | |
| Perfluoropentanoic acid (PFPeA) | S22-No0011471 | NCP | % | 99 | | | 50-150 | Pass | |
| Perfluorohexanoic acid (PFHxA) | S22-No0011471 | NCP | % | 120 | | | 50-150 | Pass | |
| Perfluoroheptanoic acid (PFHpA) | S22-No0011471 | NCP | % | 91 | | | 50-150 | Pass | |
| Perfluorooctanoic acid (PFOA) | S22-No0011471 | NCP | % | 136 | | | 50-150 | Pass | |
| Perfluorononanoic acid (PFNA) | S22-No0011471 | NCP | % | 113 | | | 50-150 | Pass | |
| Perfluorodecanoic acid (PFDA) | S22-No0011471 | NCP | % | 80 | | | 50-150 | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | S22-No0011471 | NCP | % | 102 | | | 50-150 | Pass | |
| Perfluorododecanoic acid (PFDoDA) | S22-No0011471 | NCP | % | 108 | | | 50-150 | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | S22-No0011471 | NCP | % | 142 | | | 50-150 | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | S22-No0011471 | NCP | % | 126 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | Result 1 | | | | | |
| Perfluorooctane sulfonamide (FOSA) | S22-No0011471 | NCP | % | 71 | | | 50-150 | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | S22-No0011471 | NCP | % | 112 | | | 50-150 | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | S22-No0011471 | NCP | % | 71 | | | 50-150 | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | S22-No0011471 | NCP | % | 109 | | | 50-150 | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | S22-No0011471 | NCP | % | 114 | | | 50-150 | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | S22-No0011471 | NCP | % | 111 | | | 50-150 | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | S22-No0011471 | NCP | % | 119 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | Result 1 | | | | | |
| Perfluorobutanesulfonic acid (PFBS) | S22-No0011471 | NCP | % | 71 | | | 50-150 | Pass | |
| Perfluorononanesulfonic acid (PFNS) | S22-No0011471 | NCP | % | 95 | | | 50-150 | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | S22-No0011471 | NCP | % | 101 | | | 50-150 | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | S22-No0011471 | NCP | % | 82 | | | 50-150 | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | S22-No0011471 | NCP | % | 89 | | | 50-150 | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | S22-No0011471 | NCP | % | 94 | | | 50-150 | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | S22-No0011471 | NCP | % | 92 | | | 50-150 | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | S22-No0011471 | NCP | % | 61 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)** | | | | Result 1 | | | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | S22-No0011471 | NCP | % | 128 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | S22-No0011471 | NCP | % | 104 | | | 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) | S22-No0011471 | NCP | % | 115 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | S22-No0011471 | NCP | % | 130 | | | 50-150 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | | | | | |
| TRH C6-C9 | N22-No0009507 | NCP | % | 86 | | | 70-130 | Pass | |
| Naphthalene | N22-No0009507 | NCP | % | 89 | | | 70-130 | Pass | |
| TRH C6-C10 | N22-No0009507 | NCP | % | 86 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |
| Benzene | N22-No0009507 | NCP | % | 92 | | | 70-130 | Pass | |
| Toluene | N22-No0009507 | NCP | % | 91 | | | 70-130 | Pass | |
| Ethylbenzene | N22-No0009507 | NCP | % | 91 | | | 70-130 | Pass | |
| m&p-Xylenes | N22-No0009507 | NCP | % | 93 | | | 70-130 | Pass | |
| o-Xylene | N22-No0009507 | NCP | % | 93 | | | 70-130 | Pass | |
| Xylenes - Total* | N22-No0009507 | NCP | % | 93 | | | 70-130 | 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) | S22-No0011466 | NCP | ug/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Perfluoropentanoic acid (PFPeA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorohexanoic acid (PFHxA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluoroheptanoic acid (PFHpA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorooctanoic acid (PFOA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorononanoic acid (PFNA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorodecanoic acid (PFDA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorododecanoic acid (PFDoDA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonamido substances** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorooctane sulfonamide (FOSA) | S22-No0011466 | NCP | ug/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | S22-No0011466 | NCP | ug/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | S22-No0011466 | NCP | ug/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | S22-No0011466 | NCP | ug/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | S22-No0011466 | NCP | ug/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | S22-No0011466 | NCP | ug/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | S22-No0011466 | NCP | ug/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorobutanesulfonic acid (PFBS) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorononanesulfonic acid (PFNS) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | S22-No0011466 | 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) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | S22-No0011466 | NCP | ug/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | S22-No0011466 | NCP | ug/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | N22-No0009505 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| Naphthalene | N22-No0009505 | NCP | mg/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| TRH C6-C10 | N22-No0009505 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | N22-No0009505 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Toluene | N22-No0009505 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Ethylbenzene | N22-No0009505 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| m&p-Xylenes | N22-No0009505 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| o-Xylene | N22-No0009505 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Xylenes - Total* | N22-No0009505 | NCP | mg/L | < 0.003 | < 0.003 | <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 |
|---|---|
| N02 | Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid. |
| N04 | F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. |
| 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:

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Jonathon Angell | Senior Analyst-PFAS |
| Roopesh Rangarajan | Senior Analyst-Volatile |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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# CERTIFICATE OF ANALYSIS 308571

## Client Details

| | |
|---|---|
| **Client** | JBS & G (NSW & WA) Pty Ltd |
| **Attention** | M Chapman, Michelle Delandro |
| **Address** | Level 1, 50 Margaret St, Sydney, NSW, 2000 |

## Sample Details

| | |
|---|---|
| **Your Reference** | **63325, Ed Park -OP** |
| **Number of Samples** | 2 Soil |
| **Date samples received** | 20/10/2022 |
| **Date completed instructions received** | 20/10/2022 |

## Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

**Please refer to the last page of this report for any comments relating to the results.**

## Report Details

| | |
|---|---|
| **Date results requested by** | 27/10/2022 |
| **Date of Issue** | 27/10/2022 |

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**Asbestos Approved By**
Analysed by Asbestos Approved Analyst: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

**Results Approved By**
Alexander Mitchell Maclean, Senior Chemist
Giovanni Agosti, Group Technical Manager
Liam Timmins, Organic Instruments Team Leader
Lucy Zhu, Asbestos Supervisor

**Authorised By**



Nancy Zhang, Laboratory Manager

| PFAS in Soils Extended | | | |
|---|---|---|---|
| Our Reference | | 308571-1 | 308571-2 |
| Your Reference | UNITS | QA20221017-01 | QA20221017-02 |
| Date Sampled | | 17/10/2022 | 17/10/2022 |
| Type of sample | | Soil | Soil |
| Date prepared | - | 25/10/2022 | 25/10/2022 |
| Date analysed | - | 25/10/2022 | 25/10/2022 |
| Perfluorobutanesulfonic acid | µg/kg | <0.1 | <0.1 |
| Perfluoropentanesulfonic acid | µg/kg | <0.1 | <0.1 |
| Perfluorohexanesulfonic acid - PFHxS | µg/kg | <0.1 | <0.1 |
| Perfluoroheptanesulfonic acid | µg/kg | <0.1 | <0.1 |
| Perfluorooctanesulfonic acid PFOS | µg/kg | 0.6 | 0.1 |
| Perfluorodecanesulfonic acid | µg/kg | <0.2 | <0.2 |
| Perfluorobutanoic acid | µg/kg | <0.2 | <0.2 |
| Perfluoropentanoic acid | µg/kg | <0.2 | <0.2 |
| Perfluorohexanoic acid | µg/kg | <0.1 | <0.1 |
| Perfluoroheptanoic acid | µg/kg | <0.1 | <0.1 |
| Perfluorooctanoic acid PFOA | µg/kg | 0.2 | <0.1 |
| Perfluorononanoic acid | µg/kg | <0.1 | <0.1 |
| Perfluorodecanoic acid | µg/kg | <0.5 | <0.5 |
| Perfluoroundecanoic acid | µg/kg | <0.5 | <0.5 |
| Perfluorododecanoic acid | µg/kg | <0.5 | <0.5 |
| Perfluorotridecanoic acid | µg/kg | <0.5 | <0.5 |
| Perfluorotetradecanoic acid | µg/kg | <5 | <5 |
| 4:2 FTS | µg/kg | <0.1 | <0.1 |
| 6:2 FTS | µg/kg | <0.1 | <0.1 |
| 8:2 FTS | µg/kg | <0.2 | <0.2 |
| 10:2 FTS | µg/kg | <0.2 | <0.2 |
| Perfluorooctane sulfonamide | µg/kg | <1 | <1 |
| N-Methyl perfluorooctane sulfonamide | µg/kg | <1 | <1 |
| N-Ethyl perfluorooctanesulfon amide | µg/kg | <1 | <1 |
| N-Me perfluorooctanesulfonamid oethanol | µg/kg | <1 | <1 |
| N-Et perfluorooctanesulfonamid oethanol | µg/kg | <5 | <5 |
| MePerfluorooctanesulf- amid oacetic acid | µg/kg | <0.2 | <0.2 |
| EtPerfluorooctanesulf amid oacetic acid | µg/kg | <0.2 | <0.2 |
| *Surrogate* $^{13}C_8$ *PFOS* | % | 98 | 102 |
| *Surrogate* $^{13}C_2$ *PFOA* | % | 98 | 97 |
| *Extracted ISTD* $^{13}C_3$ *PFBS* | % | 93 | 94 |
| *Extracted ISTD* $^{18}O_2$ *PFHxS* | % | 94 | 95 |
| *Extracted ISTD* $^{13}C_4$ *PFOS* | % | 97 | 98 |
| *Extracted ISTD* $^{13}C_4$ *PFBA* | % | 95 | 94 |

| PFAS in Soils Extended | | | |
|---|---|---|---|
| Our Reference | | 308571-1 | 308571-2 |
| Your Reference | UNITS | QA20221017-01 | QA20221017-02 |
| Date Sampled | | 17/10/2022 | 17/10/2022 |
| Type of sample | | Soil | Soil |
| *Extracted ISTD* $^{13}C_3$ *PFPeA* | % | 93 | 96 |
| *Extracted ISTD* $^{13}C_2$ *PFHxA* | % | 93 | 94 |
| *Extracted ISTD* $^{13}C_4$ *PFHpA* | % | 95 | 96 |
| *Extracted ISTD* $^{13}C_4$ *PFOA* | % | 100 | 102 |
| *Extracted ISTD* $^{13}C_5$ *PFNA* | % | 109 | 109 |
| *Extracted ISTD* $^{13}C_2$ *PFDA* | % | 98 | 95 |
| *Extracted ISTD* $^{13}C_2$ *PFUnDA* | % | 88 | 86 |
| *Extracted ISTD* $^{13}C_2$ *PFDoDA* | % | 113 | 101 |
| *Extracted ISTD* $^{13}C_2$ *PFTeDA* | % | 99 | 101 |
| *Extracted ISTD* $^{13}C_2$ *4:2FTS* | % | 104 | 102 |
| *Extracted ISTD* $^{13}C_2$ *6:2FTS* | % | 129 | 120 |
| *Extracted ISTD* $^{13}C_2$ *8:2FTS* | % | 144 | 128 |
| *Extracted ISTD* $^{13}C_8$ *FOSA* | % | 103 | 103 |
| *Extracted ISTD* $d_3$ *N MeFOSA* | % | 89 | 94 |
| *Extracted ISTD* $d_5$ *N EtFOSA* | % | 102 | 103 |
| *Extracted ISTD* $d_7$ *N MeFOSE* | % | 99 | 101 |
| *Extracted ISTD* $d_9$ *N EtFOSE* | % | 94 | 93 |
| *Extracted ISTD* $d_3$ *N MeFOSAA* | % | 115 | 117 |
| *Extracted ISTD* $d_5$ *N EtFOSAA* | % | 99 | 85 |
| Total Positive PFHxS & PFOS | µg/kg | 0.6 | 0.1 |
| Total Positive PFOS & PFOA | µg/kg | 0.9 | 0.1 |
| Total Positive PFAS | µg/kg | 0.9 | 0.1 |

| vTRH(C6-C10)/BTEXN in Soil | | | |
|---|---|---|---|
| Our Reference | | 308571-1 | 308571-2 |
| Your Reference | UNITS | QA20221017-01 | QA20221017-02 |
| Date Sampled | | 17/10/2022 | 17/10/2022 |
| Type of sample | | Soil | Soil |
| Date extracted | - | 24/10/2022 | 24/10/2022 |
| Date analysed | - | 26/10/2022 | 26/10/2022 |
| TRH $C_6$ - $C_9$ | mg/kg | <25 | <25 |
| TRH $C_6$ - $C_{10}$ | mg/kg | <25 | <25 |
| vTPH $C_6$ - $C_{10}$ less BTEX (F1) | mg/kg | <25 | <25 |
| Benzene | mg/kg | <0.2 | <0.2 |
| Toluene | mg/kg | <0.5 | <0.5 |
| Ethylbenzene | mg/kg | <1 | <1 |
| m+p-xylene | mg/kg | <2 | <2 |
| o-Xylene | mg/kg | <1 | <1 |
| Naphthalene | mg/kg | <1 | <1 |
| Total +ve Xylenes | mg/kg | <1 | <1 |
| *Surrogate* aaa-Trifluorotoluene | % | 94 | 79 |

| svTRH (C10-C40) in Soil | | | |
|---|---|---|---|
| Our Reference | | 308571-1 | 308571-2 |
| Your Reference | UNITS | QA20221017-01 | QA20221017-02 |
| Date Sampled | | 17/10/2022 | 17/10/2022 |
| Type of sample | | Soil | Soil |
| Date extracted | - | 24/10/2022 | 24/10/2022 |
| Date analysed | - | 25/10/2022 | 25/10/2022 |
| TRH $C_{10}$ - $C_{14}$ | mg/kg | <50 | <50 |
| TRH $C_{15}$ - $C_{28}$ | mg/kg | <100 | <100 |
| TRH $C_{29}$ - $C_{36}$ | mg/kg | <100 | <100 |
| Total +ve TRH (C10-C36) | mg/kg | <50 | <50 |
| TRH >$C_{10}$ -$C_{16}$ | mg/kg | <50 | <50 |
| TRH >$C_{10}$ - $C_{16}$ less Naphthalene (F2) | mg/kg | <50 | <50 |
| TRH >$C_{16}$ -$C_{34}$ | mg/kg | <100 | <100 |
| TRH >$C_{34}$ -$C_{40}$ | mg/kg | <100 | <100 |
| Total +ve TRH (>C10-C40) | mg/kg | <50 | <50 |
| *Surrogate* o-Terphenyl | % | 93 | 95 |

| PAHs in Soil | | | |
|---|---|---|---|
| Our Reference | | 308571-1 | 308571-2 |
| Your Reference | UNITS | QA20221017-01 | QA20221017-02 |
| Date Sampled | | 17/10/2022 | 17/10/2022 |
| Type of sample | | Soil | Soil |
| Date extracted | - | 24/10/2022 | 24/10/2022 |
| Date analysed | - | 24/10/2022 | 24/10/2022 |
| Naphthalene | mg/kg | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | <0.1 | <0.1 |
| Acenaphthene | mg/kg | <0.1 | <0.1 |
| Fluorene | mg/kg | <0.1 | <0.1 |
| Phenanthrene | mg/kg | 0.2 | <0.1 |
| Anthracene | mg/kg | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 0.1 | <0.1 |
| Pyrene | mg/kg | 0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | <0.1 | <0.1 |
| Chrysene | mg/kg | 0.1 | <0.1 |
| Benzo(b,j+k)fluoranthene | mg/kg | <0.2 | <0.2 |
| Benzo(a)pyrene | mg/kg | <0.05 | <0.05 |
| Indeno(1,2,3-c,d)pyrene | mg/kg | <0.1 | <0.1 |
| Dibenzo(a,h)anthracene | mg/kg | <0.1 | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 | <0.1 |
| Total +ve PAH's | mg/kg | 0.5 | <0.05 |
| Benzo(a)pyrene TEQ calc (zero) | mg/kg | <0.5 | <0.5 |
| Benzo(a)pyrene TEQ calc(half) | mg/kg | <0.5 | <0.5 |
| Benzo(a)pyrene TEQ calc(PQL) | mg/kg | <0.5 | <0.5 |
| *Surrogate p*-Terphenyl-d14 | % | 81 | 69 |

| Organochlorine Pesticides in soil | | | |
|---|---|---|---|
| Our Reference | | 308571-1 | 308571-2 |
| Your Reference | UNITS | QA20221017-01 | QA20221017-02 |
| Date Sampled | | 17/10/2022 | 17/10/2022 |
| Type of sample | | Soil | Soil |
| Date extracted | - | 24/10/2022 | 24/10/2022 |
| Date analysed | - | 24/10/2022 | 24/10/2022 |
| alpha-BHC | mg/kg | <0.1 | <0.1 |
| HCB | mg/kg | <0.1 | <0.1 |
| beta-BHC | mg/kg | <0.1 | <0.1 |
| gamma-BHC | mg/kg | <0.1 | <0.1 |
| Heptachlor | mg/kg | <0.1 | <0.1 |
| delta-BHC | mg/kg | <0.1 | <0.1 |
| Aldrin | mg/kg | <0.1 | <0.1 |
| Heptachlor Epoxide | mg/kg | <0.1 | <0.1 |
| gamma-Chlordane | mg/kg | <0.1 | <0.1 |
| alpha-chlordane | mg/kg | <0.1 | <0.1 |
| Endosulfan I | mg/kg | <0.1 | <0.1 |
| pp-DDE | mg/kg | <0.1 | <0.1 |
| Dieldrin | mg/kg | <0.1 | <0.1 |
| Endrin | mg/kg | <0.1 | <0.1 |
| Endosulfan II | mg/kg | <0.1 | <0.1 |
| pp-DDD | mg/kg | <0.1 | <0.1 |
| Endrin Aldehyde | mg/kg | <0.1 | <0.1 |
| pp-DDT | mg/kg | <0.1 | <0.1 |
| Endosulfan Sulphate | mg/kg | <0.1 | <0.1 |
| Methoxychlor | mg/kg | <0.1 | <0.1 |
| Total +ve DDT+DDD+DDE | mg/kg | <0.1 | <0.1 |
| *Surrogate* TCMX | % | 76 | 80 |

| PCBs in Soil | | | |
|---|---|---|---|
| Our Reference | | 308571-1 | 308571-2 |
| Your Reference | UNITS | QA20221017-01 | QA20221017-02 |
| Date Sampled | | 17/10/2022 | 17/10/2022 |
| Type of sample | | Soil | Soil |
| Date extracted | - | 24/10/2022 | 24/10/2022 |
| Date analysed | - | 24/10/2022 | 24/10/2022 |
| Aroclor 1016 | mg/kg | <0.1 | <0.1 |
| Aroclor 1221 | mg/kg | <0.1 | <0.1 |
| Aroclor 1232 | mg/kg | <0.1 | <0.1 |
| Aroclor 1242 | mg/kg | <0.1 | <0.1 |
| Aroclor 1248 | mg/kg | <0.1 | <0.1 |
| Aroclor 1254 | mg/kg | <0.1 | <0.1 |
| Aroclor 1260 | mg/kg | <0.1 | <0.1 |
| Total +ve PCBs (1016-1260) | mg/kg | <0.1 | <0.1 |
| *Surrogate* TCMX | % | 76 | 80 |

| Acid Extractable metals in soil | | | |
|---|---|---|---|
| Our Reference | | 308571-1 | 308571-2 |
| Your Reference | UNITS | QA20221017-01 | QA20221017-02 |
| Date Sampled | | 17/10/2022 | 17/10/2022 |
| Type of sample | | Soil | Soil |
| Date prepared | - | 24/10/2022 | 24/10/2022 |
| Date analysed | - | 24/10/2022 | 24/10/2022 |
| Arsenic | mg/kg | 4 | 7 |
| Cadmium | mg/kg | <0.4 | <0.4 |
| Chromium | mg/kg | 10 | 24 |
| Copper | mg/kg | 15 | 8 |
| Lead | mg/kg | 28 | 20 |
| Mercury | mg/kg | <0.1 | <0.1 |
| Nickel | mg/kg | 6 | 7 |
| Zinc | mg/kg | 24 | 19 |

| Moisture | | | |
|---|---|---|---|
| Our Reference | | 308571-1 | 308571-2 |
| Your Reference | UNITS | QA20221017-01 | QA20221017-02 |
| Date Sampled | | 17/10/2022 | 17/10/2022 |
| Type of sample | | Soil | Soil |
| Date prepared | - | 24/10/2022 | 24/10/2022 |
| Date analysed | - | 25/10/2022 | 25/10/2022 |
| Moisture | % | 15 | 16 |

| Asbestos ID - soils NEPM - ASB-001 | | | |
|---|---|---|---|
| Our Reference | | 308571-1 | 308571-2 |
| Your Reference | UNITS | QA20221017-01 | QA20221017-02 |
| Date Sampled | | 17/10/2022 | 17/10/2022 |
| Type of sample | | Soil | Soil |
| Date analysed | - | 24/10/2022 | 24/10/2022 |
| Sample mass tested | g | 606.62 | 620.08 |
| Sample Description | - | Brown coarse-grained soil & rocks | Brown coarse-grained soil & rocks |
| Asbestos ID in soil (AS4964) >0.1g/kg | - | No asbestos detected at reporting limit of 0.1g/kg<br>Organic fibres detected | No asbestos detected at reporting limit of 0.1g/kg<br>Organic fibres detected |
| Trace Analysis | - | No asbestos detected | No asbestos detected |
| Total Asbestos[#1] | g/kg | <0.1 | <0.1 |
| Asbestos ID in soil <0.1g/kg* | - | No visible asbestos detected | No visible asbestos detected |
| ACM >7mm Estimation* | g | – | – |
| FA and AF Estimation* | g | – | – |
| ACM >7mm Estimation* | %(w/w) | <0.01 | <0.01 |
| FA and AF Estimation*#2 | %(w/w) | <0.001 | <0.001 |

| Method ID | Methodology Summary |
|---|---|
| **ASB-001** | Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004. |
| **ASB-001** | Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004.<br>Results reported denoted with * are outside our scope of NATA accreditation.<br><br>**NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF)<br><br>**NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.<br><br>Estimation = Estimated asbestos weight<br><br>Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques. |
| **Inorg-008** | Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours. |
| **Metals-020** | Determination of various metals by ICP-AES. |
| **Metals-021** | Determination of Mercury by Cold Vapour AAS. |
| **Org-020** | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.<br>F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. |
| **Org-020** | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.<br><br>F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.<br><br>Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40). |
| **Org-021** | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. |

| Method ID | Methodology Summary |
|---|---|
| **Org-021** | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.<br>Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs. |
| **Org-022/025** | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. |
| **Org-022/025** | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS.<br><br>Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT. |
| **Org-022/025** | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.<br>For soil results:-<br>1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present.<br>2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL.<br>3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above.<br>Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs. |
| **Org-023** | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. |
| **Org-023** | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. |
| **Org-023** | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.<br>Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes. |

| Method ID | Methodology Summary |
|---|---|
| **Org-029** | Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3.<br><br>Analysis is undertaken with LC-MS/MS.<br><br>PFAS results include the sum of branched and linear isomers where applicable.<br><br>Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.3 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components.<br><br>Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER. |

| QUALITY CONTROL: PFAS in Soils Extended | | | | | Duplicate | | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date prepared | - | | | 25/10/2022 | [NT] | [NT] | [NT] | [NT] | 25/10/2022 | [NT] |
| Date analysed | - | | | 25/10/2022 | [NT] | [NT] | [NT] | [NT] | 25/10/2022 | [NT] |
| Perfluorobutanesulfonic acid | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 105 | [NT] |
| Perfluoropentanesulfonic acid | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 98 | [NT] |
| Perfluorohexanesulfonic acid - PFHxS | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 107 | [NT] |
| Perfluoroheptanesulfonic acid | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 106 | [NT] |
| Perfluorooctanesulfonic acid PFOS | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 101 | [NT] |
| Perfluorodecanesulfonic acid | µg/kg | 0.2 | Org-029 | <0.2 | [NT] | [NT] | [NT] | [NT] | 117 | [NT] |
| Perfluorobutanoic acid | µg/kg | 0.2 | Org-029 | <0.2 | [NT] | [NT] | [NT] | [NT] | 108 | [NT] |
| Perfluoropentanoic acid | µg/kg | 0.2 | Org-029 | <0.2 | [NT] | [NT] | [NT] | [NT] | 101 | [NT] |
| Perfluorohexanoic acid | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| Perfluoroheptanoic acid | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| Perfluorooctanoic acid PFOA | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 106 | [NT] |
| Perfluorononanoic acid | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 96 | [NT] |
| Perfluorodecanoic acid | µg/kg | 0.5 | Org-029 | <0.5 | [NT] | [NT] | [NT] | [NT] | 113 | [NT] |
| Perfluoroundecanoic acid | µg/kg | 0.5 | Org-029 | <0.5 | [NT] | [NT] | [NT] | [NT] | 112 | [NT] |
| Perfluorododecanoic acid | µg/kg | 0.5 | Org-029 | <0.5 | [NT] | [NT] | [NT] | [NT] | 113 | [NT] |
| Perfluorotridecanoic acid | µg/kg | 0.5 | Org-029 | <0.5 | [NT] | [NT] | [NT] | [NT] | 111 | [NT] |
| Perfluorotetradecanoic acid | µg/kg | 5 | Org-029 | <5 | [NT] | [NT] | [NT] | [NT] | 113 | [NT] |
| 4:2 FTS | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 107 | [NT] |
| 6:2 FTS | µg/kg | 0.1 | Org-029 | <0.1 | [NT] | [NT] | [NT] | [NT] | 105 | [NT] |
| 8:2 FTS | µg/kg | 0.2 | Org-029 | <0.2 | [NT] | [NT] | [NT] | [NT] | 94 | [NT] |
| 10:2 FTS | µg/kg | 0.2 | Org-029 | <0.2 | [NT] | [NT] | [NT] | [NT] | 112 | [NT] |
| Perfluorooctane sulfonamide | µg/kg | 1 | Org-029 | <1 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| N-Methyl perfluorooctane sulfonamide | µg/kg | 1 | Org-029 | <1 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| N-Ethyl perfluorooctanesulfon amide | µg/kg | 1 | Org-029 | <1 | [NT] | [NT] | [NT] | [NT] | 107 | [NT] |
| N-Me perfluorooctanesulfonamid oethanol | µg/kg | 1 | Org-029 | <1 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| N-Et perfluorooctanesulfonamid oethanol | µg/kg | 5 | Org-029 | <5 | [NT] | [NT] | [NT] | [NT] | 113 | [NT] |
| MePerfluorooctanesulf- amid oacetic acid | µg/kg | 0.2 | Org-029 | <0.2 | [NT] | [NT] | [NT] | [NT] | 104 | [NT] |
| EtPerfluorooctanesulf amid oacetic acid | µg/kg | 0.2 | Org-029 | <0.2 | [NT] | [NT] | [NT] | [NT] | 96 | [NT] |
| *Surrogate* $^{13}C_8$ *PFOS* | % | | Org-029 | 103 | [NT] | [NT] | [NT] | [NT] | 96 | [NT] |
| *Surrogate* $^{13}C_2$ *PFOA* | % | | Org-029 | 95 | [NT] | [NT] | [NT] | [NT] | 100 | [NT] |

| QUALITY CONTROL: PFAS in Soils Extended | | | | | Duplicate | | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| *Extracted ISTD* $^{13}C_3$ *PFBS* | % | | Org-029 | 101 | [NT] | [NT] | [NT] | [NT] | 99 | [NT] |
| *Extracted ISTD* $^{18}O_2$ *PFHxS* | % | | Org-029 | 103 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| *Extracted ISTD* $^{13}C_4$ *PFOS* | % | | Org-029 | 107 | [NT] | [NT] | [NT] | [NT] | 106 | [NT] |
| *Extracted ISTD* $^{13}C_4$ *PFBA* | % | | Org-029 | 108 | [NT] | [NT] | [NT] | [NT] | 106 | [NT] |
| *Extracted ISTD* $^{13}C_3$ *PFPeA* | % | | Org-029 | 102 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *PFHxA* | % | | Org-029 | 100 | [NT] | [NT] | [NT] | [NT] | 101 | [NT] |
| *Extracted ISTD* $^{13}C_4$ *PFHpA* | % | | Org-029 | 102 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| *Extracted ISTD* $^{13}C_4$ *PFOA* | % | | Org-029 | 108 | [NT] | [NT] | [NT] | [NT] | 105 | [NT] |
| *Extracted ISTD* $^{13}C_5$ *PFNA* | % | | Org-029 | 116 | [NT] | [NT] | [NT] | [NT] | 115 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *PFDA* | % | | Org-029 | 100 | [NT] | [NT] | [NT] | [NT] | 100 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *PFUnDA* | % | | Org-029 | 100 | [NT] | [NT] | [NT] | [NT] | 99 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *PFDoDA* | % | | Org-029 | 114 | [NT] | [NT] | [NT] | [NT] | 108 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *PFTeDA* | % | | Org-029 | 115 | [NT] | [NT] | [NT] | [NT] | 118 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *4:2FTS* | % | | Org-029 | 103 | [NT] | [NT] | [NT] | [NT] | 100 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *6:2FTS* | % | | Org-029 | 112 | [NT] | [NT] | [NT] | [NT] | 111 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *8:2FTS* | % | | Org-029 | 117 | [NT] | [NT] | [NT] | [NT] | 116 | [NT] |
| *Extracted ISTD* $^{13}C_8$ *FOSA* | % | | Org-029 | 121 | [NT] | [NT] | [NT] | [NT] | 110 | [NT] |
| *Extracted ISTD* $d_3$ *N MeFOSA* | % | | Org-029 | 101 | [NT] | [NT] | [NT] | [NT] | 102 | [NT] |
| *Extracted ISTD* $d_5$ *N EtFOSA* | % | | Org-029 | 119 | [NT] | [NT] | [NT] | [NT] | 114 | [NT] |
| *Extracted ISTD* $d_7$ *N MeFOSE* | % | | Org-029 | 119 | [NT] | [NT] | [NT] | [NT] | 112 | [NT] |

| QUALITY CONTROL: PFAS in Soils Extended | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| *Extracted ISTD* $d_9$ *N EtFOSE* | % | | Org-029 | 110 | [NT] | [NT] | [NT] | [NT] | 108 | [NT] |
| *Extracted ISTD* $d_3$ *N MeFOSAA* | % | | Org-029 | 89 | [NT] | [NT] | [NT] | [NT] | 96 | [NT] |
| *Extracted ISTD* $d_5$ *N EtFOSAA* | % | | Org-029 | 92 | [NT] | [NT] | [NT] | [NT] | 99 | [NT] |

| QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date extracted | - | | | 24/10/2022 | [NT] | [NT] | [NT] | [NT] | 24/10/2022 | [NT] |
| Date analysed | - | | | 26/10/2022 | [NT] | [NT] | [NT] | [NT] | 26/10/2022 | [NT] |
| TRH $C_6$ - $C_9$ | mg/kg | 25 | Org-023 | <25 | [NT] | [NT] | [NT] | [NT] | 84 | [NT] |
| TRH $C_6$ - $C_{10}$ | mg/kg | 25 | Org-023 | <25 | [NT] | [NT] | [NT] | [NT] | 84 | [NT] |
| Benzene | mg/kg | 0.2 | Org-023 | <0.2 | [NT] | [NT] | [NT] | [NT] | 87 | [NT] |
| Toluene | mg/kg | 0.5 | Org-023 | <0.5 | [NT] | [NT] | [NT] | [NT] | 83 | [NT] |
| Ethylbenzene | mg/kg | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | 82 | [NT] |
| m+p-xylene | mg/kg | 2 | Org-023 | <2 | [NT] | [NT] | [NT] | [NT] | 85 | [NT] |
| o-Xylene | mg/kg | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | 90 | [NT] |
| Naphthalene | mg/kg | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| *Surrogate* aaa-Trifluorotoluene | % | | Org-023 | 101 | [NT] | [NT] | [NT] | [NT] | 104 | [NT] |

| QUALITY CONTROL: svTRH (C10-C40) in Soil | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date extracted | - | | | 24/10/2022 | [NT] | [NT] | [NT] | [NT] | 24/10/2022 | [NT] |
| Date analysed | - | | | 25/10/2022 | [NT] | [NT] | [NT] | [NT] | 25/10/2022 | [NT] |
| TRH $C_{10}$ - $C_{14}$ | mg/kg | 50 | Org-020 | <50 | [NT] | [NT] | [NT] | [NT] | 114 | [NT] |
| TRH $C_{15}$ - $C_{28}$ | mg/kg | 100 | Org-020 | <100 | [NT] | [NT] | [NT] | [NT] | 118 | [NT] |
| TRH $C_{29}$ - $C_{36}$ | mg/kg | 100 | Org-020 | <100 | [NT] | [NT] | [NT] | [NT] | 114 | [NT] |
| TRH >$C_{10}$ -$C_{16}$ | mg/kg | 50 | Org-020 | <50 | [NT] | [NT] | [NT] | [NT] | 114 | [NT] |
| TRH >$C_{16}$ -$C_{34}$ | mg/kg | 100 | Org-020 | <100 | [NT] | [NT] | [NT] | [NT] | 118 | [NT] |
| TRH >$C_{34}$ -$C_{40}$ | mg/kg | 100 | Org-020 | <100 | [NT] | [NT] | [NT] | [NT] | 114 | [NT] |
| *Surrogate* o-Terphenyl | % | | Org-020 | 93 | [NT] | [NT] | [NT] | [NT] | 122 | [NT] |

| QUALITY CONTROL: PAHs in Soil | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date extracted | - | | | 24/10/2022 | [NT] | [NT] | [NT] | [NT] | 24/10/2022 | [NT] |
| Date analysed | - | | | 24/10/2022 | [NT] | [NT] | [NT] | [NT] | 24/10/2022 | [NT] |
| Naphthalene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 113 | [NT] |
| Acenaphthylene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Acenaphthene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 113 | [NT] |
| Fluorene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 116 | [NT] |
| Phenanthrene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 132 | [NT] |
| Anthracene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Fluoranthene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 119 | [NT] |
| Pyrene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 117 | [NT] |
| Benzo(a)anthracene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Chrysene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 83 | [NT] |
| Benzo(b,j+k)fluoranthene | mg/kg | 0.2 | Org-022/025 | <0.2 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Benzo(a)pyrene | mg/kg | 0.05 | Org-022/025 | <0.05 | [NT] | [NT] | [NT] | [NT] | 110 | [NT] |
| Indeno(1,2,3-c,d)pyrene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Dibenzo(a,h)anthracene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Benzo(g,h,i)perylene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| *Surrogate p*-Terphenyl-d14 | % | | Org-022/025 | 80 | [NT] | [NT] | [NT] | [NT] | 73 | [NT] |

| QUALITY CONTROL: Organochlorine Pesticides in soil | | | | | Duplicate | | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date extracted | - | | | 24/10/2022 | [NT] | [NT] | [NT] | [NT] | 24/10/2022 | [NT] |
| Date analysed | - | | | 24/10/2022 | [NT] | [NT] | [NT] | [NT] | 24/10/2022 | [NT] |
| alpha-BHC | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 118 | [NT] |
| HCB | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| beta-BHC | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 124 | [NT] |
| gamma-BHC | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Heptachlor | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 133 | [NT] |
| delta-BHC | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aldrin | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 140 | [NT] |
| Heptachlor Epoxide | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 114 | [NT] |
| gamma-Chlordane | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| alpha-chlordane | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Endosulfan I | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| pp-DDE | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 113 | [NT] |
| Dieldrin | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 120 | [NT] |
| Endrin | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 98 | [NT] |
| Endosulfan II | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| pp-DDD | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 104 | [NT] |
| Endrin Aldehyde | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| pp-DDT | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Endosulfan Sulphate | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 100 | [NT] |
| Methoxychlor | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| *Surrogate* TCMX | % | | Org-022/025 | 87 | [NT] | [NT] | [NT] | [NT] | 88 | [NT] |

| QUALITY CONTROL: PCBs in Soil | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date extracted | - | | | 24/10/2022 | [NT] | [NT] | [NT] | [NT] | 24/10/2022 | [NT] |
| Date analysed | - | | | 24/10/2022 | [NT] | [NT] | [NT] | [NT] | 24/10/2022 | [NT] |
| Aroclor 1016 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aroclor 1221 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aroclor 1232 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aroclor 1242 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aroclor 1248 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aroclor 1254 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | 126 | [NT] |
| Aroclor 1260 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| *Surrogate* TCMX | % | | Org-021 | 87 | [NT] | [NT] | [NT] | [NT] | 88 | [NT] |

| QUALITY CONTROL: Acid Extractable metals in soil | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date prepared | - | | | 24/10/2022 | [NT] | [NT] | [NT] | [NT] | 24/10/2022 | [NT] |
| Date analysed | - | | | 24/10/2022 | [NT] | [NT] | [NT] | [NT] | 24/10/2022 | [NT] |
| Arsenic | mg/kg | 4 | Metals-020 | <4 | [NT] | [NT] | [NT] | [NT] | 100 | [NT] |
| Cadmium | mg/kg | 0.4 | Metals-020 | <0.4 | [NT] | [NT] | [NT] | [NT] | 94 | [NT] |
| Chromium | mg/kg | 1 | Metals-020 | <1 | [NT] | [NT] | [NT] | [NT] | 113 | [NT] |
| Copper | mg/kg | 1 | Metals-020 | <1 | [NT] | [NT] | [NT] | [NT] | 99 | [NT] |
| Lead | mg/kg | 1 | Metals-020 | <1 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| Mercury | mg/kg | 0.1 | Metals-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| Nickel | mg/kg | 1 | Metals-020 | <1 | [NT] | [NT] | [NT] | [NT] | 101 | [NT] |
| Zinc | mg/kg | 1 | Metals-020 | <1 | [NT] | [NT] | [NT] | [NT] | 94 | [NT] |

## Result Definitions

| | |
|---|---|
| **NT** | Not tested |
| **NA** | Test not required |
| **INS** | Insufficient sample for this test |
| **PQL** | Practical Quantitation Limit |
| **<** | Less than |
| **>** | Greater than |
| **RPD** | Relative Percent Difference |
| **LCS** | Laboratory Control Sample |
| **NS** | Not specified |
| **NEPM** | National Environmental Protection Measure |
| **NR** | Not Reported |

## Quality Control Definitions

| | |
|---|---|
| **Blank** | This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples. |
| **Duplicate** | This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable. |
| **Matrix Spike** | A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist. |
| **LCS (Laboratory Control Sample)** | This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample. |
| **Surrogate Spike** | Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples. |

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

## Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

## Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

ENVIRO

# Chain of Custody

JBS&G

| | |
|---|---|
| PROJECT NO.: 63325 | LABORATORY BATCH NO.: |
| PROJECT NAME: EDPARK_OP | SAMPLERS: MASSIMO CHAPMAN |
| DATE NEEDED BY: STANDARD | QC LEVEL: NEPM (2013) |

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ...mbelandino.....@jbsg.com.au; (3) ...mchapman.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | TRH | PFAS/PFOS | BTEX | Heavy Metals | OCPs | PCBs | Asbestos | PAHs | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QA20221017-01 1 | SOIL | 17/10/22 | | BAG + JAR + TUB + ICE | | X | X | X | X | X | X | X | X | | X | |
| ↓ 02 ↓ | ↓ | ↓ | | ↓ | | X | X | X | X | X | X | X | X | | X | |

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 300571

Date Received: 20-10-22

Time Received: 1640

Received By: PHAN

Temp: Cool/Ambient

Cooling: Ice/Icepack

Security: Intact/Broken/None

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: MASSIMO CHAPMAN DATE: 19/10/22 | CONSIGNMENT NOTE NO. | NAME: PHAN | COOLER SEAL – Yes ..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | DATE: 20.10.22 1640 | |
| | | OF: ENS.540 | COOLER TEMP 16 deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other


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EUROFINS.

# Chain of Custody

JBS&G

PROJECT NO.: 63325
PROJECT NAME: EDPARK_GME
DATE NEEDED BY: 3 DAY TAT.
LABORATORY BATCH NO.:
SAMPLERS: MASSIMO CHAPMAN
QC LEVEL: NEPM (2013)
PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) Mdelgrosso@jbsg.com.au; (3) mchapman@jbsg.com.au ; @jrosner@

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

PLEASE FILTER MW02 METALS.

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | Heavy Metals | TRH/BTEX | PAHs | PFAS (PFOS Low Level) | PH/EC/TDS | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW01 | WATER | 28/10/22 | | AMBER, VIALS, HM, PLASTIC, PFAS + ICE | | X | X | X | X | X | | | |
| MW02 | | | | | | X | X | X | X | X | | | |
| MW03 | | | | | | X | X | X | X | X | | | |
| MWF3 | | | | | | X | X | X | X | X | | | |
| QC20221028 | | | | | | X | X | X | X | X | | | |
| QA20221028 | | | | | | PLEASE FWD QA SAMPLES TO ENVIROLAB! | | | | | | | |
| TS/TB | | | | VIALS + ICE | | | X | | | | | | |
| BLANK | | | | PFAS BOTTLE + ICE. | | | | X | | | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: MASSIMO CHAPMAN DATE: 28/10/22 | CONSIGNMENT NOTE NO. | NAME: Paul D DATE: 28/10/22 6:00PM | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | OF: | COOLER TEMP 24°C ..... deg C * 936139 |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Suifuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other


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ENVIRO

# Chain of Custody

JBS&G

| | |
|---|---|
| PROJECT NO.: 63325 | LABORATORY BATCH NO.: |
| PROJECT NAME: EBPARK_GME | SAMPLERS: MASSIMO CHAPMAN. |
| DATE NEEDED BY: 3 DAY T.A.T | QC LEVEL: NEPM (2013) |

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) melandrio@jbsg.com.au; (3) mchapman@jbsg.com.au jrosner@

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | HCM/Metals | TPH/BTEX | PAHs | PFAS/PFOS (TL) | PH/EC/TDS | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QA20221028 | WATER | 28/10/22 | | AMBER, VIALS, HM, PLASTIC, PFAS + TDS | | X | X | X | X | X | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: MASSIMO DATE: 28/10/22. CHAPMAN | CONSIGNMENT NOTE NO. | NAME: Ravi DATE: 28/10/22 6:00PM | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | OF: | COOLER TEMP ..... deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

2 ESKIES


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1 of 1

EUROFINS.

# Chain of Custody

JBS&G

| | |
|---|---|
| PROJECT NO.: 63325 | LABORATORY BATCH NO.: |
| PROJECT NAME: EDPARK – GME | SAMPLERS: MASSIMO CHAPMAN. |
| DATE NEEDED BY: 3 DAY T.A.T | QC LEVEL: NEPM (2013) |

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) mchapman@jbsg.com.au; (3) mchapman@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

* PLEASE ADD TO PREVIOUS 63325 BATCH (REPORT NO. 936139) FROM 28/10/22 – 29/10/22, SAMPLE WAS LEFT OFF COC + BATCH!

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | Heavy Metals | TRH \| BTEX | PAH's | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RINSATE | WATER | 28/10/22 | | AMBER, HM, VIALS, ICE | | X | X | X | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: MASSIMO CHAPMAN DATE: 28/10/22 | CONSIGNMENT NOTE NO. | NAME: DATE: 28/10/22 6.40pm | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | OF: | COOLER TEMP 6.9°C ..... deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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936139

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 | 4/52 Industrial Drive |
| Dandenong South | Grovedale | Girraween | Mitchell | Murarrie | Mayfield East NSW 2304 |
| VIC 3175 | VIC 3216 | NSW 2145 | ACT 2911 | QLD 4172 | PO Box 60 Wickham 2293 |
| Tel: +61 3 8564 5000 | Tel: +61 3 8564 5000 | Tel: +61 2 9900 8400 | Tel: +61 2 6113 8091 | Tel: +61 7 3902 4600 | Tel: +61 2 4968 8448 |
| NATA# 1261 Site# 1254 | NATA# 1261 Site# 1254 | NATA# 1261 Site# 18217 | | NATA# 1261 Site# 20794 | NATA# 1261 Site# 25079 |

**Eurofins ARL Pty Ltd**

ABN: 91 05 0159 898

| Perth |
|---|
| 46-48 Banksia Road |
| Welshpool |
| WA 6106 |
| Tel: +61 8 6253 4444 |
| NATA# 2377 Site# 2370 |

**Eurofins Environment Testing NZ Ltd**

NZBN: 9429046024954

| Auckland | Christchurch |
|---|---|
| 35 O'Rorke Road | 43 Detroit Drive |
| Penrose, | Rolleston, |
| Auckland 1061 | Christchurch 7675 |
| Tel: +64 9 526 45 51 | Tel: 0800 856 450 |
| IANZ# 1327 | IANZ# 1290 |

# Sample Receipt Advice

| | |
|---|---|
| **Company name:** | JBS & G Australia (NSW) P/L |
| **Contact name:** | Michelle Delandro |
| **Project name:** | EDPARK _GME |
| **Project ID:** | 63325 |
| **Turnaround time:** | 3 Day |
| **Date/Time received** | Oct 28, 2022 6:00 PM |
| **Eurofins reference** | 936139 |

## 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 : 24 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

QA20221028 forwarded to Envirolab. |
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:

**Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com**

Results will be delivered electronically via email to Michelle Delandro - MDelandro@jbsg.com.au.

Global Leader - Results you can trust

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

**NATA Accredited**
**Accreditation Number 1261**
**Site Number 20794**

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:** **Michelle Delandro**

**Report** **936139-W-V2**
Project name EDPARK _GME
Project ID 63325
Received Date Oct 28, 2022

| **Client Sample ID** | | | **MW01** | **MW02** | **MW03** | **MWF3** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Water** | **Water** | **Water** | **Water** |
| **Eurofins Sample No.** | | | **S22-Oc0063030** | **S22-Oc0063031** | **S22-Oc0063032** | **S22-Oc0063033** |
| **Date Sampled** | | | **Oct 28, 2022** | **Oct 28, 2022** | **Oct 28, 2022** | **Oct 28, 2022** |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 0.02 | mg/L | 0.03 | < 0.02 | < 0.02 | < 0.02 |
| TRH C10-C14 | 0.05 | mg/L | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| TRH C15-C28 | 0.1 | mg/L | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TRH C29-C36 | 0.1 | mg/L | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TRH C10-C36 (Total) | 0.1 | mg/L | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Naphthalene[N02] | 0.01 | mg/L | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| TRH C6-C10 | 0.02 | mg/L | 0.04 | < 0.02 | 0.02 | < 0.02 |
| TRH C6-C10 less BTEX (F1)[N04] | 0.02 | mg/L | 0.04 | < 0.02 | 0.02 | < 0.02 |
| TRH >C10-C16 | 0.05 | mg/L | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 0.05 | mg/L | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| TRH >C16-C34 | 0.1 | mg/L | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TRH >C34-C40 | 0.1 | mg/L | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TRH >C10-C40 (total)* | 0.1 | mg/L | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| **BTEX** | | | | | | |
| Benzene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Toluene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Ethylbenzene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| m&p-Xylenes | 0.002 | mg/L | < 0.002 | < 0.002 | < 0.002 | < 0.002 |
| o-Xylene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Xylenes - Total* | 0.003 | mg/L | < 0.003 | < 0.003 | < 0.003 | < 0.003 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 103 | 97 | 94 | 98 |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Acenaphthene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Acenaphthylene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Anthracene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Benz(a)anthracene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Benzo(a)pyrene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Benzo(b&j)fluoranthene[N07] | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Benzo(g.h.i)perylene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Benzo(k)fluoranthene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Chrysene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Dibenz(a.h)anthracene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Fluoranthene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Fluorene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Indeno(1.2.3-cd)pyrene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |

| Client Sample ID | | | MW01 | MW02 | MW03 | MWF3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water | Water |
| Eurofins Sample No. | | | S22-Oc0063030 | S22-Oc0063031 | S22-Oc0063032 | S22-Oc0063033 |
| Date Sampled | | | Oct 28, 2022 | Oct 28, 2022 | Oct 28, 2022 | Oct 28, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Naphthalene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Phenanthrene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Pyrene | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Total PAH* | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| 2-Fluorobiphenyl (surr.) | 1 | % | [Q09]INT | [Q09]INT | 66 | [Q09]INT |
| p-Terphenyl-d14 (surr.) | 1 | % | 130 | 141 | [Q09]INT | 136 |
| | | | | | | |
| Conductivity (at 25 °C) | 10 | uS/cm | 6500 | 7100 | 11000 | 4200 |
| pH (at 25 °C) | 0.1 | pH Units | 7.0 | 7.2 | 7.3 | 7.3 |
| Total Dissolved Solids Dried at 180 °C ± 2 °C | 10 | mg/L | 4000 | 4600 | 6600 | 2800 |
| **Heavy Metals** | | | | | | |
| Arsenic (filtered) | 0.001 | mg/L | < 0.001 | 0.002 | < 0.001 | < 0.001 |
| Cadmium (filtered) | 0.0002 | mg/L | < 0.0002 | 0.0002 | < 0.0002 | < 0.0002 |
| Chromium (filtered) | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Copper (filtered) | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | 0.002 |
| Lead (filtered) | 0.001 | mg/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Mercury (filtered) | 0.0001 | mg/L | < 0.0001 | < 0.0001 | < 0.0001 | < 0.0001 |
| Nickel (filtered) | 0.001 | mg/L | 0.001 | 0.007 | 0.002 | < 0.001 |
| Zinc (filtered) | 0.005 | mg/L | 0.007 | < 0.005 | 0.009 | < 0.005 |
| **PFASs Summations** | | | | | | |
| Sum (PFHxS + PFOS)* | 0.001 | ug/L | 0.01 | 0.002 | 0.002 | 0.013 |
| Sum of enHealth PFAS (PFHxS + PFOS + PFOA)* | 0.001 | ug/L | 0.01 | 0.002 | 0.002 | 0.013 |
| Sum of PFASs (n=30)* | 0.005 | ug/L | 0.04 | < 0.005 | < 0.005 | 0.045 |
| Sum of US EPA PFAS (PFOS + PFOA)* | 0.001 | ug/L | 0.003 | 0.002 | 0.002 | 0.002 |
| Sum of WA DWER PFAS (n=10)* | 0.005 | ug/L | 0.027 | < 0.005 | < 0.005 | 0.031 |
| **Perfluoroalkyl sulfonamido substances- Trace** | | | | | | |
| Perfluorooctane sulfonamide (FOSA)[N11] | 0.005 | ug/L | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11] | 0.005 | ug/L | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11] | 0.005 | ug/L | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11] | 0.005 | ug/L | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11] | 0.005 | ug/L | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11] | 0.005 | ug/L | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11] | 0.005 | ug/L | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| 13C8-FOSA (surr.) | 1 | % | 49 | 46 | 52 | 64 |
| D3-N-MeFOSA (surr.) | 1 | % | 86 | 85 | 94 | 105 |
| D5-N-EtFOSA (surr.) | 1 | % | 82 | 70 | 97 | 104 |
| D7-N-MeFOSE (surr.) | 1 | % | 94 | 90 | 101 | 110 |
| D9-N-EtFOSE (surr.) | 1 | % | 64 | 59 | 78 | 76 |
| D5-N-EtFOSAA (surr.) | 1 | % | 68 | 63 | 59 | 72 |
| D3-N-MeFOSAA (surr.) | 1 | % | 59 | 62 | 60 | 68 |
| **Perfluoroalkyl carboxylic acids (PFCAs) - Trace** | | | | | | |
| Perfluorobutanoic acid (PFBA)[N11] | 0.005 | ug/L | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Perfluoropentanoic acid (PFPeA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Perfluorohexanoic acid (PFHxA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Perfluoroheptanoic acid (PFHpA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |

| Client Sample ID | | | MW01 | MW02 | MW03 | MWF3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water | Water |
| Eurofins Sample No. | | | S22-Oc0063030 | S22-Oc0063031 | S22-Oc0063032 | S22-Oc0063033 |
| Date Sampled | | | Oct 28, 2022 | Oct 28, 2022 | Oct 28, 2022 | Oct 28, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs) - Trace** | | | | | | |
| Perfluorooctanoic acid (PFOA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Perfluorononanoic acid (PFNA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Perfluorodecanoic acid (PFDA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Perfluorotridecanoic acid (PFTrDA)[N15] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Perfluoroundecanoic acid (PFUnDA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Perfluorododecanoic acid (PFDoDA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Perfluorotetradecanoic acid (PFTeDA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| 13C4-PFBA (surr.) | 1 | % | [Q09]INT | 11 | 41 | [Q09]INT |
| 13C5-PFPeA (surr.) | 1 | % | 13 | 33 | 74 | 12 |
| 13C5-PFHxA (surr.) | 1 | % | 54 | 75 | 66 | 51 |
| 13C4-PFHpA (surr.) | 1 | % | 82 | 81 | 65 | 103 |
| 13C8-PFOA (surr.) | 1 | % | 69 | 70 | 67 | 95 |
| 13C5-PFNA (surr.) | 1 | % | 69 | 66 | 65 | 90 |
| 13C6-PFDA (surr.) | 1 | % | 71 | 52 | 52 | 70 |
| 13C2-PFUnDA (surr.) | 1 | % | 76 | 64 | 64 | 85 |
| 13C2-PFDoDA (surr.) | 1 | % | 82 | 57 | 62 | 79 |
| 13C2-PFTeDA (surr.) | 1 | % | 66 | 56 | 56 | 80 |
| **Perfluoroalkyl sulfonic acids (PFSAs)- Trace** | | | | | | |
| Perfluorobutanesulfonic acid (PFBS)[N11] | 0.001 | ug/L | 0.017 | < 0.001 | < 0.001 | 0.018 |
| Perfluorononanesulfonic acid (PFNS)[N15] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Perfluoropropanesulfonic acid (PFPrS)[N15] | 0.001 | ug/L | 0.007 | < 0.001 | < 0.001 | 0.007 |
| Perfluoropentanesulfonic acid (PFPeS)[N15] | 0.001 | ug/L | 0.006 | < 0.001 | < 0.001 | 0.007 |
| Perfluorohexanesulfonic acid (PFHxS)[N11] | 0.001 | ug/L | 0.007 | < 0.001 | < 0.001 | 0.011 |
| Perfluoroheptanesulfonic acid (PFHpS)[N15] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Perfluorooctanesulfonic acid (PFOS)[N11] | 0.001 | ug/L | 0.003 | 0.002 | 0.002 | 0.002 |
| Perfluorodecanesulfonic acid (PFDS)[N15] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| 13C3-PFBS (surr.) | 1 | % | 83 | 93 | 97 | 84 |
| 18O2-PFHxS (surr.) | 1 | % | 110 | 107 | 112 | 119 |
| 13C8-PFOS (surr.) | 1 | % | 99 | 85 | 83 | 105 |
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace** | | | | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11] | 0.005 | ug/L | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11] | 0.001 | ug/L | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| 13C2-4:2 FTSA (surr.) | 1 | % | 72 | 88 | 73 | 73 |
| 13C2-6:2 FTSA (surr.) | 1 | % | 119 | 136 | 105 | 165 |
| 13C2-8:2 FTSA (surr.) | 1 | % | 99 | 101 | 94 | 88 |
| 13C2-10:2 FTSA (surr.) | 1 | % | 90 | 72 | 63 | 61 |

| Client Sample ID | | | QC20221028 | TS | TB | BLANK |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water | Water |
| Eurofins Sample No. | | | S22-Oc0063034 | S22-Oc0063035 | S22-Oc0063036 | S22-Oc0063037 |
| Date Sampled | | | Oct 28, 2022 | Oct 28, 2022 | Oct 28, 2022 | Oct 28, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 0.02 | mg/L | < 0.02 | - | < 0.02 | - |
| TRH C10-C14 | 0.05 | mg/L | < 0.05 | - | - | - |
| TRH C15-C28 | 0.1 | mg/L | < 0.1 | - | - | - |
| TRH C29-C36 | 0.1 | mg/L | < 0.1 | - | - | - |
| TRH C10-C36 (Total) | 0.1 | mg/L | < 0.1 | - | - | - |
| Naphthalene[N02] | 0.01 | mg/L | < 0.01 | - | < 0.01 | - |
| TRH C6-C10 | 0.02 | mg/L | < 0.02 | - | < 0.02 | - |
| TRH C6-C10 less BTEX (F1)[N04] | 0.02 | mg/L | < 0.02 | - | < 0.02 | - |
| TRH >C10-C16 | 0.05 | mg/L | < 0.05 | - | - | - |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 0.05 | mg/L | < 0.05 | - | - | - |
| TRH >C16-C34 | 0.1 | mg/L | < 0.1 | - | - | - |
| TRH >C34-C40 | 0.1 | mg/L | < 0.1 | - | - | - |
| TRH >C10-C40 (total)* | 0.1 | mg/L | < 0.1 | - | - | - |
| **BTEX** | | | | | | |
| Benzene | 0.001 | mg/L | < 0.001 | - | < 0.001 | - |
| Toluene | 0.001 | mg/L | < 0.001 | - | < 0.001 | - |
| Ethylbenzene | 0.001 | mg/L | < 0.001 | - | < 0.001 | - |
| m&p-Xylenes | 0.002 | mg/L | < 0.002 | - | < 0.002 | - |
| o-Xylene | 0.001 | mg/L | < 0.001 | - | < 0.001 | - |
| Xylenes - Total* | 0.003 | mg/L | < 0.003 | - | < 0.003 | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | 98 | - | 97 | - |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Acenaphthene | 0.001 | mg/L | < 0.001 | - | - | - |
| Acenaphthylene | 0.001 | mg/L | < 0.001 | - | - | - |
| Anthracene | 0.001 | mg/L | < 0.001 | - | - | - |
| Benz(a)anthracene | 0.001 | mg/L | < 0.001 | - | - | - |
| Benzo(a)pyrene | 0.001 | mg/L | < 0.001 | - | - | - |
| Benzo(b&j)fluoranthene[N07] | 0.001 | mg/L | < 0.001 | - | - | - |
| Benzo(g.h.i)perylene | 0.001 | mg/L | < 0.001 | - | - | - |
| Benzo(k)fluoranthene | 0.001 | mg/L | < 0.001 | - | - | - |
| Chrysene | 0.001 | mg/L | < 0.001 | - | - | - |
| Dibenz(a.h)anthracene | 0.001 | mg/L | < 0.001 | - | - | - |
| Fluoranthene | 0.001 | mg/L | < 0.001 | - | - | - |
| Fluorene | 0.001 | mg/L | < 0.001 | - | - | - |
| Indeno(1.2.3-cd)pyrene | 0.001 | mg/L | < 0.001 | - | - | - |
| Naphthalene | 0.001 | mg/L | < 0.001 | - | - | - |
| Phenanthrene | 0.001 | mg/L | < 0.001 | - | - | - |
| Pyrene | 0.001 | mg/L | < 0.001 | - | - | - |
| Total PAH* | 0.001 | mg/L | < 0.001 | - | - | - |
| 2-Fluorobiphenyl (surr.) | 1 | % | [Q09]INT | - | - | - |
| p-Terphenyl-d14 (surr.) | 1 | % | 128 | - | - | - |
| | | | | | | |
| Conductivity (at 25 °C) | 10 | uS/cm | 6200 | - | - | - |
| pH (at 25 °C) | 0.1 | pH Units | 7.0 | - | - | - |
| Total Dissolved Solids Dried at 180 °C ± 2 °C | 10 | mg/L | 4300 | - | - | - |
| TRH C6-C10 | 1 | % | - | 100 | - | - |

| Client Sample ID | | | QC20221028 | TS | TB | BLANK |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water | Water |
| Eurofins Sample No. | | | S22-Oc0063034 | S22-Oc0063035 | S22-Oc0063036 | S22-Oc0063037 |
| Date Sampled | | | Oct 28, 2022 | Oct 28, 2022 | Oct 28, 2022 | Oct 28, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic (filtered) | 0.001 | mg/L | 0.001 | - | - | - |
| Cadmium (filtered) | 0.0002 | mg/L | < 0.0002 | - | - | - |
| Chromium (filtered) | 0.001 | mg/L | < 0.001 | - | - | - |
| Copper (filtered) | 0.001 | mg/L | < 0.001 | - | - | - |
| Lead (filtered) | 0.001 | mg/L | < 0.001 | - | - | - |
| Mercury (filtered) | 0.0001 | mg/L | < 0.0001 | - | - | - |
| Nickel (filtered) | 0.001 | mg/L | 0.001 | - | - | - |
| Zinc (filtered) | 0.005 | mg/L | 0.007 | - | - | - |
| **PFASs Summations** | | | | | | |
| Sum (PFHxS + PFOS)* | 0.001 | ug/L | 0.009 | - | - | < 0.001 |
| Sum of enHealth PFAS (PFHxS + PFOS + PFOA)* | 0.001 | ug/L | 0.009 | - | - | < 0.001 |
| Sum of PFASs (n=30)* | 0.005 | ug/L | 0.037 | - | - | < 0.005 |
| Sum of US EPA PFAS (PFOS + PFOA)* | 0.001 | ug/L | 0.002 | - | - | < 0.001 |
| Sum of WA DWER PFAS (n=10)* | 0.005 | ug/L | 0.025 | - | - | < 0.005 |
| **Perfluoroalkyl sulfonamido substances- Trace** | | | | | | |
| Perfluorooctane sulfonamide (FOSA)[N11] | 0.005 | ug/L | < 0.005 | - | - | < 0.005 |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11] | 0.005 | ug/L | < 0.005 | - | - | < 0.005 |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11] | 0.005 | ug/L | < 0.005 | - | - | < 0.005 |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11] | 0.005 | ug/L | < 0.005 | - | - | < 0.005 |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11] | 0.005 | ug/L | < 0.005 | - | - | < 0.005 |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11] | 0.005 | ug/L | < 0.005 | - | - | < 0.005 |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11] | 0.005 | ug/L | < 0.005 | - | - | < 0.005 |
| 13C8-FOSA (surr.) | 1 | % | 51 | - | - | 69 |
| D3-N-MeFOSA (surr.) | 1 | % | 87 | - | - | 126 |
| D5-N-EtFOSA (surr.) | 1 | % | 81 | - | - | 116 |
| D7-N-MeFOSE (surr.) | 1 | % | 100 | - | - | 138 |
| D9-N-EtFOSE (surr.) | 1 | % | 71 | - | - | 91 |
| D5-N-EtFOSAA (surr.) | 1 | % | 63 | - | - | 90 |
| D3-N-MeFOSAA (surr.) | 1 | % | 56 | - | - | 85 |
| **Perfluoroalkyl carboxylic acids (PFCAs) - Trace** | | | | | | |
| Perfluorobutanoic acid (PFBA)[N11] | 0.005 | ug/L | < 0.005 | - | - | < 0.005 |
| Perfluoropentanoic acid (PFPeA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluorohexanoic acid (PFHxA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluoroheptanoic acid (PFHpA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluorooctanoic acid (PFOA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluorononanoic acid (PFNA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluorodecanoic acid (PFDA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluorotridecanoic acid (PFTrDA)[N15] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluoroundecanoic acid (PFUnDA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluorododecanoic acid (PFDoDA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluorotetradecanoic acid (PFTeDA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| 13C4-PFBA (surr.) | 1 | % | [Q09]INT | - | - | 100 |
| 13C5-PFPeA (surr.) | 1 | % | 14 | - | - | 128 |
| 13C5-PFHxA (surr.) | 1 | % | 60 | - | - | 107 |
| 13C4-PFHpA (surr.) | 1 | % | 93 | - | - | 105 |

| Client Sample ID | | | QC20221028 | TS | TB | BLANK |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water | Water |
| Eurofins Sample No. | | | S22-Oc0063034 | S22-Oc0063035 | S22-Oc0063036 | S22-Oc0063037 |
| Date Sampled | | | Oct 28, 2022 | Oct 28, 2022 | Oct 28, 2022 | Oct 28, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs) - Trace** | | | | | | |
| 13C8-PFOA (surr.) | 1 | % | 79 | - | - | 89 |
| 13C5-PFNA (surr.) | 1 | % | 70 | - | - | 83 |
| 13C6-PFDA (surr.) | 1 | % | 63 | - | - | 82 |
| 13C2-PFUnDA (surr.) | 1 | % | 68 | - | - | 99 |
| 13C2-PFDoDA (surr.) | 1 | % | 63 | - | - | 96 |
| 13C2-PFTeDA (surr.) | 1 | % | 56 | - | - | 98 |
| **Perfluoroalkyl sulfonic acids (PFSAs)- Trace** | | | | | | |
| Perfluorobutanesulfonic acid (PFBS)[N11] | 0.001 | ug/L | 0.016 | - | - | < 0.001 |
| Perfluorononanesulfonic acid (PFNS)[N15] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluoropropanesulfonic acid (PFPrS)[N15] | 0.001 | ug/L | 0.007 | - | - | < 0.001 |
| Perfluoropentanesulfonic acid (PFPeS)[N15] | 0.001 | ug/L | 0.005 | - | - | < 0.001 |
| Perfluorohexanesulfonic acid (PFHxS)[N11] | 0.001 | ug/L | 0.007 | - | - | < 0.001 |
| Perfluoroheptanesulfonic acid (PFHpS)[N15] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| Perfluorooctanesulfonic acid (PFOS)[N11] | 0.001 | ug/L | 0.002 | - | - | < 0.001 |
| Perfluorodecanesulfonic acid (PFDS)[N15] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| 13C3-PFBS (surr.) | 1 | % | 88 | - | - | 110 |
| 18O2-PFHxS (surr.) | 1 | % | 118 | - | - | 123 |
| 13C8-PFOS (surr.) | 1 | % | 91 | - | - | 95 |
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace** | | | | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11] | 0.005 | ug/L | < 0.005 | - | - | < 0.005 |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11] | 0.001 | ug/L | < 0.001 | - | - | < 0.001 |
| 13C2-4:2 FTSA (surr.) | 1 | % | 78 | - | - | 150 |
| 13C2-6:2 FTSA (surr.) | 1 | % | 118 | - | - | 164 |
| 13C2-8:2 FTSA (surr.) | 1 | % | 74 | - | - | 104 |
| 13C2-10:2 FTSA (surr.) | 1 | % | 54 | - | - | 85 |
| **Total Recoverable Hydrocarbons** | | | | | | |
| Naphthalene | 1 | % | - | 85 | - | - |
| TRH C6-C9 | 1 | % | - | 99 | - | - |
| **BTEX** | | | | | | |
| Benzene | 1 | % | - | 97 | - | - |
| Ethylbenzene | 1 | % | - | 92 | - | - |
| m&p-Xylenes | 1 | % | - | 100 | - | - |
| o-Xylene | 1 | % | - | 100 | - | - |
| Toluene | 1 | % | - | 97 | - | - |
| Xylenes - Total | 1 | % | - | 100 | - | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | - | 137 | - | - |

| Client Sample ID | | | RINSATE |
|---|---|---|---|
| Sample Matrix | | | Water |
| Eurofins Sample No. | | | S22-No0000561 |
| Date Sampled | | | Oct 28, 2022 |
| Test/Reference | LOR | Unit | |
| **Total Recoverable Hydrocarbons** | | | |
| TRH C6-C9 | 0.02 | mg/L | < 0.02 |
| TRH C10-C14 | 0.05 | mg/L | < 0.05 |
| TRH C15-C28 | 0.1 | mg/L | < 0.1 |
| TRH C29-C36 | 0.1 | mg/L | < 0.1 |
| TRH C10-C36 (Total) | 0.1 | mg/L | < 0.1 |
| Naphthalene[N02] | 0.01 | mg/L | < 0.01 |
| TRH C6-C10 | 0.02 | mg/L | < 0.02 |
| TRH C6-C10 less BTEX (F1)[N04] | 0.02 | mg/L | < 0.02 |
| TRH >C10-C16 | 0.05 | mg/L | < 0.05 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 0.05 | mg/L | < 0.05 |
| TRH >C16-C34 | 0.1 | mg/L | < 0.1 |
| TRH >C34-C40 | 0.1 | mg/L | < 0.1 |
| TRH >C10-C40 (total)* | 0.1 | mg/L | < 0.1 |
| **BTEX** | | | |
| Benzene | 0.001 | mg/L | < 0.001 |
| Toluene | 0.001 | mg/L | < 0.001 |
| Ethylbenzene | 0.001 | mg/L | < 0.001 |
| m&p-Xylenes | 0.002 | mg/L | < 0.002 |
| o-Xylene | 0.001 | mg/L | < 0.001 |
| Xylenes - Total* | 0.003 | mg/L | < 0.003 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 101 |
| **Polycyclic Aromatic Hydrocarbons** | | | |
| Acenaphthene | 0.001 | mg/L | < 0.001 |
| Acenaphthylene | 0.001 | mg/L | < 0.001 |
| Anthracene | 0.001 | mg/L | < 0.001 |
| Benz(a)anthracene | 0.001 | mg/L | < 0.001 |
| Benzo(a)pyrene | 0.001 | mg/L | < 0.001 |
| Benzo(b&j)fluoranthene[N07] | 0.001 | mg/L | < 0.001 |
| Benzo(g.h.i)perylene | 0.001 | mg/L | < 0.001 |
| Benzo(k)fluoranthene | 0.001 | mg/L | < 0.001 |
| Chrysene | 0.001 | mg/L | < 0.001 |
| Dibenz(a.h)anthracene | 0.001 | mg/L | < 0.001 |
| Fluoranthene | 0.001 | mg/L | < 0.001 |
| Fluorene | 0.001 | mg/L | < 0.001 |
| Indeno(1.2.3-cd)pyrene | 0.001 | mg/L | < 0.001 |
| Naphthalene | 0.001 | mg/L | < 0.001 |
| Phenanthrene | 0.001 | mg/L | < 0.001 |
| Pyrene | 0.001 | mg/L | < 0.001 |
| Total PAH* | 0.001 | mg/L | < 0.001 |
| 2-Fluorobiphenyl (surr.) | 1 | % | [Q09]INT |
| p-Terphenyl-d14 (surr.) | 1 | % | 134 |
| **Heavy Metals** | | | |
| Arsenic | 0.001 | mg/L | < 0.001 |
| Cadmium | 0.0002 | mg/L | < 0.0002 |
| Chromium | 0.001 | mg/L | < 0.001 |
| Copper | 0.001 | mg/L | < 0.001 |
| Lead | 0.001 | mg/L | < 0.001 |
| Mercury | 0.0001 | mg/L | < 0.0001 |
| Nickel | 0.001 | mg/L | < 0.001 |
| Zinc | 0.005 | mg/L | < 0.005 |

## 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 |
|---|---|---|---|
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Sydney | Nov 01, 2022 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 01, 2022 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons | Sydney | Oct 28, 2022 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Sydney | Nov 01, 2022 | 14 Days |
| - Method: LTM-ORG-2010 BTEX and Volatile TRH | | | |
| Eurofins Suite B4 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 01, 2022 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Polycyclic Aromatic Hydrocarbons | Sydney | Nov 01, 2022 | 7 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water | | | |
| Conductivity (at 25 °C) | Sydney | Nov 01, 2022 | 28 Days |
| - Method: LTM-INO-4030 Conductivity | | | |
| pH (at 25 °C) | Sydney | Nov 01, 2022 | 0 Hour |
| - Method: LTM-GEN-7090 pH in water by ISE | | | |
| Metals M8 | Sydney | Nov 01, 2022 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| Total Dissolved Solids Dried at 180 °C ± 2 °C | Sydney | Nov 01, 2022 | 7 Days |
| - Method: LTM-INO-4170 Total Dissolved Solids in Water | | | |
| Metals M8 filtered | Sydney | Nov 01, 2022 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| Per- and Polyfluoroalkyl Substances (PFASs) - Trace | | | |
| Perfluoroalkyl sulfonamido substances- Trace | Brisbane | Nov 01, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level | | | |
| Perfluoroalkyl carboxylic acids (PFCAs) - Trace | Brisbane | Nov 01, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level | | | |
| Perfluoroalkyl sulfonic acids (PFSAs)- Trace | Brisbane | Nov 01, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level | | | |
| n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace | Brisbane | Nov 01, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) - low level | | | |

eurofins

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**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
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**Project Name:** EDPARK _GME
**Project ID:** 63325

**Order No.:**
**Report #:** 936139
**Phone:** 02 8245 0300
**Fax:**

**Received:** Oct 28, 2022 6:00 PM
**Due:** Nov 2, 2022
**Priority:** 3 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Conductivity (at 25 °C) | pH (at 25 °C) | Metals M8 | Eurofins Suite B7 (filtered metals) | Eurofins Suite B4 | BTEXN and Volatile TRH | BTEXN and Volatile TRH | Per- and Polyfluoroalkyl Substances (PFASs) - Trace | Total Dissolved Solids Dried at 180 °C ± 2 °C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | X | X | X | X | | | X |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | | X | |
| **External Laboratory** | | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | | |
| 1 | RINSATE | Oct 28, 2022 | | Water | S22-No0000561 | | | X | | X | | | | |
| 2 | MW01 | Oct 28, 2022 | | Water | S22-Oc0063030 | X | X | | X | | | | X | X |
| 3 | MW02 | Oct 28, 2022 | | Water | S22-Oc0063031 | X | X | | X | | | | X | X |
| 4 | MW03 | Oct 28, 2022 | | Water | S22-Oc0063032 | X | X | | X | | | | X | X |
| 5 | MWF3 | Oct 28, 2022 | | Water | S22-Oc0063033 | X | X | | X | | | | X | X |
| 6 | QC20221028 | Oct 28, 2022 | | Water | S22-Oc0063034 | X | X | | X | | | | X | X |
| 7 | TS | Oct 28, 2022 | | Water | S22-Oc0063035 | | | | | | | X | | |
| 8 | TB | Oct 28, 2022 | | Water | S22-Oc0063036 | | | | | | X | | | |
| 9 | BLANK | Oct 28, 2022 | | Water | S22-Oc0063037 | | | | | | | | X | |
| **Test Counts** | | | | | | 5 | 5 | 1 | 5 | 1 | 1 | 1 | 6 | 5 |

## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

### Units

**mg/kg:** milligrams per kilogram
**mg/L:** milligrams per litre
**µg/L:** micrograms per litre
**ppm:** parts per million
**ppb:** parts per billion
**%:** Percentage
**org/100 mL:** Organisms per 100 millilitres
**NTU:** Nephelometric Turbidity Units
**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres

### Terms

| | |
|---|---|
| **APHA** | American Public Health Association |
| **COC** | Chain of Custody |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **CRM** | Certified Reference Material (ISO17034) - reported as percent recovery. |
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **LOR** | Limit of Reporting. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **SRA** | Sample Receipt Advice |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **TBTO** | Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits. |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **TEQ** | Toxic Equivalency Quotient or Total Equivalence |
| **QSM** | US Department of Defense Quality Systems Manual Version 5.4 |
| **US EPA** | United States Environmental Protection Agency |
| **WA DWER** | Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA |

### QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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### 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** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C10-C14 | mg/L | < 0.05 | | | 0.05 | Pass | |
| TRH C15-C28 | mg/L | < 0.1 | | | 0.1 | Pass | |
| TRH C29-C36 | mg/L | < 0.1 | | | 0.1 | Pass | |
| TRH >C10-C16 | mg/L | < 0.05 | | | 0.05 | Pass | |
| TRH >C16-C34 | mg/L | < 0.1 | | | 0.1 | Pass | |
| TRH >C34-C40 | mg/L | < 0.1 | | | 0.1 | Pass | |
| **Method Blank** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Acenaphthylene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Anthracene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Benz(a)anthracene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Benzo(a)pyrene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Benzo(b&j)fluoranthene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Benzo(g.h.i)perylene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Benzo(k)fluoranthene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Chrysene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Dibenz(a.h)anthracene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Fluoranthene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Fluorene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Indeno(1.2.3-cd)pyrene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Naphthalene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Phenanthrene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Pyrene | mg/L | < 0.001 | | | 0.001 | Pass | |
| **Method Blank** | | | | | | | |
| Conductivity (at 25 °C) | uS/cm | < 10 | | | 10 | Pass | |
| Total Dissolved Solids Dried at 180 °C ± 2 °C | mg/L | < 10 | | | 10 | Pass | |
| **Method Blank** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | mg/L | < 0.001 | | | 0.001 | Pass | |
| Arsenic (filtered) | mg/L | < 0.001 | | | 0.001 | Pass | |
| Cadmium | mg/L | < 0.0002 | | | 0.0002 | Pass | |
| Cadmium (filtered) | mg/L | < 0.0002 | | | 0.0002 | Pass | |
| Chromium | mg/L | < 0.001 | | | 0.001 | Pass | |
| Chromium (filtered) | mg/L | < 0.001 | | | 0.001 | Pass | |
| Copper | mg/L | < 0.001 | | | 0.001 | Pass | |
| Copper (filtered) | mg/L | < 0.001 | | | 0.001 | Pass | |
| Lead | mg/L | < 0.001 | | | 0.001 | Pass | |
| Lead (filtered) | mg/L | < 0.001 | | | 0.001 | Pass | |
| Mercury | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Mercury (filtered) | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Nickel | mg/L | < 0.001 | | | 0.001 | Pass | |
| Nickel (filtered) | mg/L | < 0.001 | | | 0.001 | Pass | |
| Zinc | mg/L | < 0.005 | | | 0.005 | Pass | |
| Zinc (filtered) | mg/L | < 0.005 | | | 0.005 | Pass | |
| **Method Blank** | | | | | | | |
| **Perfluoroalkyl sulfonamido substances- Trace** | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | ug/L | < 0.005 | | | 0.005 | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | ug/L | < 0.005 | | | 0.005 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | ug/L | < 0.005 | | | 0.005 | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | ug/L | < 0.005 | | | 0.005 | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | ug/L | < 0.005 | | | 0.005 | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | ug/L | < 0.005 | | | 0.005 | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | ug/L | < 0.005 | | | 0.005 | Pass | |
| **Method Blank** | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs) - Trace** | | | | | | | |
| Perfluorobutanoic acid (PFBA) | ug/L | < 0.005 | | | 0.005 | Pass | |
| Perfluoropentanoic acid (PFPeA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorohexanoic acid (PFHxA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluoroheptanoic acid (PFHpA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorooctanoic acid (PFOA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorononanoic acid (PFNA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorodecanoic acid (PFDA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorododecanoic acid (PFDoDA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| **Method Blank** | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)- Trace** | | | | | | | |
| Perfluorobutanesulfonic acid (PFBS) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorononanesulfonic acid (PFNS) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | ug/L | < 0.001 | | | 0.001 | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | ug/L | < 0.001 | | | 0.001 | Pass | |
| **Method Blank** | | | | | | | |
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace** | | | | | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | ug/L | < 0.005 | | | 0.005 | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | ug/L | < 0.001 | | | 0.001 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C10-C14 | % | 113 | | | 70-130 | Pass | |
| TRH >C10-C16 | % | 108 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | % | 85 | | | 70-130 | Pass | |
| Acenaphthylene | % | 86 | | | 70-130 | Pass | |
| Anthracene | % | 95 | | | 70-130 | Pass | |
| Benz(a)anthracene | % | 72 | | | 70-130 | Pass | |
| Benzo(a)pyrene | % | 80 | | | 70-130 | Pass | |
| Benzo(b&j)fluoranthene | % | 77 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | % | 84 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | % | 94 | | | 70-130 | Pass | |
| Chrysene | % | 75 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | % | 72 | | | 70-130 | Pass | |
| Fluoranthene | % | 87 | | | 70-130 | Pass | |
| Fluorene | % | 88 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | % | 74 | | | 70-130 | Pass | |
| Naphthalene | % | 79 | | | 70-130 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Phenanthrene | % | 98 | | | 70-130 | Pass | |
| Pyrene | % | 90 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| Conductivity (at 25 °C) | % | 81 | | | 70-130 | Pass | |
| Total Dissolved Solids Dried at 180 °C ± 2 °C | % | 101 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | % | 91 | | | 80-120 | Pass | |
| Arsenic (filtered) | % | 100 | | | 80-120 | Pass | |
| Cadmium | % | 95 | | | 80-120 | Pass | |
| Cadmium (filtered) | % | 107 | | | 80-120 | Pass | |
| Chromium | % | 91 | | | 80-120 | Pass | |
| Chromium (filtered) | % | 99 | | | 80-120 | Pass | |
| Copper | % | 101 | | | 80-120 | Pass | |
| Copper (filtered) | % | 100 | | | 80-120 | Pass | |
| Lead | % | 99 | | | 80-120 | Pass | |
| Lead (filtered) | % | 100 | | | 80-120 | Pass | |
| Mercury | % | 101 | | | 80-120 | Pass | |
| Mercury (filtered) | % | 105 | | | 80-120 | Pass | |
| Nickel | % | 100 | | | 80-120 | Pass | |
| Nickel (filtered) | % | 101 | | | 80-120 | Pass | |
| Zinc | % | 100 | | | 80-120 | Pass | |
| Zinc (filtered) | % | 101 | | | 80-120 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl sulfonamido substances- Trace** | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | % | 80 | | | 50-150 | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | % | 91 | | | 50-150 | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | % | 93 | | | 50-150 | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | % | 119 | | | 50-150 | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | % | 96 | | | 50-150 | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | % | 87 | | | 50-150 | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | % | 86 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs) - Trace** | | | | | | | |
| Perfluorobutanoic acid (PFBA) | % | 90 | | | 50-150 | Pass | |
| Perfluoropentanoic acid (PFPeA) | % | 87 | | | 50-150 | Pass | |
| Perfluorohexanoic acid (PFHxA) | % | 87 | | | 50-150 | Pass | |
| Perfluoroheptanoic acid (PFHpA) | % | 84 | | | 50-150 | Pass | |
| Perfluorooctanoic acid (PFOA) | % | 83 | | | 50-150 | Pass | |
| Perfluorononanoic acid (PFNA) | % | 95 | | | 50-150 | Pass | |
| Perfluorodecanoic acid (PFDA) | % | 77 | | | 50-150 | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | % | 96 | | | 50-150 | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | % | 94 | | | 50-150 | Pass | |
| Perfluorododecanoic acid (PFDoDA) | % | 86 | | | 50-150 | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | % | 98 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)- Trace** | | | | | | | |
| Perfluorobutanesulfonic acid (PFBS) | % | 90 | | | 50-150 | Pass | |
| Perfluorononanesulfonic acid (PFNS) | % | 88 | | | 50-150 | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | % | 106 | | | 50-150 | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | % | 83 | | | 50-150 | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | % | 76 | | | 50-150 | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | % | 84 | | | 50-150 | Pass | |
| Perfluorooctanesulfonic acid (PFOS) | % | 93 | | | 50-150 | Pass | |

| Test | | | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorodecanesulfonic acid (PFDS) | | | % | 67 | | | 50-150 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace** | | | | | | | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | | | % | 89 | | | 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) | | | % | 79 | | | 50-150 | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | | | % | 110 | | | 50-150 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | | | | | |
| TRH C6-C9 | S22-Oc0046571 | NCP | % | 95 | | | 70-130 | Pass | |
| TRH C10-C14 | S22-Oc0063030 | CP | % | 89 | | | 70-130 | Pass | |
| Naphthalene | S22-Oc0046571 | NCP | % | 111 | | | 70-130 | Pass | |
| TRH C6-C10 | S22-Oc0046571 | NCP | % | 95 | | | 70-130 | Pass | |
| TRH >C10-C16 | S22-Oc0063030 | CP | % | 86 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |
| Benzene | S22-Oc0046571 | NCP | % | 104 | | | 70-130 | Pass | |
| Toluene | S22-Oc0046571 | NCP | % | 98 | | | 70-130 | Pass | |
| Ethylbenzene | S22-Oc0046571 | NCP | % | 99 | | | 70-130 | Pass | |
| m&p-Xylenes | S22-Oc0046571 | NCP | % | 103 | | | 70-130 | Pass | |
| o-Xylene | S22-Oc0046571 | NCP | % | 103 | | | 70-130 | Pass | |
| Xylenes - Total* | S22-Oc0046571 | NCP | % | 103 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic (filtered) | S22-Oc0061977 | NCP | % | 111 | | | 75-125 | Pass | |
| Cadmium (filtered) | S22-Oc0061977 | NCP | % | 99 | | | 75-125 | Pass | |
| Chromium (filtered) | S22-Oc0061977 | NCP | % | 97 | | | 75-125 | Pass | |
| Copper (filtered) | S22-Oc0061977 | NCP | % | 92 | | | 75-125 | Pass | |
| Lead (filtered) | S22-Oc0061977 | NCP | % | 94 | | | 75-125 | Pass | |
| Mercury (filtered) | S22-Oc0061977 | NCP | % | 100 | | | 75-125 | Pass | |
| Nickel (filtered) | S22-Oc0061977 | NCP | % | 93 | | | 75-125 | Pass | |
| Zinc (filtered) | S22-Oc0061977 | NCP | % | 96 | | | 75-125 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Chromium | B22-Se0058608 | NCP | % | 99 | | | 75-125 | Pass | |
| Copper | S22-Oc0061554 | NCP | % | 94 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | S22-Oc0058311 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| Naphthalene | S22-Oc0058311 | NCP | mg/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| TRH C6-C10 | S22-Oc0058311 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | S22-Oc0058311 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Toluene | S22-Oc0058311 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Ethylbenzene | S22-Oc0058311 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| m&p-Xylenes | S22-Oc0058311 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| o-Xylene | S22-Oc0058311 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Xylenes - Total* | S22-Oc0058311 | NCP | mg/L | < 0.003 | < 0.003 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Total Dissolved Solids Dried at 180 °C ± 2 °C | S22-Oc0063030 | CP | mg/L | 4000 | 4200 | 4.4 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic (filtered) | S22-Oc0063186 | NCP | mg/L | 0.002 | 0.002 | 25 | 30% | Pass | |
| Cadmium (filtered) | S22-Oc0063186 | NCP | mg/L | 0.0003 | < 0.0002 | 28 | 30% | Pass | |
| Chromium (filtered) | S22-Oc0063186 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Copper (filtered) | S22-Oc0063186 | NCP | mg/L | 0.002 | 0.002 | 7.6 | 30% | Pass | |
| Lead (filtered) | S22-Oc0063186 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Mercury (filtered) | S22-Oc0063186 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Nickel (filtered) | S22-Oc0063186 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Zinc (filtered) | S22-Oc0063186 | NCP | mg/L | < 0.005 | < 0.005 | <1 | 30% | Pass | Q15 |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonamido substances- Trace** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorooctane sulfonamide (FOSA) | S22-Oc0063030 | CP | ug/L | < 0.005 | < 0.005 | <1 | 30% | Pass | |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | S22-Oc0063030 | CP | ug/L | < 0.005 | < 0.005 | <1 | 30% | Pass | |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | S22-Oc0063030 | CP | ug/L | < 0.005 | < 0.005 | <1 | 30% | Pass | |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) | S22-Oc0063030 | CP | ug/L | < 0.005 | < 0.005 | <1 | 30% | Pass | |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) | S22-Oc0063030 | CP | ug/L | < 0.005 | < 0.005 | <1 | 30% | Pass | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | S22-Oc0063030 | CP | ug/L | < 0.005 | < 0.005 | <1 | 30% | Pass | |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | S22-Oc0063030 | CP | ug/L | < 0.005 | < 0.005 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs) - Trace** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorobutanoic acid (PFBA) | S22-Oc0063030 | CP | ug/L | < 0.005 | < 0.005 | <1 | 30% | Pass | |
| Perfluoropentanoic acid (PFPeA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Perfluorohexanoic acid (PFHxA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Perfluoroheptanoic acid (PFHpA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Perfluorooctanoic acid (PFOA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Perfluorononanoic acid (PFNA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Perfluorodecanoic acid (PFDA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Perfluorotridecanoic acid (PFTrDA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Perfluoroundecanoic acid (PFUnDA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Perfluorododecanoic acid (PFDoDA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Perfluorotetradecanoic acid (PFTeDA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)- Trace** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorobutanesulfonic acid (PFBS) | S22-Oc0063030 | CP | ug/L | 0.017 | 0.016 | 5.3 | 30% | Pass | |
| Perfluorononanesulfonic acid (PFNS) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Perfluoropropanesulfonic acid (PFPrS) | S22-Oc0063030 | CP | ug/L | 0.007 | 0.007 | 2.9 | 30% | Pass | |
| Perfluoropentanesulfonic acid (PFPeS) | S22-Oc0063030 | CP | ug/L | 0.006 | 0.006 | <1 | 30% | Pass | |
| Perfluorohexanesulfonic acid (PFHxS) | S22-Oc0063030 | CP | ug/L | 0.007 | 0.007 | 5.9 | 30% | Pass | |
| Perfluoroheptanesulfonic acid (PFHpS) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Perfluoroalkyl sulfonic acids (PFSAs)- Trace** | | | | Result 1 | Result 2 | RPD | | | |
| Perfluorooctanesulfonic acid (PFOS) | S22-Oc0063030 | CP | ug/L | 0.003 | 0.003 | 1.3 | 30% | Pass | |
| Perfluorodecanesulfonic acid (PFDS) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace** | | | | Result 1 | Result 2 | RPD | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) | S22-Oc0063030 | CP | ug/L | < 0.005 | < 0.005 | <1 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | S22-Oc0063030 | CP | ug/L | < 0.001 | 0.001 | 15 | 30% | Pass | |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | S22-Oc0063030 | CP | ug/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (at 25 °C) | S22-Oc0063031 | CP | uS/cm | 7100 | 7500 | 5.5 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C10-C14 | S22-No0000561 | CP | mg/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| TRH C15-C28 | S22-No0000561 | CP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| TRH C29-C36 | S22-No0000561 | CP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| TRH >C10-C16 | S22-No0000561 | CP | mg/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| TRH >C16-C34 | S22-No0000561 | CP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| TRH >C34-C40 | S22-No0000561 | CP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Acenaphthene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Acenaphthylene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Anthracene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Benz(a)anthracene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Benzo(a)pyrene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Benzo(b&j)fluoranthene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Benzo(g.h.i)perylene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Benzo(k)fluoranthene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Chrysene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Dibenz(a.h)anthracene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Fluoranthene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Fluorene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Indeno(1.2.3-cd)pyrene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Naphthalene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Phenanthrene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Pyrene | S22-No0000561 | CP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Chromium | S22-Oc0060787 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |

## Comments

V2- new version amend PFAS blank result which had a tiny hit of interference not legit.

## 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 |
|---|---|
| N01 | F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis). |
| N02 | Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid. |
| N04 | F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. |
| N07 | Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs |
| 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). |
| Q09 | The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC |
| 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:

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Gabriele Cordero | Senior Analyst-Metal |
| Jonathon Angell | Senior Analyst-PFAS |
| Raymond Siu | Senior Analyst-Volatile |
| Roopesh Rangarajan | Senior Analyst-Inorganic |
| Roopesh Rangarajan | Senior Analyst-Organic |
| Roopesh Rangarajan | Senior Analyst-Volatile |
| Ryan Phillips | Senior Analyst-Inorganic |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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# CERTIFICATE OF ANALYSIS 309337

## Client Details

| | |
|---|---|
| **Client** | JBS & G (NSW & WA) Pty Ltd |
| **Attention** | Michelle Delandro |
| **Address** | Level 1, 50 Margaret St, Sydney, NSW, 2000 |

## Sample Details

| | |
|---|---|
| **Your Reference** | **63325, EDPARK-GME** |
| **Number of Samples** | 1 Water |
| **Date samples received** | 31/10/2022 |
| **Date completed instructions received** | 31/10/2022 |

## Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

**Please refer to the last page of this report for any comments relating to the results.**

## Report Details

| | |
|---|---|
| **Date results requested by** | 03/11/2022 |
| **Date of Issue** | 25/11/2022 |
| **Reissue Details** | This report replaces R00 created on 03/11/2022 due to: revised report with additional results. |

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**Results Approved By**
Diego Bigolin, Inorganics Supervisor
Kyle Gavrily, Senior Chemist
Loren Bardwell, Development Chemist
Phalak Inthakesone, Organics Development Manager, Sydney
Steven Luong, Senior Chemist

**Authorised By**

Nancy Zhang, Laboratory Manager

| vTRH(C6-C10)/BTEXN in Water | | |
|---|---|---|
| Our Reference | | 309337-1 |
| Your Reference | UNITS | QA20221028 |
| Date Sampled | | 28/10/2022 |
| Type of sample | | Water |
| Date extracted | - | 01/11/2022 |
| Date analysed | - | 02/11/2022 |
| TRH $C_6$ - $C_9$ | µg/L | <10 |
| TRH $C_6$ - $C_{10}$ | µg/L | <10 |
| TRH $C_6$ - $C_{10}$ less BTEX (F1) | µg/L | <10 |
| Benzene | µg/L | <1 |
| Toluene | µg/L | <1 |
| Ethylbenzene | µg/L | <1 |
| m+p-xylene | µg/L | <2 |
| o-xylene | µg/L | <1 |
| Naphthalene | µg/L | <1 |
| *Surrogate* Dibromofluoromethane | % | 112 |
| *Surrogate* toluene-d8 | % | 106 |
| *Surrogate* 4-BFB | % | 98 |

| svTRH (C10-C40) in Water | | |
|---|---|---|
| Our Reference | | 309337-1 |
| Your Reference | UNITS | QA20221028 |
| Date Sampled | | 28/10/2022 |
| Type of sample | | Water |
| Date extracted | - | 01/11/2022 |
| Date analysed | - | 01/11/2022 |
| TRH $C_{10}$ - $C_{14}$ | µg/L | <50 |
| TRH $C_{15}$ - $C_{28}$ | µg/L | <100 |
| TRH $C_{29}$ - $C_{36}$ | µg/L | <100 |
| Total +ve TRH (C10-C36) | µg/L | <50 |
| TRH >$C_{10}$ - $C_{16}$ | µg/L | <50 |
| TRH >$C_{10}$ - $C_{16}$ less Naphthalene (F2) | µg/L | <50 |
| TRH >$C_{16}$ - $C_{34}$ | µg/L | <100 |
| TRH >$C_{34}$ - $C_{40}$ | µg/L | <100 |
| Total +ve TRH (>C10-C40) | µg/L | <50 |
| *Surrogate* o-Terphenyl | % | 95 |

| PAHs in Water | | |
|---|---|---|
| Our Reference | | 309337-1 |
| Your Reference | UNITS | QA20221028 |
| Date Sampled | | 28/10/2022 |
| Type of sample | | Water |
| Date extracted | - | 01/11/2022 |
| Date analysed | - | 02/11/2022 |
| Naphthalene | µg/L | <1 |
| Acenaphthylene | µg/L | <1 |
| Acenaphthene | µg/L | <1 |
| Fluorene | µg/L | <1 |
| Phenanthrene | µg/L | <1 |
| Anthracene | µg/L | <1 |
| Fluoranthene | µg/L | <1 |
| Pyrene | µg/L | <1 |
| Benzo(a)anthracene | µg/L | <1 |
| Chrysene | µg/L | <1 |
| Benzo(b,j+k)fluoranthene | µg/L | <2 |
| Benzo(a)pyrene | µg/L | <1 |
| Indeno(1,2,3-c,d)pyrene | µg/L | <1 |
| Dibenzo(a,h)anthracene | µg/L | <1 |
| Benzo(g,h,i)perylene | µg/L | <1 |
| Benzo(a)pyrene TEQ | µg/L | <5 |
| Total +ve PAH's | µg/L | NIL (+)VE |
| *Surrogate p*-Terphenyl-d14 | % | 81 |

| HM in water - dissolved | | |
|---|---|---|
| Our Reference | | 309337-1 |
| Your Reference | UNITS | QA20221028 |
| Date Sampled | | 28/10/2022 |
| Type of sample | | Water |
| Date prepared | - | 01/11/2022 |
| Date analysed | - | 01/11/2022 |
| Arsenic-Dissolved | µg/L | <1 |
| Cadmium-Dissolved | µg/L | <0.1 |
| Chromium-Dissolved | µg/L | <1 |
| Copper-Dissolved | µg/L | <1 |
| Lead-Dissolved | µg/L | <1 |
| Mercury-Dissolved | µg/L | <0.05 |
| Nickel-Dissolved | µg/L | 2 |
| Zinc-Dissolved | µg/L | 5 |

| PFAS in Water LOW LEVEL Extend | | |
|---|---|---|
| Our Reference | UNITS | 309337-1 |
| Your Reference | | QA20221028 |
| Date Sampled | | 28/10/2022 |
| Type of sample | | Water |
| Date prepared | - | 03/11/2022 |
| Date analysed | - | 03/11/2022 |
| Perfluorobutanesulfonic acid | µg/L | 0.018 |
| Perfluoropentanesulfonic acid | µg/L | 0.008 |
| Perfluorohexanesulfonic acid - PFHxS | µg/L | 0.009 |
| Perfluoroheptanesulfonic acid | µg/L | <0.001 |
| Perfluorooctanesulfonic acid PFOS | µg/L | <0.001 |
| Perfluorodecanesulfonic acid | µg/L | <0.002 |
| Perfluorobutanoic acid | µg/L | <0.02 |
| Perfluoropentanoic acid | µg/L | <0.002 |
| Perfluorohexanoic acid | µg/L | <0.001 |
| Perfluoroheptanoic acid | µg/L | <0.001 |
| Perfluorooctanoic acid PFOA | µg/L | <0.001 |
| Perfluorononanoic acid | µg/L | <0.001 |
| Perfluorodecanoic acid | µg/L | <0.002 |
| Perfluoroundecanoic acid | µg/L | <0.002 |
| Perfluorododecanoic acid | µg/L | <0.005 |
| Perfluorotridecanoic acid | µg/L | <0.01 |
| Perfluorotetradecanoic acid | µg/L | <0.05 |
| 4:2 FTS | µg/L | <0.001 |
| 6:2 FTS | µg/L | <0.001 |
| 8:2 FTS | µg/L | <0.002 |
| 10:2 FTS | µg/L | <0.002 |
| Perfluorooctane sulfonamide | µg/L | <0.01 |
| N-Methyl perfluorooctane sulfonamide | µg/L | <0.05 |
| N-Ethyl perfluorooctanesulfon amide | µg/L | <0.1 |
| N-Me perfluorooctanesulfonamid oethanol | µg/L | <0.05 |
| N-Et perfluorooctanesulfonamid oethanol | µg/L | <0.5 |
| MePerfluorooctanesulf- amid oacetic acid | µg/L | <0.002 |
| EtPerfluorooctanesulf- amid oacetic acid | µg/L | <0.002 |
| *Surrogate* $^{13}C_8$ *PFOS* | % | 99 |
| *Surrogate* $^{13}C_2$ *PFOA* | % | 102 |
| *Extracted ISTD* $^{13}C_3$ *PFBS* | % | 106 |
| *Extracted ISTD* $^{18}O_2$ *PFHxS* | % | 96 |
| *Extracted ISTD* $^{13}C_4$ *PFOS* | % | 78 |
| *Extracted ISTD* $^{13}C_4$ *PFBA* | % | 49 |

| PFAS in Water LOW LEVEL Extend | | |
|---|---|---|
| Our Reference | | 309337-1 |
| Your Reference | UNITS | QA20221028 |
| Date Sampled | | 28/10/2022 |
| Type of sample | | Water |
| *Extracted ISTD* $^{13}C_3$ *PFPeA* | % | 61 |
| *Extracted ISTD* $^{13}C_2$ *PFHxA* | % | 104 |
| *Extracted ISTD* $^{13}C_4$ *PFHpA* | % | 117 |
| *Extracted ISTD* $^{13}C_4$ *PFOA* | % | 113 |
| *Extracted ISTD* $^{13}C_5$ *PFNA* | % | 103 |
| *Extracted ISTD* $^{13}C_2$ *PFDA* | % | 85 |
| *Extracted ISTD* $^{13}C_2$ *PFUnDA* | % | 83 |
| *Extracted ISTD* $^{13}C_2$ *PFDoDA* | % | 64 |
| *Extracted ISTD* $^{13}C_2$ *PFTeDA* | % | 71 |
| *Extracted ISTD* $^{13}C_2$ *4:2FTS* | % | 138 |
| *Extracted ISTD* $^{13}C_2$ *6:2FTS* | % | 123 |
| *Extracted ISTD* $^{13}C_2$ *8:2FTS* | % | 117 |
| *Extracted ISTD* $^{13}C_8$ *FOSA* | % | 55 |
| *Extracted ISTD* $d_3$ *N MeFOSA* | % | 96 |
| *Extracted ISTD* $d_5$ *N EtFOSA* | % | 129 |
| *Extracted ISTD* $d_7$ *N MeFOSE* | % | 134 |
| *Extracted ISTD* $d_9$ *N EtFOSE* | % | 116 |
| *Extracted ISTD* $d_3$ *N MeFOSAA* | % | 71 |
| *Extracted ISTD* $d_5$ *N EtFOSAA* | % | 78 |
| Total Positive PFHxS & PFOS | µg/L | 0.009 |
| Total Positive PFOA & PFOS | µg/L | <0.001 |
| Total Positive PFAS | µg/L | 0.034 |

| Miscellaneous Inorganics | | |
|---|---|---|
| Our Reference | | 309337-1 |
| Your Reference | UNITS | QA20221028 |
| Date Sampled | | 28/10/2022 |
| Type of sample | | Water |
| Date prepared | - | 01/11/2022 |
| Date analysed | - | 01/11/2022 |
| pH | pH Units | 7.1 |
| Electrical Conductivity | µS/cm | 7,900 |
| Total Dissolved Solids (grav) | mg/L | 4,700 |

| Method ID | Methodology Summary |
|---|---|
| **Inorg-001** | pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times. |
| **Inorg-002** | Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons. |
| **Inorg-018** | Total Dissolved Solids - determined gravimetrically. The solids are dried at 180+/-10°C. |
| **Metals-021** | Determination of Mercury by Cold Vapour AAS. |
| **Metals-022** | Determination of various metals by ICP-MS. |
| **Org-020** | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. |
| **Org-022/025** | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. |
| **Org-023** | Water samples are analysed directly by purge and trap GC-MS. |
| **Org-023** | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. |
| **Org-029** | Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3.<br><br>Analysis is undertaken with LC-MS/MS.<br><br>PFAS results include the sum of branched and linear isomers where applicable.<br><br>Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components.<br><br>Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER. |

| QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water | | | | | Duplicate | | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-W2 | [NT] |
| Date extracted | - | | | 01/11/2022 | [NT] | [NT] | [NT] | [NT] | 01/11/2022 | [NT] |
| Date analysed | - | | | 02/11/2022 | [NT] | [NT] | [NT] | [NT] | 02/11/2022 | [NT] |
| TRH $C_6$ - $C_9$ | µg/L | 10 | Org-023 | <10 | [NT] | [NT] | [NT] | [NT] | 120 | [NT] |
| TRH $C_6$ - $C_{10}$ | µg/L | 10 | Org-023 | <10 | [NT] | [NT] | [NT] | [NT] | 120 | [NT] |
| Benzene | µg/L | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | 120 | [NT] |
| Toluene | µg/L | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | 120 | [NT] |
| Ethylbenzene | µg/L | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | 119 | [NT] |
| m+p-xylene | µg/L | 2 | Org-023 | <2 | [NT] | [NT] | [NT] | [NT] | 120 | [NT] |
| o-xylene | µg/L | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | 120 | [NT] |
| Naphthalene | µg/L | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| *Surrogate* Dibromofluoromethane | % | | Org-023 | 104 | [NT] | [NT] | [NT] | [NT] | 102 | [NT] |
| *Surrogate* toluene-d8 | % | | Org-023 | 104 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| *Surrogate* 4-BFB | % | | Org-023 | 100 | [NT] | [NT] | [NT] | [NT] | 99 | [NT] |

| QUALITY CONTROL: svTRH (C10-C40) in Water | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-W1 | [NT] |
| Date extracted | - | | | 01/11/2022 | 1 | 01/11/2022 | 01/11/2022 | | 01/11/2022 | [NT] |
| Date analysed | - | | | 01/11/2022 | 1 | 01/11/2022 | 01/11/2022 | | 01/11/2022 | [NT] |
| TRH $C_{10}$ - $C_{14}$ | µg/L | 50 | Org-020 | <50 | 1 | <50 | <50 | 0 | 86 | [NT] |
| TRH $C_{15}$ - $C_{28}$ | µg/L | 100 | Org-020 | <100 | 1 | <100 | <100 | 0 | 97 | [NT] |
| TRH $C_{29}$ - $C_{36}$ | µg/L | 100 | Org-020 | <100 | 1 | <100 | <100 | 0 | 86 | [NT] |
| TRH >$C_{10}$ - $C_{16}$ | µg/L | 50 | Org-020 | <50 | 1 | <50 | <50 | 0 | 86 | [NT] |
| TRH >$C_{16}$ - $C_{34}$ | µg/L | 100 | Org-020 | <100 | 1 | <100 | <100 | 0 | 97 | [NT] |
| TRH >$C_{34}$ - $C_{40}$ | µg/L | 100 | Org-020 | <100 | 1 | <100 | <100 | 0 | 86 | [NT] |
| *Surrogate* o-Terphenyl | % | | Org-020 | 106 | 1 | 95 | 96 | 1 | 119 | [NT] |

| QUALITY CONTROL: PAHs in Water | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-W1 | [NT] |
| Date extracted | - | | | 01/11/2022 | 1 | 01/11/2022 | 01/11/2022 | | 01/11/2022 | [NT] |
| Date analysed | - | | | 02/11/2022 | 1 | 02/11/2022 | 02/11/2022 | | 02/11/2022 | [NT] |
| Naphthalene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | 80 | [NT] |
| Acenaphthylene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | [NT] | [NT] |
| Acenaphthene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | 77 | [NT] |
| Fluorene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | 78 | [NT] |
| Phenanthrene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | 88 | [NT] |
| Anthracene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | [NT] | [NT] |
| Fluoranthene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | 78 | [NT] |
| Pyrene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | 85 | [NT] |
| Benzo(a)anthracene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | [NT] | [NT] |
| Chrysene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | 79 | [NT] |
| Benzo(b,j+k)fluoranthene | µg/L | 2 | Org-022/025 | <2 | 1 | <2 | <2 | 0 | [NT] | [NT] |
| Benzo(a)pyrene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | 76 | [NT] |
| Indeno(1,2,3-c,d)pyrene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | [NT] | [NT] |
| Dibenzo(a,h)anthracene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | [NT] | [NT] |
| Benzo(g,h,i)perylene | µg/L | 1 | Org-022/025 | <1 | 1 | <1 | <1 | 0 | [NT] | [NT] |
| *Surrogate p*-Terphenyl-d14 | % | | Org-022/025 | 81 | 1 | 81 | 80 | 1 | 84 | [NT] |

| QUALITY CONTROL: HM in water - dissolved | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-W2 | [NT] |
| Date prepared | - | | | 01/11/2022 | [NT] | [NT] | [NT] | [NT] | 01/11/2022 | [NT] |
| Date analysed | - | | | 01/11/2022 | [NT] | [NT] | [NT] | [NT] | 01/11/2022 | [NT] |
| Arsenic-Dissolved | µg/L | 1 | Metals-022 | <1 | [NT] | [NT] | [NT] | [NT] | 93 | [NT] |
| Cadmium-Dissolved | µg/L | 0.1 | Metals-022 | <0.1 | [NT] | [NT] | [NT] | [NT] | 98 | [NT] |
| Chromium-Dissolved | µg/L | 1 | Metals-022 | <1 | [NT] | [NT] | [NT] | [NT] | 92 | [NT] |
| Copper-Dissolved | µg/L | 1 | Metals-022 | <1 | [NT] | [NT] | [NT] | [NT] | 90 | [NT] |
| Lead-Dissolved | µg/L | 1 | Metals-022 | <1 | [NT] | [NT] | [NT] | [NT] | 98 | [NT] |
| Mercury-Dissolved | µg/L | 0.05 | Metals-021 | <0.05 | [NT] | [NT] | [NT] | [NT] | 108 | [NT] |
| Nickel-Dissolved | µg/L | 1 | Metals-022 | <1 | [NT] | [NT] | [NT] | [NT] | 90 | [NT] |
| Zinc-Dissolved | µg/L | 1 | Metals-022 | <1 | [NT] | [NT] | [NT] | [NT] | 92 | [NT] |

| QUALITY CONTROL: PFAS in Water LOW LEVEL Extend | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-W1 | [NT] |
| Date prepared | - | | | 03/11/2022 | 1 | 03/11/2022 | 03/11/2022 | | 03/11/2022 | [NT] |
| Date analysed | - | | | 03/11/2022 | 1 | 03/11/2022 | 03/11/2022 | | 03/11/2022 | [NT] |
| Perfluorobutanesulfonic acid | µg/L | 0.001 | Org-029 | <0.001 | 1 | 0.018 | 0.017 | 6 | 92 | [NT] |
| Perfluoropentanesulfonic acid | µg/L | 0.001 | Org-029 | <0.001 | 1 | 0.008 | 0.008 | 0 | 103 | [NT] |
| Perfluorohexanesulfonic acid - PFHxS | µg/L | 0.001 | Org-029 | <0.001 | 1 | 0.009 | 0.010 | 11 | 96 | [NT] |
| Perfluoroheptanesulfonic acid | µg/L | 0.001 | Org-029 | <0.001 | 1 | <0.001 | <0.001 | 0 | 80 | [NT] |
| Perfluorooctanesulfonic acid PFOS | µg/L | 0.001 | Org-029 | <0.001 | 1 | <0.001 | <0.001 | 0 | 98 | [NT] |
| Perfluorodecanesulfonic acid | µg/L | 0.002 | Org-029 | <0.002 | 1 | <0.002 | <0.002 | 0 | 92 | [NT] |
| Perfluorobutanoic acid | µg/L | 0.002 | Org-029 | <0.002 | 1 | <0.02 | <0.02 | 0 | 94 | [NT] |
| Perfluoropentanoic acid | µg/L | 0.002 | Org-029 | <0.002 | 1 | <0.002 | <0.002 | 0 | 97 | [NT] |
| Perfluorohexanoic acid | µg/L | 0.001 | Org-029 | <0.001 | 1 | <0.001 | <0.001 | 0 | 95 | [NT] |
| Perfluoroheptanoic acid | µg/L | 0.001 | Org-029 | <0.001 | 1 | <0.001 | <0.001 | 0 | 97 | [NT] |
| Perfluorooctanoic acid PFOA | µg/L | 0.001 | Org-029 | <0.001 | 1 | <0.001 | <0.001 | 0 | 96 | [NT] |
| Perfluorononanoic acid | µg/L | 0.001 | Org-029 | <0.001 | 1 | <0.001 | <0.001 | 0 | 99 | [NT] |
| Perfluorodecanoic acid | µg/L | 0.002 | Org-029 | <0.002 | 1 | <0.002 | <0.002 | 0 | 103 | [NT] |
| Perfluoroundecanoic acid | µg/L | 0.002 | Org-029 | <0.002 | 1 | <0.002 | <0.002 | 0 | 86 | [NT] |
| Perfluorododecanoic acid | µg/L | 0.005 | Org-029 | <0.005 | 1 | <0.005 | <0.005 | 0 | 94 | [NT] |
| Perfluorotridecanoic acid | µg/L | 0.01 | Org-029 | <0.01 | 1 | <0.01 | <0.01 | 0 | 82 | [NT] |
| Perfluorotetradecanoic acid | µg/L | 0.05 | Org-029 | <0.05 | 1 | <0.05 | <0.05 | 0 | 99 | [NT] |
| 4:2 FTS | µg/L | 0.001 | Org-029 | <0.001 | 1 | <0.001 | <0.001 | 0 | 98 | [NT] |
| 6:2 FTS | µg/L | 0.001 | Org-029 | <0.001 | 1 | <0.001 | <0.001 | 0 | 103 | [NT] |
| 8:2 FTS | µg/L | 0.002 | Org-029 | <0.002 | 1 | <0.002 | <0.002 | 0 | 88 | [NT] |
| 10:2 FTS | µg/L | 0.002 | Org-029 | <0.002 | 1 | <0.002 | <0.002 | 0 | 100 | [NT] |
| Perfluorooctane sulfonamide | µg/L | 0.01 | Org-029 | <0.01 | 1 | <0.01 | <0.01 | 0 | 92 | [NT] |
| N-Methyl perfluorooctane sulfonamide | µg/L | 0.05 | Org-029 | <0.05 | 1 | <0.05 | <0.05 | 0 | 110 | [NT] |
| N-Ethyl perfluorooctanesulfon amide | µg/L | 0.1 | Org-029 | <0.1 | 1 | <0.1 | <0.1 | 0 | 110 | [NT] |
| N-Me perfluorooctanesulfonamid oethanol | µg/L | 0.05 | Org-029 | <0.05 | 1 | <0.05 | <0.05 | 0 | 97 | [NT] |
| N-Et perfluorooctanesulfonamid oethanol | µg/L | 0.5 | Org-029 | <0.5 | 1 | <0.5 | <0.5 | 0 | 98 | [NT] |
| MePerfluorooctanesulf- amid oacetic acid | µg/L | 0.002 | Org-029 | <0.002 | 1 | <0.002 | <0.002 | 0 | 96 | [NT] |
| EtPerfluorooctanesulf- amid oacetic acid | µg/L | 0.002 | Org-029 | <0.002 | 1 | <0.002 | <0.002 | 0 | 90 | [NT] |
| *Surrogate* $^{13}C_8$ *PFOS* | % | | Org-029 | 100 | 1 | 99 | 98 | 1 | 105 | [NT] |
| *Surrogate* $^{13}C_2$ *PFOA* | % | | Org-029 | 99 | 1 | 102 | 105 | 3 | 99 | [NT] |

| QUALITY CONTROL: PFAS in Water LOW LEVEL Extend | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-W1 | [NT] |
| *Extracted ISTD* $^{13}C_3$ *PFBS* | % | | Org-029 | 104 | 1 | 106 | 108 | 2 | 105 | [NT] |
| *Extracted ISTD* $^{18}O_2$ *PFHxS* | % | | Org-029 | 97 | 1 | 96 | 92 | 4 | 92 | [NT] |
| *Extracted ISTD* $^{13}C_4$ *PFOS* | % | | Org-029 | 81 | 1 | 78 | 74 | 5 | 71 | [NT] |
| *Extracted ISTD* $^{13}C_4$ *PFBA* | % | | Org-029 | 105 | 1 | 49 | 62 | 23 | 101 | [NT] |
| *Extracted ISTD* $^{13}C_3$ *PFPeA* | % | | Org-029 | 102 | 1 | 61 | 59 | 3 | 94 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *PFHxA* | % | | Org-029 | 98 | 1 | 104 | 104 | 0 | 98 | [NT] |
| *Extracted ISTD* $^{13}C_4$ *PFHpA* | % | | Org-029 | 112 | 1 | 117 | 113 | 3 | 105 | [NT] |
| *Extracted ISTD* $^{13}C_4$ *PFOA* | % | | Org-029 | 110 | 1 | 113 | 110 | 3 | 98 | [NT] |
| *Extracted ISTD* $^{13}C_5$ *PFNA* | % | | Org-029 | 106 | 1 | 103 | 98 | 5 | 91 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *PFDA* | % | | Org-029 | 91 | 1 | 85 | 80 | 6 | 83 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *PFUnDA* | % | | Org-029 | 89 | 1 | 83 | 79 | 5 | 89 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *PFDoDA* | % | | Org-029 | 85 | 1 | 64 | 57 | 12 | 85 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *PFTeDA* | % | | Org-029 | 52 | 1 | 71 | 60 | 17 | 54 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *4:2FTS* | % | | Org-029 | 130 | 1 | 138 | 142 | 3 | 128 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *6:2FTS* | % | | Org-029 | 130 | 1 | 123 | 121 | 2 | 112 | [NT] |
| *Extracted ISTD* $^{13}C_2$ *8:2FTS* | % | | Org-029 | 128 | 1 | 117 | 107 | 9 | 119 | [NT] |
| *Extracted ISTD* $^{13}C_8$ *FOSA* | % | | Org-029 | 74 | 1 | 55 | 49 | 12 | 62 | [NT] |
| *Extracted ISTD* $d_3$ *N MeFOSA* | % | | Org-029 | 103 | 1 | 96 | 93 | 3 | 108 | [NT] |
| *Extracted ISTD* $d_5$ *N EtFOSA* | % | | Org-029 | 111 | 1 | 129 | 130 | 1 | 111 | [NT] |
| *Extracted ISTD* $d_7$ *N MeFOSE* | % | | Org-029 | 123 | 1 | 134 | 132 | 2 | 123 | [NT] |

| QUALITY CONTROL: PFAS in Water LOW LEVEL Extend | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-W1 | [NT] |
| *Extracted ISTD* $d_9$ *N EtFOSE* | % | | Org-029 | 121 | 1 | 116 | 111 | 4 | 115 | [NT] |
| *Extracted ISTD* $d_3$ *N MeFOSAA* | % | | Org-029 | 93 | 1 | 71 | 64 | 10 | 85 | [NT] |
| *Extracted ISTD* $d_5$ *N EtFOSAA* | % | | Org-029 | 99 | 1 | 78 | 66 | 17 | 94 | [NT] |

| QUALITY CONTROL: Miscellaneous Inorganics | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-W1 | [NT] |
| Date prepared | - | | | 01/11/2022 | 1 | 01/11/2022 | 01/11/2022 | | 01/11/2022 | [NT] |
| Date analysed | - | | | 01/11/2022 | 1 | 01/11/2022 | 01/11/2022 | | 01/11/2022 | [NT] |
| pH | pH Units | | Inorg-001 | [NT] | 1 | 7.1 | [NT] | | 101 | [NT] |
| Electrical Conductivity | µS/cm | 1 | Inorg-002 | <1 | 1 | 7900 | [NT] | | 104 | [NT] |
| Total Dissolved Solids (grav) | mg/L | 5 | Inorg-018 | <5 | 1 | 4700 | 4300 | 9 | 98 | [NT] |

## Result Definitions

| | |
|---|---|
| **NT** | Not tested |
| **NA** | Test not required |
| **INS** | Insufficient sample for this test |
| **PQL** | Practical Quantitation Limit |
| **<** | Less than |
| **>** | Greater than |
| **RPD** | Relative Percent Difference |
| **LCS** | Laboratory Control Sample |
| **NS** | Not specified |
| **NEPM** | National Environmental Protection Measure |
| **NR** | Not Reported |

## Quality Control Definitions

| | |
|---|---|
| **Blank** | This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples. |
| **Duplicate** | This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable. |
| **Matrix Spike** | A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist. |
| **LCS (Laboratory Control Sample)** | This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample. |
| **Surrogate Spike** | Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples. |

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

## Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

## Report Comments

For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

ENVIRO

# Chain of Custody

JBS&G

| | |
|---|---|
| PROJECT NO.: 63325 | LABORATORY BATCH NO.: |
| PROJECT NAME: EDPARK_GME | SAMPLERS: MASSIMO CHAPMAN. |
| DATE NEEDED BY: 3 DAY T.A.T | QC LEVEL: NEPM (2013) |

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) Mdelcondro@jbsg.com.au; (3) mchapman@jbsg.com.au jrosner@

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | HCMs Metals | BTEX | PAHs | PFAS/PFOS (1L) | pH/EC/TDS | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QA20221028 | WATER | 28/10/22 | | AMBER, VIALS, HDPE, PLASTIC, PFAS + ICE | | X | X | X | X | X | | | |

Enviro Lab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 309337
Date Received: 31-10-22
Time Received: 1300
Received By: DHAN
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: MASSIMO CHAPMAN DATE: 28/10/22. | CONSIGNMENT NOTE NO. | NAME: Ravi DATE: 28/10/22 6:00PM | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | OF: | COOLER TEMP 24 C deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DHAN DATE: 31-10-22 | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: ESDAMEY | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

2 ESKIES


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# 1 DAY TAT ADDITIONAL LEACHATES: FW: Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

Andrew Black <AndrewBlack@eurofins.com>
Fri 2022-11-25 8:47 AM
To: #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

**INFO**: INTERNAL EMAIL - Sent from your own Eurofins email domain.

Urgent 1 day TAT additional leachates thanks team

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing Australia Pty Ltd**
Unit 7
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*For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnvirosampleNSW@eurofins.com or 02 9900 8421 (7am – 9pm).*
*For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).*

---

**From:** Michelle Delandro <MDelandro@jbsg.com.au>
**Sent:** Friday, 25 November 2022 8:46 AM
**To:** Andrew Black <AndrewBlack@eurofins.com>
**Subject:** RE: Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

**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.

In addition, can I please request lead TCLP on a 24hr TAT on the following samples?

DG05_0_0.1

DG07_0_0.1

FT03_0_0.1

Thanks,

Michelle

**Michelle Delandro| Senior Project Manager| JBS&G**
Gadigal Country | Level 1, 50 Margaret Street, Sydney, NSW
T: 02 8245 0300 | M: 0417 287 561| E: mdelandro@jbsg.com.au | W: jbsg.com.au | L: Conditions and Limitations

*Exceptional Outcomes*

---

**From:** Andrew Black <AndrewBlack@eurofins.com>
**Sent:** Friday, 25 November 2022 8:44 AM
**To:** Michelle Delandro <MDelandro@jbsg.com.au>
**Subject:** RE: Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

***[EXTERNAL EMAIL]** Stop and think before opening attachments, clicking or responding.***

No worries Michelle I have raised a repeat on it

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing Australia Pty Ltd**
Unit 7
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AUSTRALIA
Phone: +61 2 9900 8490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website: eurofins.com.au/environmental-testing




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*For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).*

---

**From:** Michelle Delandro <MDelandro@jbsg.com.au>
**Sent:** Friday, 25 November 2022 8:09 AM
**To:** Andrew Black <AndrewBlack@eurofins.com>
**Subject:** RE: Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

**CAUTION:** EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

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Hi Andrew,

Can you please check legitimacy of lead analysis reported from the following batch for sample ASAP?

| | | |
|---|---|---|
| DG05_0_0.1 | 17/10/2022 | 933769 |

Thanks

Michelle

**Michelle Delandro| Senior Project Manager| JBS&G**
Gadigal Country | Level 1, 50 Margaret Street, Sydney, NSW
T: 02 8245 0300 | M: 0417 287 561| E: mdelandro@jbsg.com.au | W: jbsg.com.au | L: Conditions and Limitations

*Exceptional Outcomes*

---

**From:** AndrewBlack@eurofins.com <AndrewBlack@eurofins.com>
**Sent:** Thursday, 27 October 2022 10:58 AM
**To:** Michelle Delandro <MDelandro@jbsg.com.au>
**Cc:** Massimo Chapman <mchapman@jbsg.com.au>
**Subject:** Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

***[EXTERNAL EMAIL] Stop and think before opening attachments, clicking or responding.***

Dear Massimo

I will get you to double check things with this job since I know there were some discrepancies with a couple of samples missing and asbestos bags potentially.

Kindest Regards,

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing**
Unit 7
7 Friesian Close
SANDGATE NSW 2304

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Phone: +61 299 008 490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website:[http://]environment.eurofins.com.au
View our latest EnviroNotes
How did we do? Provide your feedback here



eurofins

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Tel: 0800 856 450
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**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** ADDITIONAL - EDPARK-OP
**Project ID:** ADDITIONAL - 63325

**Order No.:**
**Report #:** 944666
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 25, 2022 8:47 AM
**Due:** Nov 28, 2022
**Priority:** 1 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Lead | USA Leaching Procedure |
|---|---|---|---|---|---|---|---|
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X |
| **External Laboratory** | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | |
| 1 | DG05_0_0.1 | Oct 17, 2022 | | US Leachate | S22-No0062716 | X | X |
| 2 | DG07_0_0.1 | Oct 17, 2022 | | US Leachate | S22-No0062717 | X | X |
| 3 | FT03_0_0.1 | Oct 17, 2022 | | US Leachate | S22-No0062718 | X | X |
| **Test Counts** | | | | | | 3 | 3 |

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

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

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

**Attention:** **Michelle Delandro**

**Report** **944666-L**
Project name ADDITIONAL - EDPARK-OP
Project ID ADDITIONAL - 63325
Received Date Nov 25, 2022

| **Client Sample ID** | | | **DG05_0_0.1** | **DG07_0_0.1** | **FT03_0_0.1** |
|---|---|---|---|---|---|
| **Sample Matrix** | | | **US Leachate** | **US Leachate** | **US Leachate** |
| **Eurofins Sample No.** | | | **S22-No0062716** | **S22-No0062717** | **S22-No0062718** |
| **Date Sampled** | | | **Oct 17, 2022** | **Oct 17, 2022** | **Oct 17, 2022** |
| Test/Reference | LOR | Unit | | | |
| **Heavy Metals** | | | | | |
| Lead | 0.01 | mg/L | 3.5 | 0.03 | 0.08 |
| **USA Leaching Procedure** | | | | | |
| Leachate Fluid[C01] | | comment | 1.0 | 1.0 | 1.0 |
| pH (initial) | 0.1 | pH Units | 7.6 | 7.5 | 6.7 |
| pH (off) | 0.1 | pH Units | 5.1 | 5.1 | 5.1 |
| pH (USA HCl addition) | 0.1 | pH Units | 2.3 | 2.4 | 2.2 |

## 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 |
|---|---|---|---|
| Heavy Metals | Sydney | Nov 25, 2022 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| USA Leaching Procedure | Sydney | Nov 25, 2022 | 14 Days |
| - Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes | | | |

eurofins

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Christchurch 7675
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IANZ# 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

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**Received:** Nov 25, 2022 8:47 AM
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**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Lead | USA Leaching Procedure |
|---|---|---|---|---|---|---|---|
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X |
| **External Laboratory** | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | |
| 1 | DG05_0_0.1 | Oct 17, 2022 | | US Leachate | S22-No0062716 | X | X |
| 2 | DG07_0_0.1 | Oct 17, 2022 | | US Leachate | S22-No0062717 | X | X |
| 3 | FT03_0_0.1 | Oct 17, 2022 | | US Leachate | S22-No0062718 | X | X |
| **Test Counts** | | | | | | 3 | 3 |

eurofins | Environment Testing

## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

### Units

**mg/kg:** milligrams per kilogram
**mg/L:** milligrams per litre
**µg/L:** micrograms per litre
**ppm:** parts per million
**ppb:** parts per billion
**%:** Percentage
**org/100 mL:** Organisms per 100 millilitres
**NTU:** Nephelometric Turbidity Units
**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
**CFU:** Colony forming unit

### Terms

| | |
|---|---|
| **APHA** | American Public Health Association |
| **COC** | Chain of Custody |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **CRM** | Certified Reference Material (ISO17034) - reported as percent recovery. |
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **LOR** | Limit of Reporting. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **SRA** | Sample Receipt Advice |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **TBTO** | Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits. |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **TEQ** | Toxic Equivalency Quotient or Total Equivalence |
| **QSM** | US Department of Defense Quality Systems Manual Version 5.4 |
| **US EPA** | United States Environmental Protection Agency |
| **WA DWER** | Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA |

### QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

### QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

**Quality Control Results**

| Test | Lab Sample ID | QA Source | Units | Result 1 | Result 2 | RPD | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Lead | | | mg/L | < 0.01 | | | 0.01 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Lead | | | % | 95 | | | 80-120 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Lead | S22-No0023503 | NCP | % | 93 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Lead | S22-No0062672 | NCP | mg/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 |
|---|---|
| C01 | Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other |

## Authorised by:

| | |
|---|---|
| Bonnie Pu | Analytical Services Manager |
| Charl Du Preez | Senior Analyst-Metal |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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# Appendix K Quality Assurance / Quality Control

| Lab Report Number | | | 936139 | 939621 | 936139 | 939621 | 936139 |
|---|---|---|---|---|---|---|---|
| Field ID | | | RINSATE | BLANK | BLANK | TRIP BLANK | TB |
| Matrix Type | | | water | water | water | water | water |
| Date | | | 28/10/2022 | 17/10/2022 | 28/10/2022 | 17/10/2022 | 28/10/2022 |
| | Unit | EQL | | | | | |
| **TPHs (NEPC 1999)** | | | | | | | |
| C6-C9 Fraction | µg/L | 20 | <20 | | | <20 | <20 |
| C10-C14 Fraction | µg/L | 50 | <50 | | | | |
| C15-C28 Fraction | µg/L | 100 | <100 | | | | |
| C29-C36 Fraction | µg/L | 100 | <100 | | | | |
| C10-C36 Fraction (Sum of Total) | µg/L | 100 | <100 | | | | |
| **TRHs (NEPC 2013)** | | | | | | | |
| C6-C10 | µg/L | 20 | <20 | | | <20 | <20 |
| C10-C16 | µg/L | 50 | <50 | | | | |
| C16-C34 | µg/L | 100 | <100 | | | | |
| C34-C40 | µg/L | 100 | <100 | | | | |
| C10-C40 (Sum of total) | µg/L | 100 | <100 | | | | |
| F1 (C6-C10 minus BTEX) | µg/L | 20 | <20 | | | <20 | <20 |
| F2 (C10-C16 less Naphthalene) | µg/L | 50 | <50 | | | | |
| **BTEXN** | | | | | | | |
| Benzene | ug/L | 1 | <1 | | | <1 | <1 |
| Toluene | ug/L | 1 | <1 | | | <1 | <1 |
| Ethylbenzene | ug/L | 1 | <1 | | | <1 | <1 |
| Xylene (o) | ug/L | 1 | <1 | | | <1 | <1 |
| Xylene (m & p) | ug/L | 2 | <2 | | | <2 | <2 |
| Xylene Total | ug/L | 3 | <3 | | | <3 | <3 |
| Naphthalene_VOC | µg/L | 10 | <10 | | | <10 | <10 |
| **PAH** | | | | | | | |
| Acenaphthene | ug/L | 1 | <1 | | | | |
| Acenaphthylene | ug/L | 1 | <1 | | | | |
| Anthracene | ug/L | 1 | <1 | | | | |
| Benz(a)anthracene | ug/L | 1 | <1 | | | | |
| Benzo(a)pyrene | ug/L | 1 | <1 | | | | |
| Benzo(b+j)fluoranthene | ug/L | 1 | <1 | | | | |
| Benzo(g,h,i)perylene | ug/L | 1 | <1 | | | | |
| Benzo(k)fluoranthene | ug/L | 1 | <1 | | | | |
| Chrysene | ug/L | 1 | <1 | | | | |
| Dibenz(a,h)anthracene | ug/L | 1 | <1 | | | | |
| Fluoranthene | ug/L | 1 | <1 | | | | |
| Fluorene | ug/L | 1 | <1 | | | | |
| Indeno(1,2,3-c,d)pyrene | ug/L | 1 | <1 | | | | |
| Naphthalene | µg/L | 1 | <1 | | | | |
| Phenanthrene | ug/L | 1 | <1 | | | | |
| Pyrene | ug/L | 1 | <1 | | | | |
| PAHs (Sum of total) | ug/L | 1 | <1 | | | | |
| **Metals & Metalloids** | | | | | | | |
| Arsenic | mg/L | 0.001 | <0.001 | | | | |
| Cadmium | mg/L | 0.0002 | <0.0002 | | | | |
| Chromium (III+VI) | mg/L | 0.001 | <0.001 | | | | |
| Copper | mg/L | 0.001 | <0.001 | | | | |
| Lead | mg/L | 0.001 | <0.001 | | | | |
| Mercury | mg/L | 0.0001 | <0.0001 | | | | |
| Nickel | mg/L | 0.001 | <0.001 | | | | |
| Zinc | mg/L | 0.005 | <0.005 | | | | |
| **PFAS** | | | | | | | |
| Perfluorobutanoic acid (PFBA) | ug/L | 0.005 | | <0.05 | <0.005 | | |
| Perfluoropentanoic acid (PFPeA) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorohexanoic acid (PFHxA) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluoroheptanoic acid (PFHpA) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorooctanoic acid (PFOA) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorononanoic acid (PFNA) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorodecanoic acid (PFDA) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluoroundecanoic acid (PFUnDA) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorododecanoic acid (PFDoDA) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorotridecanoic acid (PFTrDA) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorotetradecanoic acid (PFTeDA) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorooctane sulfonamide (FOSA) | ug/L | 0.005 | | <0.05 | <0.005 | | |
| N-Methyl perfluorooctane sulfonamide (NMeFOSA) | ug/L | 0.005 | | <0.05 | <0.005 | | |
| N-Ethyl perfluorooctane sulfonamide (NEtFOSA) | ug/L | 0.005 | | <0.05 | <0.005 | | |
| N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE) | ug/L | 0.005 | | <0.05 | <0.005 | | |
| N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE) | ug/L | 0.005 | | <0.05 | <0.005 | | |
| N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA) | ug/L | 0.005 | | <0.05 | <0.005 | | |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ug/L | 0.005 | | <0.05 | <0.005 | | |
| Perfluoropropanesulfonic acid (PFPrS) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorobutanesulfonic acid (PFBS) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluoropentanesulfonic acid (PFPeS) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorohexanesulfonic acid (PFHxS) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluoroheptane sulfonic acid (PFHpS) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorooctanesulfonic acid (PFOS) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorononanesulfonic acid (PFNS) | ug/L | 0.001 | | <0.01 | <0.001 | | |
| Perfluorodecanesulfonic acid (PFDS) | ug/L | 0.001 | | <0.01 | <0.001 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)** | **ug/L** | 0.001 | | <0.01 | <0.001 | | |
| **1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)** | **ug/L** | 0.005 | | <0.05 | <0.005 | | |
| **1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)** | **ug/L** | 0.001 | | <0.01 | <0.001 | | |
| **1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)** | **ug/L** | 0.001 | | <0.01 | <0.001 | | |
| **Sum of PFHxS and PFOS** | **ug/L** | 0.001 | | <0.01 | <0.001 | | |
| **Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*** | **ug/L** | 0.001 | | <0.01 | <0.001 | | |
| **Sum of US EPA PFAS (PFOS + PFOA)*** | **ug/L** | 0.001 | | <0.01 | <0.001 | | |
| **Sum of WA DWER PFAS (n=10)*** | **UG/L** | 0.005 | | <0.05 | <0.005 | | |
| **Sum of PFAS** | **ug/L** | 0.005 | | <0.1 | <0.005 | | |

**INSERT QAQC TABLE NAME**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

Field Duplicates (SOIL)
Filter: Lab_Report_Number in('933769','936139','938601','938609')

| Lab Report Number | 933769 | 933769 | | 933769 | 933769 | | 933769 | 308571 | | 933769 | 308571 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Field ID | DG01_0_0.1 | QC20221017_01 | RPD | DG02_0_0.1 | QC20221017_02 | RPD | DG01_0_0.1 | QA20221017-01 | RPD | DG02_0_0.1 | QA20221017-02 | RPD |
| Sampled Date/Time | 17/10/2022 | 17/10/2022 | | 17/10/2022 | 17/10/2022 | | 17/10/2022 | 17/10/2022 | | 17/10/2022 | 17/10/2022 | |

| Chem_Group | ChemName | Units | EQL | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Metals & Metalloids | | | | | | | | | | | | | | | |
| | Arsenic | mg/kg | 2 : 4 (Interlab) | **7.7** | **2.5** | **102** | 6.7 | 6.1 | 9 | **7.7** | **4** | **63** | 6.7 | 7 | 4 |
| | Cadmium | mg/kg | 0.4 | <0.4 | <0.4 | 0 | <0.4 | <0.4 | 0 | <0.4 | <0.4 | 0 | <0.4 | <0.4 | 0 |
| | Chromium (III+VI) | mg/kg | 5 : 1 (Interlab) | **27** | **<5** | **138** | 24 | 20 | 18 | **27** | **10** | **92** | 24 | 24 | 0 |
| | Copper | mg/kg | 5 : 1 (Interlab) | **16** | **<5** | **105** | 11 | 12 | 9 | 16 | 15 | 6 | 11 | 8 | 32 |
| | Lead | mg/kg | 5 : 1 (Interlab) | **31** | **6.8** | **128** | 21 | 24 | 13 | 31 | 28 | 10 | 21 | 20 | 5 |
| | Mercury | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Nickel | mg/kg | 5 : 1 (Interlab) | **12** | **<5** | **82** | 7.5 | 8.6 | 14 | **12** | **6** | **67** | 7.5 | 7 | 7 |
| | Zinc | mg/kg | 5 : 1 (Interlab) | 36 | 26 | 32 | 25 | 27 | 8 | **36** | **24** | **40** | 25 | 19 | 27 |
| TPHs (NEPC 1999) | | | | | | | | | | | | | | | |
| | C6-C9 Fraction | mg/kg | 20 : 25 (Interlab) | <20 | <20 | 0 | <20 | <20 | 0 | <20 | <25 | 0 | <20 | <25 | 0 |
| | C10-C14 Fraction | mg/kg | 20 : 50 (Interlab) | <20 | <20 | 0 | <20 | <20 | 0 | <20 | <50 | 0 | <20 | <50 | 0 |
| | C15-C28 Fraction | mg/kg | 50 : 100 (Interlab) | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <100 | 0 | <50 | <100 | 0 |
| | C29-C36 Fraction | mg/kg | 50 : 100 (Interlab) | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <100 | 0 | <50 | <100 | 0 |
| | C10-C36 Fraction (Sum of Total) | mg/kg | 50 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 |
| TRHs (NEPC 2013) | | | | | | | | | | | | | | | |
| | C6-C10 | mg/kg | 20 : 25 (Interlab) | <20 | <20 | 0 | <20 | <20 | 0 | <20 | <25 | 0 | <20 | <25 | 0 |
| | C10-C16 | mg/kg | 50 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 |
| | C16-C34 | mg/kg | 100 | <100 | <100 | 0 | <100 | <100 | 0 | <100 | <100 | 0 | <100 | <100 | 0 |
| | C34-C40 | mg/kg | 100 | <100 | <100 | 0 | <100 | <100 | 0 | <100 | <100 | 0 | <100 | <100 | 0 |
| | C10-C40 (Sum of total) | mg/kg | 100 : 50 (Interlab) | <100 | <100 | 0 | <100 | <100 | 0 | <100 | <50 | 0 | <100 | <50 | 0 |
| | F1 (C6-C10 minus BTEX) | mg/kg | 20 : 25 (Interlab) | <20 | <20 | 0 | <20 | <20 | 0 | <20 | <25 | 0 | <20 | <25 | 0 |
| | F2 (C10-C16 less Naphthalene) | mg/kg | 50 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 |
| BTEXN | | | | | | | | | | | | | | | |
| | Benzene | mg/kg | 0.1 : 0.2 (Interlab) | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.2 | 0 | <0.1 | <0.2 | 0 |
| | Toluene | mg/kg | 0.1 : 0.5 (Interlab) | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.5 | 0 | <0.1 | <0.5 | 0 |
| | Ethylbenzene | mg/kg | 0.1 : 1 (Interlab) | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <1 | 0 | <0.1 | <1 | 0 |
| | Xylene (o) | mg/kg | 0.1 : 1 (Interlab) | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <1 | 0 | <0.1 | <1 | 0 |
| | Xylene (m & p) | mg/kg | 0.2 : 2 (Interlab) | <0.2 | <0.2 | 0 | <0.2 | <0.2 | 0 | <0.2 | <2 | 0 | <0.2 | <2 | 0 |
| | Xylene Total | mg/kg | 0.3 : 1 (Interlab) | <0.3 | <0.3 | 0 | <0.3 | <0.3 | 0 | <0.3 | <1 | 0 | <0.3 | <1 | 0 |
| | Naphthalene_VOC | mg/kg | 0.5 : 1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <1 | 0 | <0.5 | <1 | 0 |
| PAH | | | | | | | | | | | | | | | |
| | Acenaphthene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Acenaphthylene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Anthracene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Benz(a)anthracene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Benzo(a)pyrene | mg/kg | 0.5 : 0.05 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.05 | 0 | <0.5 | <0.05 | 0 |
| | Benzo(b+j)fluoranthene | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | | | <0.5 | | |
| | Benzo(g,h,i)perylene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Benzo(k)fluoranthene | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | | | <0.5 | | |
| | Chrysene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | 0.1 | 0 | <0.5 | <0.1 | 0 |
| | Dibenz(a,h)anthracene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Fluoranthene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | 0.1 | 0 | <0.5 | <0.1 | 0 |
| | Fluorene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Indeno(1,2,3-c,d)pyrene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Naphthalene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Phenanthrene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | 0.2 | 0 | <0.5 | <0.1 | 0 |
| | Pyrene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | 0.1 | 0 | <0.5 | <0.1 | 0 |
| | PAHs (Sum of total) | mg/kg | 0.5 : 0.05 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | 0.5 | 0 | <0.5 | <0.05 | 0 |
| Organochlorine Pesticides | | | | | | | | | | | | | | | |
| | 4,4-DDE | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | a-BHC | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | b-BHC | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | d-BHC | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | g-BHC (Lindane) | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Aldrin | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Dieldrin | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Aldrin + Dieldrin | mg/kg | 0.05 | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | | | <0.05 | | |
| | Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | | | <0.1 | | |
| | DDT | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | DDD | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | DDT+DDE+DDD | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endosulfan I | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endosulfan II | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endosulfan sulphate | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endrin | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endrin aldehyde | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endrin ketone | mg/kg | 0.05 | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | | | <0.05 | | |
| | Heptachlor | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Heptachlor Epoxide | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Methoxychlor | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Toxaphene | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | | | <0.5 | | |
| Polychlorinated Biphenyls | | | | | | | | | | | | | | | |
| | Arochlor 1016 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1221 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1232 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1242 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1248 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1254 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1260 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | PCBs (Sum of total) | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| PFAS | | | | | | | | | | | | | | | |
| | Perfluorobutanoic acid (PFBA) | mg/kg | 0.005 : 0.0002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0002 | 0 | <0.005 | <0.0002 | 0 |
| | Perfluoropentanoic acid (PFPeA) | mg/kg | 0.005 : 0.0002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0002 | 0 | <0.005 | <0.0002 | 0 |
| | Perfluorohexanoic acid (PFHxA) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluorooctanoic acid (PFOA) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | 0.0002 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluorononanoic acid (PFNA) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluorodecanoic acid (PFDA) | mg/kg | 0.005 : 0.0005 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0005 | 0 | <0.005 | <0.0005 | 0 |
| | Perfluoroundecanoic acid (PFUnDA) | mg/kg | 0.005 : 0.0005 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0005 | 0 | <0.005 | <0.0005 | 0 |
| | Perfluorododecanoic acid (PFDoDA) | mg/kg | 0.005 : 0.0005 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0005 | 0 | <0.005 | <0.0005 | 0 |
| | Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.005 : 0.0005 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0005 | 0 | <0.005 | <0.0005 | 0 |
| | Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.005 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 |
| | Perfluorooctane sulfonamide (FOSA) | mg/kg | 0.005 : 0.001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.001 | 0 | <0.005 | <0.001 | 0 |
| | N-Methyl perfluorooctane sulfonamide (NMeFOSA) | mg/kg | 0.005 : 0.001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.001 | 0 | <0.005 | <0.001 | 0 |
| | N-Ethyl perfluorooctane sulfonamide (NEtFOSA) | mg/kg | 0.005 : 0.001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.001 | 0 | <0.005 | <0.001 | 0 |
| | N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE) | mg/kg | 0.005 : 0.001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.001 | 0 | <0.005 | <0.001 | 0 |
| | N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE) | mg/kg | 0.005 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 |
| | N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA) | mg/kg | 0.01 : 0.0002 (Interlab) | <0.01 | <0.01 | 0 | <0.01 | <0.01 | 0 | <0.01 | <0.0002 | 0 | <0.01 | <0.0002 | 0 |
| | N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | mg/kg | 0.01 : 0.0002 (Interlab) | <0.01 | <0.01 | 0 | <0.01 | <0.01 | 0 | <0.01 | <0.0002 | 0 | <0.01 | <0.0002 | 0 |
| | Perfluoropropanesulfonic acid (PFPrS) | mg/kg | 0.005 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | | | <0.005 | | |
| | Perfluorobutanesulfonic acid (PFBS) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluoropentanesulfonic acid (PFPeS) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluorohexanesulfonic acid (PFHxS) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluoroheptane sulfonic acid (PFHpS) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluorooctanesulfonic acid (PFOS) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | 0.0006 | 0 | <0.005 | 0.0001 | 0 |
| | Perfluorononanesulfonic acid (PFNS) | mg/kg | 0.005 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | | | <0.005 | | |
| | Perfluorodecanesulfonic acid (PFDS) | mg/kg | 0.005 : 0.0002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0002 | 0 | <0.005 | <0.0002 | 0 |
| | 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | 1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) | mg/kg | 0.01 : 0.0001 (Interlab) | <0.01 | <0.01 | 0 | <0.01 | <0.01 | 0 | <0.01 | <0.0001 | 0 | <0.01 | <0.0001 | 0 |
| | 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | mg/kg | 0.005 : 0.0002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0002 | 0 | <0.005 | <0.0002 | 0 |
| | 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | mg/kg | 0.005 : 0.0002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0002 | 0 | <0.005 | <0.0002 | 0 |
| | Sum of PFHxS and PFOS | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | 0.0006 | 0 | <0.005 | 0.0001 | 0 |
| | Sum of enHealth PFAS (PFHxS + PFOS + PFOA)* | mg/kg | 0.005 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | | | <0.005 | | |
| | Sum of US EPA PFAS (PFOS + PFOA)* | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | 0.0009 | 0 | <0.005 | 0.0001 | 0 |
| | Sum of WA DWER PFAS (n=10)* | mg/kg | 0.01 | <0.01 | <0.01 | 0 | <0.01 | <0.01 | 0 | <0.01 | | | <0.01 | | |
| | Sum of PFAS | mg/kg | 0.05 : 0.0001 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | 0.0009 | 0 | <0.05 | 0.0001 | 0 |
| Chlorinated Benzenes | | | | | | | | | | | | | | | |
| | Hexachlorobenzene | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 ( > 30 x EQL) )
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

**INSERT QAQC TABLE NAME**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

Field Duplicates (water)
Filter: SDG in('936139','933384')

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **SDG** | 936139 | 936139 | | 936139 | ENVIROLAB 2022-10-31T00:00:00 | | | |
| **Field ID** | MW01 | QC20221028 | **RPD** | MW01 | QA20221028 | **RPD** | | |
| **Sampled Date/Time** | 28/10/2022 | 28/10/2022 | | 28/10/2022 | 28/10/2022 | | | |

| Chem_ | ChemName | Units | EQL | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Metals & Metalloids | | | | | | | | | |
| | Arsenic (Filtered) | mg/l | 0.001 | <0.001 | 0.001 | 0 | <0.001 | <0.001 | 0 |
| | Cadmium (Filtered) | mg/l | 0.0002 : 0.0001 (Interlab) | <0.0002 | <0.0002 | 0 | <0.0002 | <0.0001 | 0 |
| | Chromium (III+VI) (Filtered) | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Copper (Filtered) | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Lead (Filtered) | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Mercury (Filtered) | mg/l | 0.0001 : 5e-005 (Interlab) | <0.0001 | <0.0001 | 0 | <0.0001 | <0.00005 | 0 |
| | Nickel (Filtered) | mg/l | 0.001 | 0.001 | 0.001 | 0 | **0.001** | **0.002** | **67** |
| | Zinc (Filtered) | mg/l | 0.005 : 0.001 (Interlab) | 0.007 | 0.007 | 0 | 0.007 | 0.005 | 33 |
| TPHs (NEPC 1999) | | | | | | | | | |
| | C6-C9 Fraction | mg/l | 0.02 : 0.01 (Interlab) | 0.03 | <0.02 | 40 | **0.03** | **<0.01** | **100** |
| | C10-C14 Fraction | mg/l | 0.05 | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| | C15-C28 Fraction | mg/l | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | C29-C36 Fraction | mg/l | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | C10-C36 Fraction (Sum of Total) | mg/l | 0.1 : 0.05 (Interlab) | <0.1 | <0.1 | 0 | <0.1 | <0.05 | 0 |
| TRHs (NEPC 2013) | | | | | | | | | |
| | C6-C10 | mg/l | 0.02 : 0.01 (Interlab) | **0.04** | **<0.02** | **67** | **0.04** | **<0.01** | **120** |
| | C10-C16 | mg/l | 0.05 | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| | C16-C34 | mg/l | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | C34-C40 | mg/l | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | C10-C40 (Sum of total) | mg/l | 0.1 : 0.05 (Interlab) | <0.1 | <0.1 | 0 | <0.1 | <0.05 | 0 |
| | F1 (C6-C10 minus BTEX) | mg/l | 0.02 : 0.01 (Interlab) | **0.04** | **<0.02** | **67** | **0.04** | **<0.01** | **120** |
| | F2 (C10-C16 less Naphthalene) | mg/l | 0.05 | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| BTEXN | | | | | | | | | |
| | Benzene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Toluene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Ethylbenzene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Xylene (o) | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Xylene (m & p) | mg/l | 0.002 | <0.002 | <0.002 | 0 | <0.002 | <0.002 | 0 |
| | Xylene Total | mg/l | 0.003 | <0.003 | <0.003 | 0 | <0.003 | | |
| | Naphthalene_VOC | mg/l | 0.01 : 0.001 (Interlab) | <0.01 | <0.01 | 0 | <0.01 | <0.001 | 0 |
| PAH | | | | | | | | | |
| | Acenaphthene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Acenaphthylene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Anthracene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Benz(a)anthracene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Benzo(a)pyrene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Benzo(b+j)fluoranthene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | | |
| | Benzo(g,h,i)perylene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Benzo(k)fluoranthene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | | |
| | Chrysene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Dibenz(a,h)anthracene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Fluoranthene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Fluorene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Indeno(1,2,3-c,d)pyrene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Naphthalene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Phenanthrene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Pyrene | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | PAHs (Sum of total) | mg/l | 0.001 | <0.001 | <0.001 | 0 | <0.001 | 0.0E0 | 0 |
| PFAS | | | | | | | | | |
| | Perfluorobutanoic acid (PFBA) | µg/L | 0.005 : 0.002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.02 | 0 |
| | Perfluoropentanoic acid (PFPeA) | µg/L | 0.001 : 0.002 (Interlab) | <0.001 | <0.001 | 0 | <0.001 | <0.002 | 0 |
| | Perfluorohexanoic acid (PFHxA) | µg/L | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Perfluoroheptanoic acid (PFHpA) | µg/L | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Perfluorooctanoic acid (PFOA) | µg/L | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Perfluorononanoic acid (PFNA) | µg/L | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Perfluorodecanoic acid (PFDA) | µg/L | 0.001 : 0.002 (Interlab) | <0.001 | <0.001 | 0 | <0.001 | <0.002 | 0 |
| | Perfluoroundecanoic acid (PFUnDA) | µg/L | 0.001 : 0.002 (Interlab) | <0.001 | <0.001 | 0 | <0.001 | <0.002 | 0 |
| | Perfluorododecanoic acid (PFDoDA) | µg/L | 0.001 : 0.005 (Interlab) | <0.001 | <0.001 | 0 | <0.001 | <0.005 | 0 |
| | Perfluorotridecanoic acid (PFTrDA) | µg/L | 0.001 : 0.01 (Interlab) | <0.001 | <0.001 | 0 | <0.001 | <0.01 | 0 |
| | Perfluorotetradecanoic acid (PFTeDA) | µg/L | 0.001 : 0.05 (Interlab) | <0.001 | <0.001 | 0 | <0.001 | <0.05 | 0 |
| | Perfluorooctane sulfonamide (FOSA) | µg/L | 0.005 : 0.01 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.01 | 0 |
| | N-Methyl perfluorooctane sulfonamide (NMeFOSA) | µg/L | 0.005 : 0.05 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.05 | 0 |
| | N-Ethyl perfluorooctane sulfonamide (NEtFOSA) | µg/L | 0.005 : 0.1 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.1 | 0 |
| | N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE) | µg/L | 0.005 : 0.05 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.05 | 0 |
| | N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE) | µg/L | 0.005 : 0.5 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.5 | 0 |
| | N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA) | µg/L | 0.005 : 0.002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.002 | 0 |
| | N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | µg/L | 0.005 : 0.002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.002 | 0 |
| | Perfluoropropanesulfonic acid (PFPrS) | µg/L | 0.001 | 0.007 | 0.007 | 0 | 0.007 | | |
| | Perfluorobutanesulfonic acid (PFBS) | µg/L | 0.001 | 0.017 | 0.016 | 6 | 0.017 | 0.018 | 6 |
| | Perfluoropentanesulfonic acid (PFPeS) | µg/L | 0.001 | 0.006 | 0.005 | 18 | 0.006 | 0.008 | 29 |
| | Perfluorohexanesulfonic acid (PFHxS) | µg/L | 0.001 | 0.007 | 0.007 | 0 | 0.007 | 0.009 | 25 |
| | Perfluoroheptane sulfonic acid (PFHpS) | µg/L | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | Perfluorooctanesulfonic acid (PFOS) | µg/L | 0.001 | 0.003 | 0.002 | 40 | **0.003** | **<0.001** | **100** |
| | Perfluorononanesulfonic acid (PFNS) | µg/L | 0.001 | <0.001 | <0.001 | 0 | <0.001 | | |
| | Perfluorodecanesulfonic acid (PFDS) | µg/L | 0.001 : 0.002 (Interlab) | <0.001 | <0.001 | 0 | <0.001 | <0.002 | 0 |
| | 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | µg/L | 0.001 | <0.001 | <0.001 | 0 | <0.001 | <0.001 | 0 |
| | 1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) | µg/L | 0.005 : 0.001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.001 | 0 |
| | 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | µg/L | 0.001 : 0.002 (Interlab) | <0.001 | <0.001 | 0 | <0.001 | <0.002 | 0 |
| | 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | µg/L | 0.001 : 0.002 (Interlab) | <0.001 | <0.001 | 0 | <0.001 | <0.002 | 0 |
| | Sum of PFHxS and PFOS | µg/L | 0.001 | 0.01 | 0.009 | 11 | 0.01 | 0.009 | 11 |
| | Sum of enHealth PFAS (PFHxS + PFOS + PFOA)* | µg/L | 0.001 | 0.01 | 0.009 | 11 | 0.01 | | |
| | Sum of US EPA PFAS (PFOS + PFOA)* | µg/L | 0.001 | **0.003** | **0.002** | **40** | **0.003** | **<0.001** | **100** |
| | Sum of WA DWER PFAS (n=10)* | UG/L | 0.005 | 0.027 | 0.025 | 8 | 0.027 | | |
| | Sum of PFAS | µg/L | 0.005 : 0.001 (Interlab) | 0.04 | 0.037 | 8 | 0.04 | 0.034 | 16 |

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 ( > 30 x EQL) )
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

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JBS&G 63325/ 149,576 (Rev A)
L04 - Lot 3 DSI Addendum

16 February 2023

Thomas Gianatti
Landcom
Senior Development Manager
Via email: tgianatti@landcom.nsw.gov.au

**Addendum DSI – Additional Investigation Open Space Land use- Precinct 3, Edmondson Park, NSW**

Dear Tom,

## 1. Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Landcom (the client) to provide environmental consultancy services for the combined contamination and geotechnical assessment for a portion of Precinct 3 of the Edmondson Park development site, located at Campbelltown Road, Edmondson Park, NSW (the site) as shown in **Figure 1**. The site is legally identified as Lots 3 and 5 and Part Lot 2 on DP1272931, totalling approximately 17.91 hectares (ha). The proposed public open space landuse, excluding the areas identified for general residential and road reserve areas are shown on **Figure 2**, with an approximate site area of 6.65 ha.

A Detailed Site Investigation (DSI) was completed by JBS&G (JBS&G 2023[1]) in the areas of the proposed open space land use, which identified an exceedance of lead impact in soil in sample DG05_0-0.2 (location as shown on **Figure 3**) located in the north-west portion of the site. This letter details the additional works completed to undertake an delineation investigation in the vicinity of DG05 to assess the extent of the identified lead impacted material.

The findings of these works have been provided in this letter as an addendum to the Detailed Site Investigation (DSI) previously provided by JBS&G (JBS&G 2023). This letter, as with the preceding DSI, has been prepared in general accordance with guidelines made or approved by the NSW Environmental Protection Authority (EPA).

## 2. Objective

The objective of this additional investigation was to assess the extent of lead impacted soil identified at location DG05 so as to assist with decisions on requirements for remediation/management of impacted material such that the site may be made suitable for its proposed future public open space land use.

## 3. Scope of Work

The scope of works for the additional investigation included:

- Detailed inspection of the ground conditions in the vicinity of DG05 to further evaluate indicators of the identified lead impacts;

[1] *Edmondson Park, Precinct 3, Lot 3, Detailed Site Investigation, Campbelltown Road, Edmondson Park*, 20 January 2023, (JBS&G 2023)

- Intrusive delineation investigations at 8 locations, at distances of approximately 5 m and 10 m spacing surrounding lead exceedance impacted soil at location DG05;
- Analysis of selected soil samples for potential contaminants of concern (COPCs) as identified in the Conceptual Site Model (CSM) presented in JBS&G (2023) including heavy metals, total recoverable hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethylbenzene and xylenes (BTEX), organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs) and asbestos; and
- Preparation of this addendum DSI letter documenting the findings.

## 4. Site Condition

### 4.1 Site Identification

The location of the site is shown in **Figure 1**, the site layout and observations are shown on **Figure 2**, and the sample locations are shown on **Figure 3**. The site details are summarised in **Table 2.1** below.

**Table 4.1: Summary Site Details**

| | | |
|---|---|---|
| **Lot/Deposited Plan (DP)** | Parts Lot 3 & Lot 5 DP1272931 | |
| **Address** | Campbelltown Road, Edmondson Park | |
| **Local Government Authority** | Liverpool City Council | |
| **Approximate MGA Coordinates (GDA94-MGA56)** | East: 301605.858<br>North: 6238642.289 | |
| **Site Zoning (State Environmental Planning Policy (Precincts—Western Parkland City) 2021)** | Lot 3<br>RE1: Public Recreation<br>SP2: Infrastructure (Classified Road & Substation) | Part Lot 5<br>RE1: Public Recreation |
| **Current Use** | Vacant Land | |
| **Previous Use** | Former Ingleburn Defence Site | |
| **Site Area** | Approximately 6.65 ha | |

### 4.2 Site Description

The investigation area was formerly part of the Ingleburn Defence Site (IDS), and is located to the north of Campbelltown Road and the east of Zouch Road. The investigation area, being part lot 3 and the north-western part of Lot 5, is an irregular shaped parcel of land of which the northern extent is bound by vacant and vegetated land comprising the Edmondson Regional Park, and Zouch Road and off-site electrical substation to the west. The southern site boundary comprises Campbelltown Road and to the eastern boundary, the residual parts of Precinct 3, comprising remainder Lot 5, being the area proposed for residential landuse and roadways.

A site inspection and delineation investigation works were undertaken by one of JBS&G's trained and experienced environmental consultants on the 21 December 2022. Observations of the current site conditions and layout are discussed below and photographs of general conditions taken during the inspection are presented in **Attachment 3**.

At the time of the inspection the majority of the investigation area surrounding DG05 was covered by vegetation including overgrown grass, shrubs and trees. There wasn't evidence of former buildings in the vicinity of the site and no presence of building debris was observed given amount of ground cover vegetation

No standing or flowing water was observed across the investigation area at the time of the investigation.

## 5. Methodology

Prior to intrusive works commencing at the investigation area, the following was undertaken:

- Development of site-specific Safe Work Method Statements (SWMS) and Job Risk Assessments (JRAs) for site work;
- Completion of a Dial Before You Dig (DBYD) search; and
- Clearance of intrusive sample locations via a professional accredited service locator.

### 5.1 Field Investigation

Field works were conducted on 21 December 2022 by one of JBS&Gs trained and experienced field scientists. A comprehensive inspection of the area within and surrounding the location of DG05 and 8 soil investigation locations were completed. The delineation sample locations are provided on **Figure 3**.

A comprehensive inspection of the area surrounding the location DG05 was completed and additional soil sampling was conducted via backhoe (DG05_N, DG05_E, DG05_S and DG05_W) at a spacing of approximately 5m and 10 m from DG05 to depths of approximately 0.5 m into underlying soils.

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination were noted. In this instance no staining, odours or asbestos containing materials (ACM) were observed. Test pit logs have been provided in **Attachment 4.**

Consistent with the methodology adopted in JBS&G (2023), soil samples were screened onsite during the works using a photo-ionisation detector (PID) to assess the potential presence of volatile organic compounds (VOCs). Calibration and decontamination certificates for the PID and other reusable equipment has been provided in **Attachment 5.**

Collected samples were immediately transferred to laboratory supplied sample jars/ bags. The sample jars were then transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was then completed and forwarded with the samples to the testing laboratory. Based upon field observations, samples were analysed in accordance with the laboratory schedule (**Table 5.1**).

Not all samples collected were analysed. All samples remain at the primary laboratory for a period of two months for possible future analysis (subject to holding times) if required following the receipt of sample results.

### 5.2 Laboratory Analysis

JBS&G contracted Eurofins | mgt Australia (Eurofins) as the primary laboratory, with the laboratory NATA accredited for the analysis undertaken. In addition, the laboratory was required to meet JBS&G's internal quality assurance/quality control (QA/QC) requirements. The completed primary analysis schedule is summarised in **Table 5.1**.

**Table 5.1: Laboratory Analytical Schedule**

| Item | No. of Sampling Location | Analyses |
|---|---|---|
| DG05 Delineation | 8 additional sampling locations | Lead – 8 samples |
| DG05 Waste Classification | 2 additional sample locations | Heavy Metals – 2 samples<br>TRH/BTEX – 2 samples<br>PAHs – 2 samples<br>OCPs/PCBs – 2 samples each<br>Asbestos – 2 samples (500 mL per NEPC 2013 + visual inspection) |

In addition to the above, a limited quality assurance/quality control (QA/QC) program was implemented to meet the data quality objectives as established for the DSI (JBS&G 2023).

## 6. Quality Assurance / Quality Control

Detailed discussion of the QA/QC assessment of the data set is included in **Attachment 6**.

Field and laboratory QA/QC sampling was conducted during the site assessment including collection of trip blank (TB) and trip spike (TS) samples.

The NATA certified laboratory reports indicated that the project laboratories were achieving levels of performance within their recommended control limits during the period when the samples from this program were analysed.

Assessment of duplicate and triplicate samples for COPC were completed as part of the original DSI (JBS&G 2023) which identified the data to be of an acceptable quality to support the investigation objectives.

Based on the field and laboratory QA/QC results, sample data are considered suitably reliable for this assessment.

## 7. Assessment Criteria

Assessment criteria as developed and documented in the DSI (JBS&G 2023) were used to assess the additional investigation results collected for this investigation. Assessment criteria values utilised are provided on **Table A** in **Attachment 7**.

In addition, consideration was given to the NSW EPA (2014) *Waste Classification Guidelines* as appropriate for characterisation of total soil and TCLP concentrations for samples as collected during this additional investigation.

## 8. Results

### 8.1 Observations

The soil investigation was undertaken on 21 December 2022. Eight investigation locations were advanced via test pit to a maximum depth of 0.5 m below ground surface (bgs) at locations as shown on **Figure 3**.

Fill material at encountered at the delineation locations comprised of dry brown clay materials with inclusions of rootlets, organic matter and trace levels of gravels. Additional fill materials were identified as a sandy clay at surface at SG05_N_0.5 and evidence of coal material at DG05_W_5.0. Fill materials were encountered at all locations and were observed from the surface to approximately 0.2 m below the surface. Fill did not include any significant amounts of anthropogenic inclusions, ACM, staining or odours.

The fill material was underlain by natural dry orange/red clay with trace inclusions of rootlets to the maximum depth of the completed test pits (0.5 m bgs). No seepage was identified within the test pits. No ACM fragments were observed to occur within the underlying natural clay material.

Additionally, no construction materials, rubble or other foreign materials were observed. Photographs of the site and underlying soil materials are included in **Attachment 3**.

### 8.2 Soil Analytical Results

Summary results for the soil analysis are provided in **Table A** of **Attachment 7**. Comparison of the analytical results with the waste classification criteria is provided in **Table B** of **Attachment 7** and further discussed in **Section 9.2**.

Laboratory reports and chain of custody documentation is provided in **Attachment 8**.

### 8.3 Heavy Metals

Heavy metals concentrations in all additional analysed samples were reported below the adopted human health and ecological criteria for public open space land use.

## 9. Additional Investigation Discussion

Based on the field and laboratory assessment outcomes, the following sections provide a discussion of the results in relation to the assessment objectives.

### 9.1 DG05 Extent of Lead in Soil Impact

Implementation of delineation test pits to the north, east, south and west of the existing DG05 test pit location where the DSI (JBS&G 2023) identified the presence of a lead exceedance in fill material has confirmed the extent of conditions that will require remediation/management to make the site suitable for the proposed open space land use.

As identified by the additional sampling and analytical testing completed on the natural sample DG05_0.2-0.3, the identified lead in soil impact is vertically limited to the surface fill material. Additional samples collected from a 5m distance from the JBS&G (2023) location identified the lead in soil impacts requiring remediation to be limited to an area less than these additional sampling locations, thereby establishing a 10 m by 10 m area of impacted fill material as shown in **Figure 4**.

### 9.2 Preliminary Waste Classification

Soil analytical results were compared to EPA (2014) Waste Classification Guidelines criteria, as presented in **Table B**. Contaminant concentrations of lead in sample DG05_0-0.2 exceeded GSW contaminant threshold (CT1) criteria and the Specific Contamination Concentration (SCC1) criteria for classification as GSW. As such, a TCLP extraction was performed on DH05_0-0.2 and analysed for lead. This This TCLP result was less than the TCLP1 value for lead.

As the original concentration was reported at levels greater than the SCC1 criteria, preliminary results identify that should the soil require off-site disposal, it could be classified as Restricted Solid Waste (RSW).

The classifications noted herein are preliminary only. Waste classification should be confirmed by a suitably qualified and experienced environmental consultant with appropriate documentation prior to removal of any soil for disposal, and additional sampling and analysis where required.

## 10. Conclusions and Recommendations

Based on the results of the assessment and subject to the limitations in **Attachment 1**, the following conclusions are presented with regard to the additional area investigation;

- The additional intrusive investigation in the vicinity of DG05 delineated the extent of the lead in soil hotspot at the site that will require management/remediation to make the site suitable for the proposed works. The delineated lateral extent of lead in soil impacts surrounding DG05 is shown on **Figure 5**, being approximately 10 m by 10 m in plan area, to the depth of the fill material (approximately 0.2 m below ground). On this basis, approximately 20 m3 of material will require remediation to address this hotspot.
- Based on preliminary analysis results, the impacted material is considered to comprise RSW for the purposes of off-site disposal. Should this be the selected remediation method, the material will require disposal to a facility licensed by the NSW EPA to accept this type of waste.

- No visible asbestos, asbestos fines or friable asbestos was observed on the site during works or reported via the laboratory.

Based on the conclusions of the investigation it is recommended that:

- Management/remediation requirements for the identified lead in soil contamination should be documented via preparation of a remedial action plan (RAP) for subsequent implementation prior to/in conjunction with subdivision development works; and
- During the proposed subdivision/development works, a construction environmental management plan (CEMP) is prepared (in conjunction with the RAP), which incorporates an unexpected finds protocol (UFP) to address any unexpected contamination conditions encountered during development of the investigation area.

Should you require clarification, please contact the undersigned on 02 8245 0300 or by email mdelandro@jbsg.com.au.

Yours sincerely:



Michelle Delandro
Senior Project Manager
**JBS&G Australia Pty Ltd**

Reviewed/Approved by:



Joanne Rosner
Senior Principal, Contaminated Land
**JBS&G Australia Pty Ltd**

Attachments:

1. Limitations
2. Figures
3. Photo Log
4. Bore Logs
5. Calibration and Decontamination
6. Quality Assurance / Quality Control
7. Tables
8. Chain of Custody and Laboratory Analytical Results

## Attachment 1 – Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquiries.

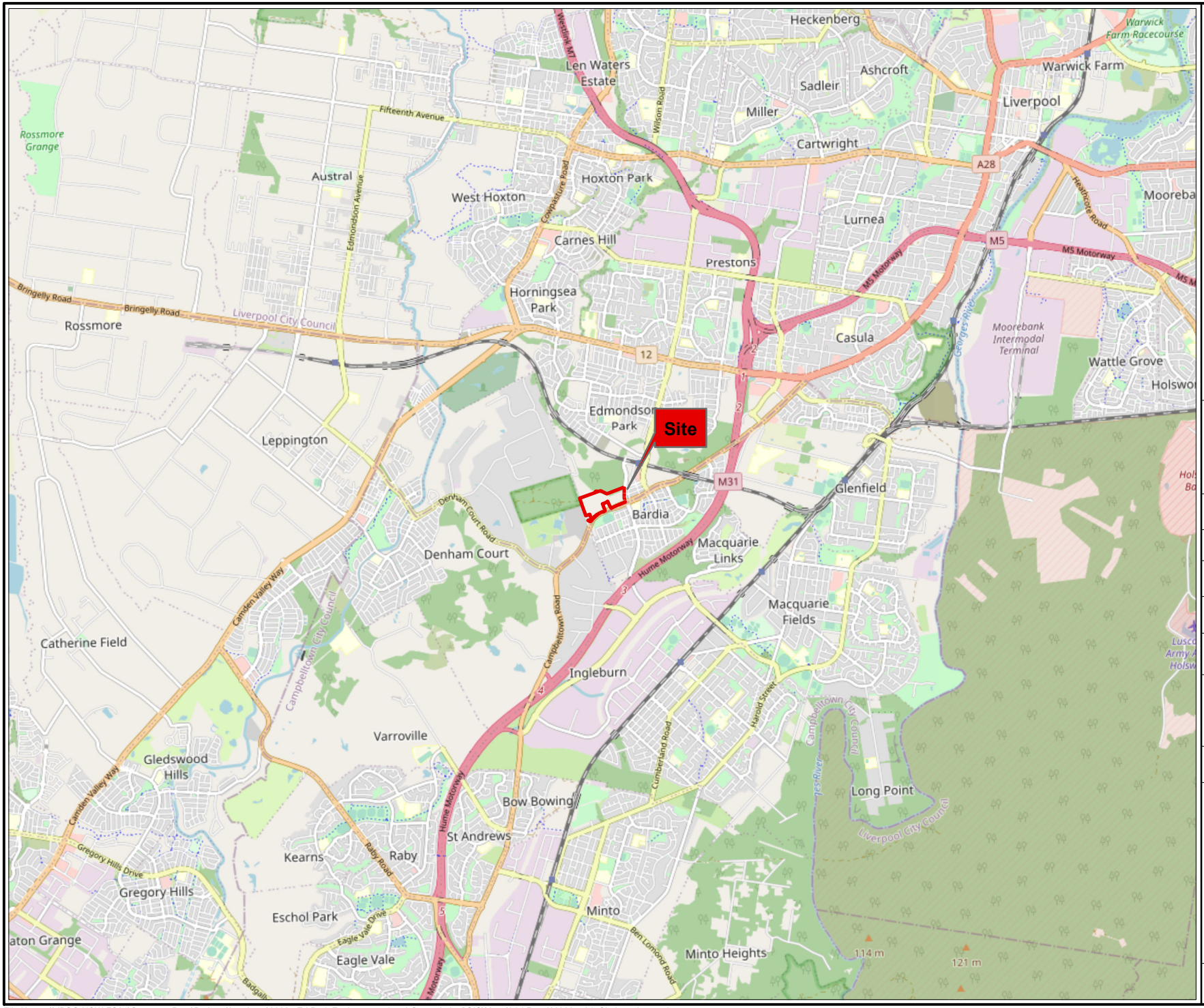
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the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

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

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

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

## Attachment 2 - Figures




**Legend**

Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: L04 Rev A | Date 11/01/2023 |
| Drawn By: YY/PA | Checked By: MD |
| Scale 1:80,000 | |

0 1,000 2,000

metres

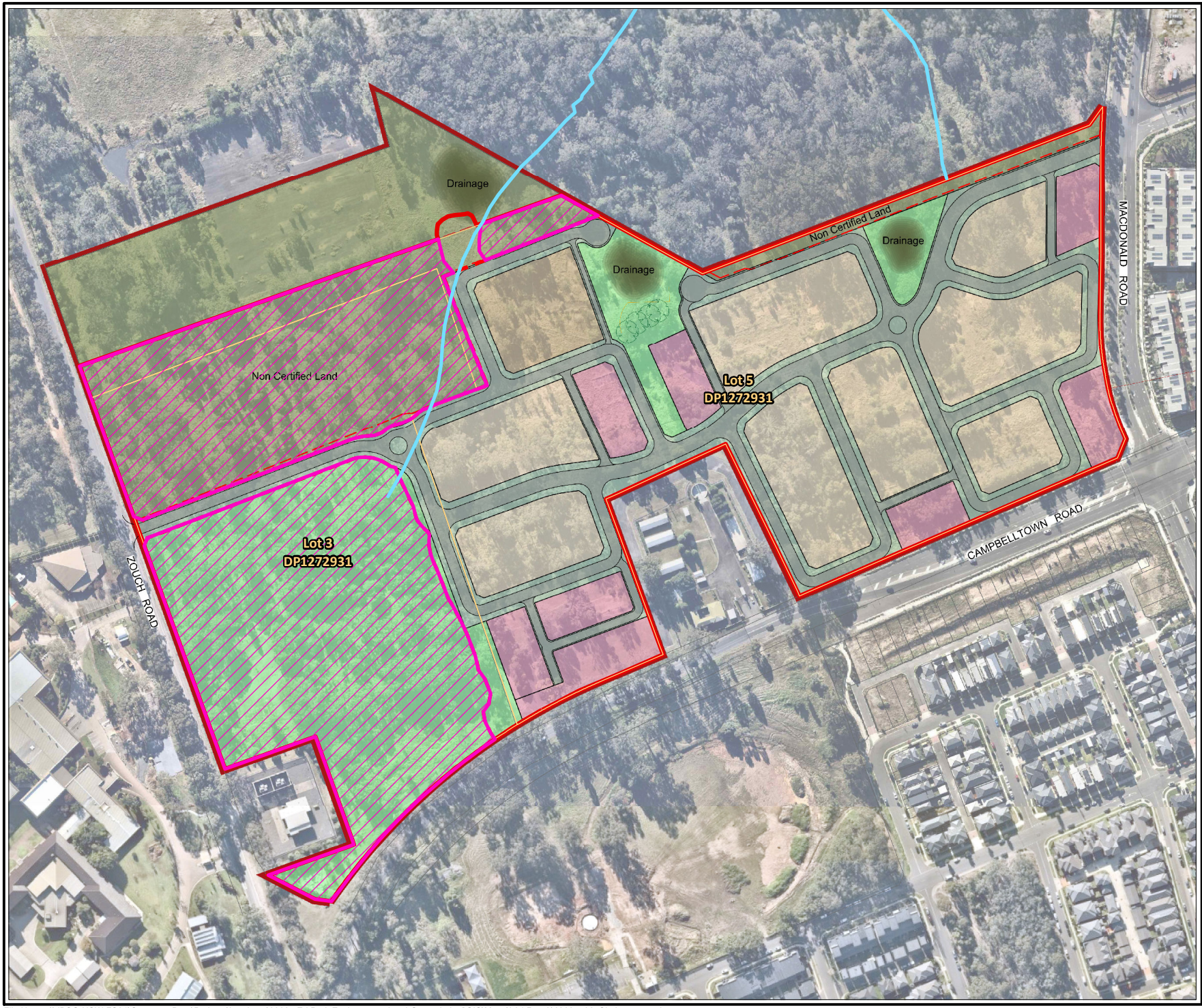
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**SITE LOCATION**

**FIGURE 1**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\L04 Rev A\63325_01_SiteLocation.mxd
Reference: Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA




**Legend**

- Approximate Site Boundary
- Stage Boundary
- Cadastre NSW, 2021
- Investigation Area
- Drainage Line

Urbanco (2022)
Conceptual Site Model Legend:

- Conceptual Site Boundary
- Non-Certified Land
- Terraces
- Residential Lots
- Green Spaces

JBS&G

| | |
|---|---|
| Job No: 63325 | |
| Client: Landcom | |
| Version: L04 Rev A | Date 17/01/2023 |
| Drawn By: YY/EP | Checked By: MD |

Scale 1:3,500

0 40 80
metres

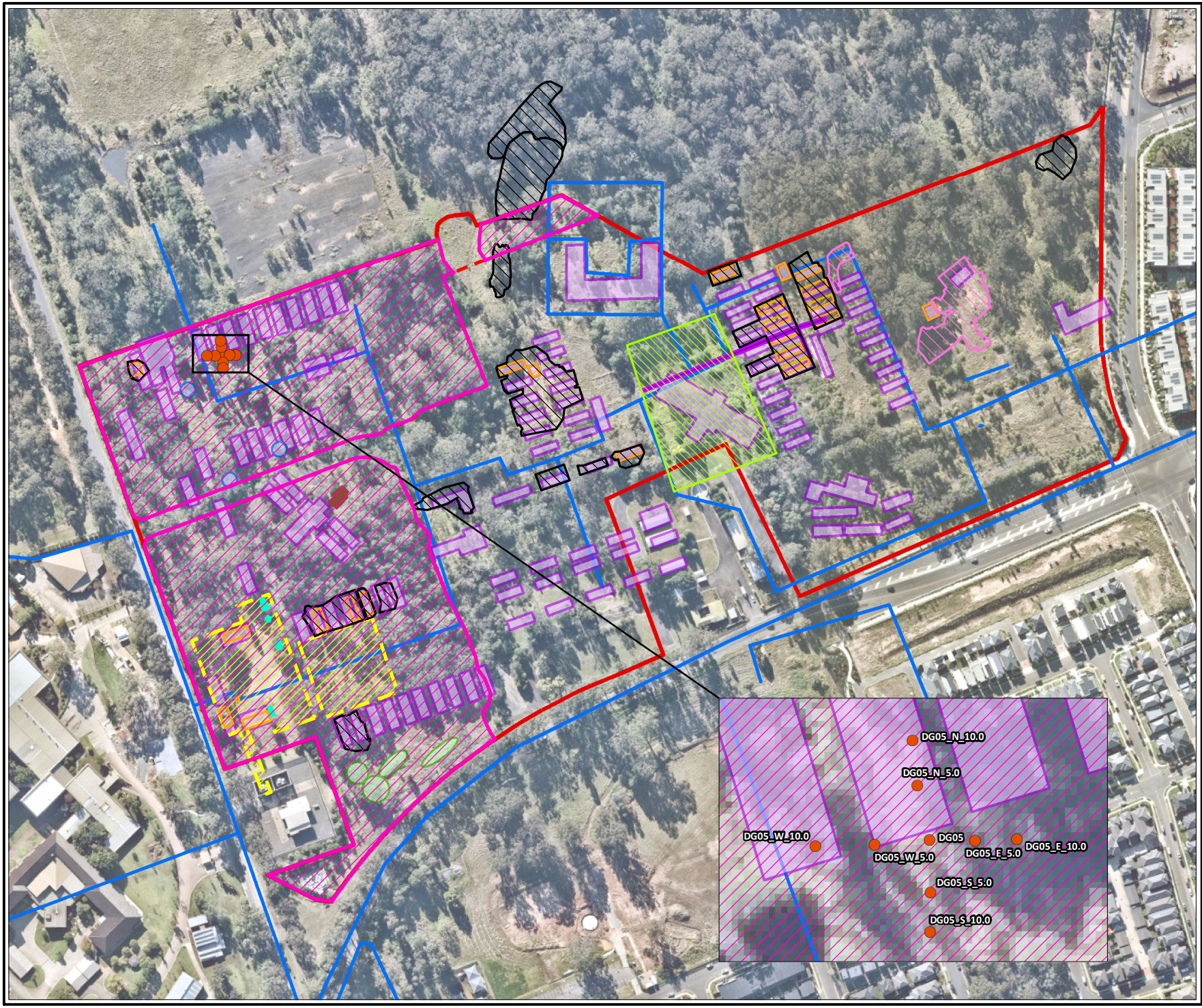
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**SITE LAYOUT AND INVESTIGATION AREA**

**FIGURE 2**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\L04 Rev A\63325_02_SiteLayout.mxd
Reference: www.nearmap.com - 20220604




**Legend**

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

**Site Features**

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile
- Hydrant Lines
- POL-F Investigation Area (URS, 2004)

**Validation Areas:**

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench

**Sample Location, JBS&G (2022)**

- Data Gap Sample

JBS&G

Job No: 63325

Client: Landcom

| Version: L04 Rev A | Date 17/01/2023 |
|---|---|
| Drawn By: YY/PA | Checked By: MD |

Scale 1:3,500

0 40 80

metres

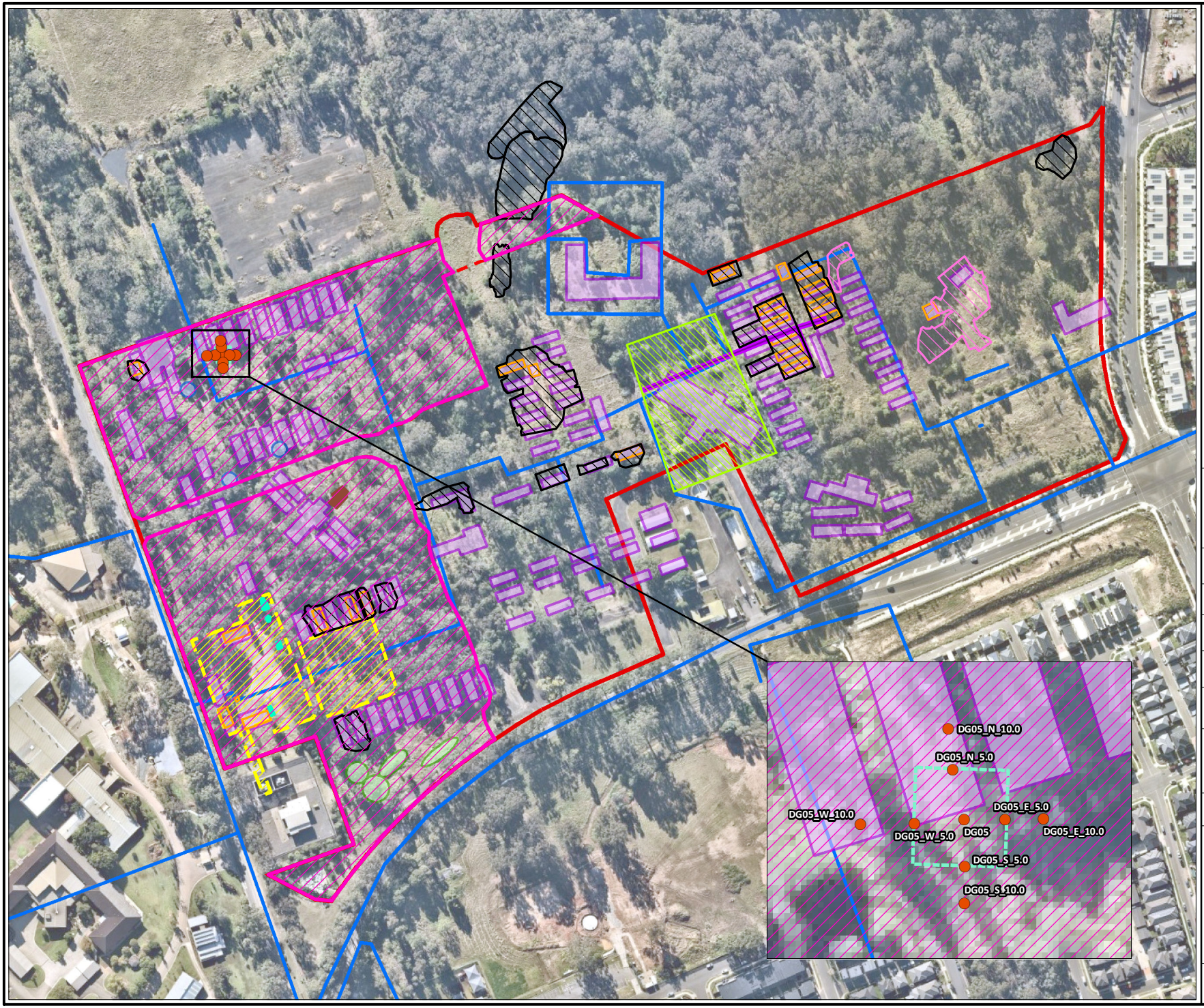
Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**SAMPLE LOCATIONS**

**FIGURE 3**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\L04 Rev A\63325_03_SampleLocations.mxd
Reference: www.nearmap.com - 20220604




**Legend**

- Approximate Site Boundary
- Stage Boundary
- Investigation Area

**Site Features**

- Historic Building Footprints
- Fly-Tipping Extent
- Stockpile
- Interpreted Extent of Lead Impact
- Hydrant Lines
- POL-F Investigation Area (URS, 2004)

**Validation Areas:**

- Sampled Building Footprints
- EOW Burn Pits
- Excavation Area
- GPR
- Interceptor Pit
- Scraped Area
- ACM Pipe Excavation Trench

**Sample Location, JBS&G (2022)**

- Data Gap Sample

JBS&G

Job No: 63325

Client: Landcom

| Version: L04 Rev A | Date 18/01/2023 |
|---|---|
| Drawn By: YY/PA | Checked By: MD |

Scale 1:3,500

0 40 80

metres

Coord. Sys. GDA 1994 MGA Zone 56

**Campbelltown Road, Edmondson Park, NSW**

**INTERPRETED EXTENT OF LEAD IMPACT**

**FIGURE 4**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Landcom\63325 Ed Park Environmental and Geotechnical\GIS\Maps\L04 Rev A\63325_04_InterpretedExtentOfLeadImpact.mxd
Reference: www.nearmap.com - 20220604

## Attachment 3 – Photo Log

## PHOTOGRAPH 1: DENSE VEGETATION AT DG05 (21/12/2022)



## PHOTOGRAPH 2: DENSE VEGETATION AT DG05 (21/12/2022)



## PHOTOGRAPH 3: DENSE VEGETATION AT DG05 (21/12/2022)



## PHOTOGRAPH 4: DENSE VEGETATION AT DG05 (21/12/2022)



JBS&G

Job No: 63325

Client: Landcom

| Version: L04 Rev A | Date: 16/01/2023 |
|---|---|
| Drawn By: MD | Checked By: JR |

Not to Scale

Coord. Sys n/a

**Partial Precinct 3**
**Lots 3 & 5 DP1272931**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**ATTACHMENT 3**

## PHOTOGRAPH 5: DG05_E_5 TEST PIT (21/12/2022)



## PHOTOGRAPH 6: DG05_S_5 TEST PIT (21/12/2022)



## PHOTOGRAPH 7: DG05_W_5 TEST PIT (21/12/2022)



## PHOTOGRAPH 8: DG05_N_5 TEST PIT (21/12/2022)



JBS&G

Job No: 63325

Client: Landcom

| Version: L04 Rev A | Date: 16/01/2023 |
|---|---|
| Drawn By: MD | Checked By: JR |

Not to Scale

Coord. Sys n/a

**Partial Precinct 3**
**Lots 3 & 5 DP1272931**
**Campbelltown Road,**
**Edmondson Park, NSW**

**PHOTOLOG**

**ATTACHMENT 3**

## Attachment 4 – Bore Logs

# TEST PIT DG05

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Coles
**Date** 17-Oct-22
**Plant** Backhoe
**Method**-

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Massimo Chapman

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.05<br>0.1<br>0.15<br>0.2 | | Fill | Fill - Silty CLAY, Brown, heterogeneous, Dry, high plasticity, Firm, Inclusion of rootlets/roots, trace Organic matte, trace rocks/gravels | DR | DG05-0-0.1 | 3.6 | No odours, staining or asbestos containing materials |
| | | 0.2<br>0.25<br>0.3<br>0.35<br>0.4<br>0.45<br>0.5 | | CH | Natural - CLAY, Orange/red: heterogeneous, Dry, high plasticity, Stiff, Inclusion of roots/rootlets, some wood ash | DR | DG05_0.20-0.30 | 1.8 | No odours, staining or asbestos containing materials |
| | | 0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95 | | | Termination Depth at: 0.50 m. | | | | |

**Comments:**

**Disclaimer** This log is intended for environmental not geotechnical purposes.
produced by ESlog.ESdat.net on 27 Jan 2023

# TEST PIT DG05_E_10.0

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Cole
**Date** 21-Dec-22
**Plant** Backhoe
**Method** Test Pit

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Andrew Cheok

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.05<br>0.1<br>0.15<br>0.2 | | Fill | Fill - CLAY, light brown, heterogeneous, dry, low plasticity, firm, inclusions of roots and rootlets. | DR | DG05_E_10.0_0.00-0.1 | 1.9 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.25<br>0.3<br>0.35<br>0.4<br>0.45<br>0.5 | | CH | Natural - CLAY, orange/red, heterogeneous, dry, high plasticity, stiff, inclusions of trace rootlets. | DR | DG05_E_10.0_0.20-0.3 | 5.3 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95 | | | Termination Depth at: 0.50 m. | | | | |

**Comments:**

# TEST PIT DG05_E_5.0

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Cole
**Date** 21-Dec-22
**Plant** Backhoe
**Method** Test Pit

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Andrew Cheok

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.05<br>0.1<br>0.15<br>0.2 | | Fill | Fill - CLAY, light brown, heterogeneous, dry, low plasticity, firm, inclusions of roots, rootlets and trace gravels. | DR | DG05_E_5.0_0.00-0.1( | 2.1 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.2<br>0.25<br>0.3<br>0.35<br>0.4<br>0.45<br>0.5 | | CH | Natural - CLAY, red/brown, heterogeneous, dry, high plasticity, stiff, inclusions of trace roots, and rootlets. | DR | DG05_E_5.0_0.20-0.3( | 8.4 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95 | | | Termination Depth at: 0.50 m. | | | | |

**Comments:**

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produced by ESlog.ESdat.net on 27 Jan 2023

# TEST PIT DG05_N_10.0

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Cole
**Date** 21-Dec-22
**Plant** Backhoe
**Method** Test Pit

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Andrew Cheok

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.05<br>0.1<br>0.15<br>0.2 | | Fill | Fill - CLAY, brown, heterogeneous, dry, non-plastic, stiff, inclusions of roots, rootlets and trace gravels. | DR | DG05_N_10.0_0.00-0.1 | 6 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.25<br>0.3<br>0.35<br>0.4<br>0.45<br>0.5 | | CH | Natural - CLAY, red, heterogeneous, dry, medium plasticity, stiff, inclusions of trace rootlets. | DR | DG05_N_10.0_0.20-0.3 | 9.6 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95 | | | Termination Depth at: 0.50 m. | | | | |

**Comments:**

**Disclaimer** This log is intended for environmental not geotechnical purposes.
produced by ESlog.ESdat.net on 27 Jan 2023

# TEST PIT DG05_N_5.0

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Cole
**Date** 21-Dec-22
**Plant** Backhoe
**Method** Test Pit

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Andrew Cheok

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.05<br>0.1<br>0.15<br>0.2<br>0.25<br>0.3<br>0.35<br>0.4<br>0.45<br>0.5 | | Fill | Fill - Sandy CLAY, orange/red, heterogeneous, dry, poorly graded, fine sand, dense | DR | DG05_N_5.0_0.00-0.1( | 8.7 | No Odours, Staining or Asbestos Containing Material. |
| | | | | Fill | Fill - CLAY, brown, heterogeneous, dry, low plasticity, stiff, inclusions of roots, rootlets and gravels. | DR | DG05_N_5.0_0.10-0.2( | 8.7 | No Odours, Staining or Asbestos Containing Material. |
| | | | | CH | Natural - CLAY, red, heterogeneous, dry, high plasticity, stiff, inclusions of trace rootlets. | DR | DG05_N_5.0_0.20-0.3( | 9.6 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95 | | | Termination Depth at: 0.50 m. | | | | |

**Comments:**

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# TEST PIT DG05_S_10.0

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Cole
**Date** 21-Dec-22
**Plant** Backhoe
**Method** Test Pit

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Andrew Cheok

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.05<br>0.1<br>0.15<br>0.2 | | Fill | Fill - CLAY, brown, heterogeneous, dry, low plasticity, firm, inclusions of roots, rootlets and decaying roots. | DR | DG05_S_10.0_0.00-0.1 | 7 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.25<br>0.3<br>0.35<br>0.4<br>0.45<br>0.5 | | CH | Natural - CLAY, red, heterogeneous, dry, high plasticity, stiff, inclusions of trace rootlets and trace gravels. | DR | DG05_S_10.0_0.20-0.3 | 7.6 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95 | | | Termination Depth at: 0.50 m. | | | | |

**Comments:**

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# TEST PIT DG05_S_5.0

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Cole
**Date** 21-Dec-22
**Plant** Backhoe
**Method** Test Pit

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Andrew Cheok

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.05<br>0.1<br>0.15<br>0.2 | | Fill | Fill - CLAY, brown, heterogeneous, dry, low plasticity, firm, inclusions of roots and rootlets. | DR | DG05_S_5.0_0.00-0.1( | 7 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.25<br>0.3<br>0.35<br>0.4<br>0.45<br>0.5 | | CH | Natural - CLAY, red, heterogeneous, dry, high plasticity, stiff, inclusions of some rootlets and trace wood ash. | DR | DG05_S_5.0_0.20-0.3( | 8.8 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95 | | | Termination Depth at: 0.50 m. | | | | |

**Comments:**

# TEST PIT DG05_W_10.0

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Cole
**Date** 21-Dec-22
**Plant** Backhoe
**Method** Test Pit

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Andrew Cheok

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.05<br>0.1<br>0.15<br>0.2 | | Fill | Fill - Gravelly CLAY, brown, heterogeneous, dry, low plasticity, firm, inclusions of roots, rootlets and gravels/rocks. | DR | DG05_W_10.0_0.00-0. | 5 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.25<br>0.3<br>0.35<br>0.4<br>0.45<br>0.5 | | CH | Natural - CLAY, red/orange, heterogeneous, dry, high plasticity, stiff, inclusions of trace rootlets. | DR | DG05_W_10.0_0.20-0. | 8 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95 | | | Termination Depth at: 0.50 m. | | | | |

**Comments:**

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# TEST PIT DG05_W_5.0

**Project Number** 63325
**Client** Landcom
**Project Name** Edmondson Park Environmental and Geotechnical
**Address** Campbelltown Road, Edmondson Park, NSW

**Contractor** Ken Cole
**Date** 21-Dec-22
**Plant** Backhoe
**Method** Test Pit

**Easting** N/A
**Northing** N/A
**Coordinate System** GDA94_MGA_zone_56
**Logged By** Andrew Cheok

| Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| Test Pit | | 0.05<br>0.1<br>0.15<br>0.2 | | Fill | Fill - Gravelly CLAY, brown, heterogeneous, dry, low plasticity, firm, inclusions of roots, rootlets, gravels and a coal layer under the grass. | DR | DG05_W_5.0_0.00-0.1 | 7.1 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.25<br>0.3<br>0.35<br>0.4<br>0.45<br>0.5 | | CH | Natural - CLAY, brown/orange, heterogeneous, dry, low plasticity, firm, inclusions of rootlets, some gravel and coal pieces. | DR | DG05_W_5.0_0.20-0.3 | 15.4 | No Odours, Staining or Asbestos Containing Material. |
| | | 0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95 | | | Termination Depth at: 0.50 m. | | | | |

**Comments:**

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## Attachment 5 - Calibration and Decontamination Documentation

# Field Equipment Calibration and Decontamination

| | |
|---|---|
| **PROJECT NAME:** ED PARK | **PROJECT NO:** 63325 |
| **FIELDWORK DATES:** 21/12 | **SAMPLERS:** A. CHEOK |
| **TYPE OF INVESTIGATION:** SOIL | **PROJECT MANAGER:** M. DELANORO |

**CALIBRATION SUMMARY**

| |
|---|
| **EQUIPMENT:** PID |
| **CALIBRATION STANDARD:** 100ppm Isobutylene |

| DATE | TIME | READING (ppm) | COMMENTS |
|---|---|---|---|
| 21/12 | 0915 | 0 | Zero Cal |
| | 0916 | 100 | 100 ppm Isobutylene |
| | 0917 | 102.1 | Bump test |
| | | | |
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**DECONTAMINATION SUMMARY**

| **EQUIPMENT:** | | | | |
|---|---|---|---|---|
| 1 | Was the equipment decontaminated appropriately prior to sampling at each location? | Y | N | NA |
| 2 | Was excess soil removed by scraping, brushing or wiping with disposable towels? | Y | N | NA |
| 3 | Was the equipment contaminated with grease, tar or similar material? | Y | N | NA |
| | If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane? | Y | N | NA |
| 4 | Was phosphate-free detergent used to wash the equipment? | Y | N | NA |
| 5 | Was the equipment rinsed with clean water? | Y | N | NA |
| 6 | Was the equipment then rinsed with deionised water? | Y | N | NA |
| 7 | Were all sample containers cleaned and acid or solvent washed prior to sample collection? | Y | N | NA |

**WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS**

NEW PAIR OF PFAS FREE NITRILE GLOVES FOR EACH LOCATION.


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# Expert Testing Services

ABN: 74 619 717 350
Contact: +61(4) 5111 0877
Email: sales@experttesting.com.au
9/171 Power Street, Glendenning NSW 2761


# Calibration and Service Report

| | | | | | |
|---|---|---|---|---|---|
| **Company:** | Expert Testing Services | **Manufacturer:** | Honeywell | **Serial #:** | 592-918929 |
| **Contact:** | Hire Department | **Instrument:** | MiniRAE 3000 | **Asset #:** | - |
| **Address:** | 9/171 Power Street, GLENDENNING NSW 2761 | **Model:** | PGM7320 | **Part #:** | - |
| | | **Configuration:** | VOC | **Sold:** | - |
| **Phone:** | 02 9730 2019 | **Wireless:** | - | **Last Cal:** | 10.11.2022 |
| **Fax:** | | **Network ID:** | - | **Job #:** | |
| **Email:** | rentals@experttesting.com.au | **Unit ID:** | - | **Cal Spec:** | Std |
| | | | | **Order #:** | EFT |

| Item | Test | Pass/Fail | Comments | Part Code | S/W |
|---|---|---|---|---|---|
| **Battery** | NiCd, NiMH, Dry cell, Li Ion | ✓ | | | |
| **Charger** | Charger, Power supply | ✓ | | | |
| | Cradle | ✓ | | | |
| **Pump** | Flow | ✓ | >500ml/min | | |
| **Filter** | Filter, fitting, etc | ✓ | | | |
| **Alarms** | Audible, visual, vibration | ✓ | | | |
| **Display** | Operation | ✓ | | | |
| **Switches** | Operation | ✓ | | | |
| **PCB** | Operation | ✓ | | | |
| **Connectors** | Condition | ✓ | | | |
| **Firmware** | Version | ✓ | Version: 2.16 | | |
| **Datalogger** | Operation | ✓ | | | |
| **Monitor Housing** | Condition | ✓ | | | |
| **Case** | Condition/Type | ✓ | | | |
| **Sensors** | | | | | |
| PID | Lamp | ✓ | | | |
| PID | Sensor | ✓ | | | |
| THP | Sensor | ✓ | | | |
| | | | | | |
| | | | | | |

**Engineer's Report**

Checked unit settings and configuration – okay
Unit allowed to stabilize and zero calibration performed as per manufacturers specifications
Calibration procedure written and performed to manufacturers specification using traceable gases.

## Calibration Certificate

| Sensor | Type | Serial No: | Span Gas | Concentration | Traceability Lot # | CF | Reading | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Zero | Span |
| PID | 10.6eV | S023050083R7 | Isobutylene | 100ppm | S104180-2 | | 0 | 100ppm |
| | | | | | | | | |
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| | | | | | | | | |

Calibrated/Repaired by: **Milenko Sisic** Date: **10.11.2022** Next Due: **10.05.2023**

## Attachment 6 – Quality Assurance / Quality Control

The QA/QC results for soil samples collected at the site are summarised in **Table A6** and discussed below. Laboratory reports are included in **Attachment 8**.

**Table A6 Summary of Quality Assurance / Quality Control Program**

| Data Quality Indicator | Frequency | Results | DQI met? |
|---|---|---|---|
| **Precision** | | | |
| Soil Blind duplicates (intra laboratory) | 2/35 samples | 0-138 % RPD<br>The primary and duplicate asbestos samples were in agreement. | Partial* |
| Soil Blind triplicates (inter laboratory) | 2/35 samples | 0-32 % RPD (soil chemical analysis)<br>The primary and duplicate samples analyzing asbestos were in agreement. | Partial* |
| Laboratory Duplicates | >1/lab batch | 0-67 % RPD | Partial* |
| **Accuracy** | | | |
| Surrogate spikes | All organic Analysis | 31-167 % Recovery* | Partial* |
| Laboratory Control Samples | >1/lab batch | Between 70-141 % Recovery | Partial* |
| Matrix spikes | >1/lab batch | Between 61-147 % recovery | Partial* |
| **Representativeness** | | | |
| Sampling appropriate for media and analytes | All media/Analytes | All sampling conducted in accordance with JBS&G procedures | Yes |
| Laboratory blanks | >1/lab batch | <LOR | Yes |
| Samples extracted and analysed within holding times. | n/a | All samples were extracted and analysed within holding times. | Yes |
| Trip spikes | 1/lab batch | 110-130 % Recovery | Yes |
| Trip blanks | 1/lab batch | <LOR | Yes |
| Rinsate blank | 1/lab batch | N/A | N/A |
| **Comparability** | | | |
| Standard operating procedures used for sample collection & handling | All samples | Field staff used same standard operating procedures throughout works | Yes |
| Standard analytical methods used | All samples | Standard analytical methods in accordance with JBS&G procedures were adopted | Yes |
| Consistent field conditions, sampling staff and laboratory analysis | All samples | Sampling was conducted by JBS&G field staff members using standard operating procedures in the same conditions throughout the works. The laboratory remained consistent throughout the investigation. | Yes |
| Limits of reporting appropriate and consistent | All samples | Limits of reporting were consistent and appropriate. | Yes |
| **Completeness** | | | |
| Soil description & COCs completed | All samples | All bore testpit logs and COCs were completed appropriately. | Yes |
| Appropriate documentation | All samples | All appropriate field documentation is included in the Appendices. | Yes |
| Satisfactory frequency/result for QA/QC samples | All samples | The QC results are considered adequate for the purposes of the investigation. | Yes |
| Data from critical samples is considered valid | All samples | Data from critical samples is considered valid. | Yes |
| Sensitivity | | | |
| Analytical methods and limits of recovery appropriate for media and the adopted site assessment criteria | All samples | Appropriate laboratory analysis methods and detection limits were considered to have been achieved during the field and laboratory phases of the investigation | Yes |

*Refer to QA/QC discussion on the following page.

**QA/QC Discussion**

**Precision**

Blind (intra-laboratory) and split (inter-laboratory) Duplicates

Soil field split (intra-laboratory) and soil field blind (inter-laboratory)duplicates were analysed at a rate of 2 per 35 primary samples which meets the required 1/20 DQI frequency.

Samples generally reported RPDs within the JBS&G acceptable limits with the exception of some constituents as summarised in **Attachment 6**. High RPDs in the duplicate samples can be expected when materials are heterogeneous and/or when analyte concentrations are close to limit of reporting (LOR). The elevated RPDs are considered to not represent field and/or laboratory sampling error, rather they confirm the heterogeneity of contaminant distribution within the subject samples.

Laboratory duplicates

All laboratory duplicates analysed all had RPDs within the acceptable range of less than 50% with the following exception:

- Copper within duplicate sample S22-De0053659 with a reported RPD of 67%.

The elevated RPDs are attributed geological heterogeneity in fill materials and/or the low detection limits reported. It is further noted that all concentrations were reported at concentrations below the adopted criteria.

**Accuracy**

Surrogate spikes

Soil surrogate spikes were conducted on all samples submitted for organic constituent analysis and generally all recoveries were reported within the JBS&G acceptable range (70-130 %), with the exception of several samples which were reported between 31-167 %.

The surrogate spike recoveries outside of the target range are considered to not affect the overall reliability of the data set as concentrations in samples were close to or below the laboratory's LOR and/or were generally within the laboratories NATA accredited limits (50%-150%). Spike recoveries outside of the NATA accredited limits are considered to not affect the accuracy of the data set, noting the primary constituents were generally reported below the laboratory LOR at the majority of locations, with contaminants reported significantly below the adopted site criteria.

INT was reported for surrogates in a number of samples where chromatographic interference did not allow the determination of surrogate recovery. The relevant samples were not identified to contain any detectable concentrations of COPCs within the analytical groups affected by the surrogate interference. As such, it is considered unlikely that the surrogate interference is indicative of potential failures to quantify COPC concentrations to a degree which would result in an incorrect decision being made with regards to site suitability.

Laboratory Control Samples

A sufficient number of laboratory control samples were analysed in which recoveries were generally within the preferred range (70-130 %). Four PFAS analyte laboratory control samples were outside the preferred range, however the recovery was within the laboratory acceptable limits (50 - 150 % recovery) under the laboratory's NATA accreditation.

Matrix Spikes

A sufficient number of matrix spikes were analysed within the soil samples and generally all recoveries were reported within the JBS&G acceptable range (70-130 %). The laboratory reported

matrix spike recovery for five analytes was outside of the recommended acceptance criteria, with an acceptable recovery obtained for the laboratory control sample indicating a sample matrix interference.

**Representativeness**

Sampling appropriate for media and analytes

All sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures. Soil sampling was conducted with the advancement of test pits, considered appropriate for the potential site contaminants.

Laboratory Blanks

At least one laboratory blank was analysed for each analyte with each batch of samples. All levels of analytes in laboratory blanks were below detection limits.

Trip Spikes

At least one set of trip spikes were analysed as part of the assessment. The recovery of trip spikes analysed were reported between 71-130% which is within JBS&G acceptable limits.

Trip Blanks

At least one set of trip blanks were analysed as part of the assessment. The trip blanks analysed reported all concentrations below the laboratory detection limits which meets JBS&G acceptance criteria.

Rinsate Samples

No re-usable equipment was used in this investigation, therefore, no rinsate sample was collected.

Holding times

All analyses have been extracted within holding times.

**Comparability**

Consistent JBS&G Field Personnel were used to collect samples throughout the project. Field works have been undertaken in accordance with JBS&G field operating procedures. All required field forms and sampling logs have been appropriately completed by sampling personnel.

**Completeness**

Documentation

All documentation was completed to the required standard. Chain of custody forms are provided with laboratory documentation included in **Attachment 8**.

Frequency for QA/QC Samples

The frequency of QA/QC samples is sufficient and meets the project DQI's.

**Soil QA/QC Conclusions**

The results of the field and laboratory QA/QC program indicates that the data obtained from this investigation generally met the predetermined DQIs or, where the DQIs were exceeded, did not indicate systematic sampling or analytical errors. On the basis of the results of the field and laboratory QA/QC program, the soil data is of an acceptable quality in order to achieve the objectives of the assessment.

**INSERT QAQC TABLE NAME**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

Field Duplicates (SOIL)
Filter: Lab_Report_Number in('933769','936139','938601','938609')

| Lab Report Number | 933769 | 933769 | | 933769 | 933769 | | 933769 | 308571 | | 933769 | 308571 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Field ID | DG01_0_0.1 | QC20221017_01 | RPD | DG02_0_0.1 | QC20221017_02 | RPD | DG01_0_0.1 | QA20221017-01 | RPD | DG02_0_0.1 | QA20221017-02 | RPD |
| Sampled Date/Time | 17/10/2022 | 17/10/2022 | | 17/10/2022 | 17/10/2022 | | 17/10/2022 | 17/10/2022 | | 17/10/2022 | 17/10/2022 | |

| Chem_Group | ChemName | Units | EQL | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Metals & Metalloids | | | | | | | | | | | | | | | |
| | Arsenic | mg/kg | 2 : 4 (Interlab) | **7.7** | **2.5** | **102** | 6.7 | 6.1 | 9 | **7.7** | **4** | **63** | 6.7 | 7 | 4 |
| | Cadmium | mg/kg | 0.4 | <0.4 | <0.4 | 0 | <0.4 | <0.4 | 0 | <0.4 | <0.4 | 0 | <0.4 | <0.4 | 0 |
| | Chromium (III+VI) | mg/kg | 5 : 1 (Interlab) | **27** | **<5** | **138** | 24 | 20 | 18 | **27** | **10** | **92** | 24 | 24 | 0 |
| | Copper | mg/kg | 5 : 1 (Interlab) | **16** | **<5** | **105** | 11 | 12 | 9 | 16 | 15 | 6 | 11 | 8 | 32 |
| | Lead | mg/kg | 5 : 1 (Interlab) | **31** | **6.8** | **128** | 21 | 24 | 13 | 31 | 28 | 10 | 21 | 20 | 5 |
| | Mercury | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Nickel | mg/kg | 5 : 1 (Interlab) | **12** | **<5** | **82** | 7.5 | 8.6 | 14 | **12** | **6** | **67** | 7.5 | 7 | 7 |
| | Zinc | mg/kg | 5 : 1 (Interlab) | 36 | 26 | 32 | 25 | 27 | 8 | **36** | **24** | **40** | 25 | 19 | 27 |
| TPHs (NEPC 1999) | | | | | | | | | | | | | | | |
| | C6-C9 Fraction | mg/kg | 20 : 25 (Interlab) | <20 | <20 | 0 | <20 | <20 | 0 | <20 | <25 | 0 | <20 | <25 | 0 |
| | C10-C14 Fraction | mg/kg | 20 : 50 (Interlab) | <20 | <20 | 0 | <20 | <20 | 0 | <20 | <50 | 0 | <20 | <50 | 0 |
| | C15-C28 Fraction | mg/kg | 50 : 100 (Interlab) | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <100 | 0 | <50 | <100 | 0 |
| | C29-C36 Fraction | mg/kg | 50 : 100 (Interlab) | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <100 | 0 | <50 | <100 | 0 |
| | C10-C36 Fraction (Sum of Total) | mg/kg | 50 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 |
| TRHs (NEPC 2013) | | | | | | | | | | | | | | | |
| | C6-C10 | mg/kg | 20 : 25 (Interlab) | <20 | <20 | 0 | <20 | <20 | 0 | <20 | <25 | 0 | <20 | <25 | 0 |
| | C10-C16 | mg/kg | 50 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 |
| | C16-C34 | mg/kg | 100 | <100 | <100 | 0 | <100 | <100 | 0 | <100 | <100 | 0 | <100 | <100 | 0 |
| | C34-C40 | mg/kg | 100 | <100 | <100 | 0 | <100 | <100 | 0 | <100 | <100 | 0 | <100 | <100 | 0 |
| | C10-C40 (Sum of total) | mg/kg | 100 : 50 (Interlab) | <100 | <100 | 0 | <100 | <100 | 0 | <100 | <50 | 0 | <100 | <50 | 0 |
| | F1 (C6-C10 minus BTEX) | mg/kg | 20 : 25 (Interlab) | <20 | <20 | 0 | <20 | <20 | 0 | <20 | <25 | 0 | <20 | <25 | 0 |
| | F2 (C10-C16 less Naphthalene) | mg/kg | 50 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 | <50 | <50 | 0 |
| BTEXN | | | | | | | | | | | | | | | |
| | Benzene | mg/kg | 0.1 : 0.2 (Interlab) | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.2 | 0 | <0.1 | <0.2 | 0 |
| | Toluene | mg/kg | 0.1 : 0.5 (Interlab) | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.5 | 0 | <0.1 | <0.5 | 0 |
| | Ethylbenzene | mg/kg | 0.1 : 1 (Interlab) | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <1 | 0 | <0.1 | <1 | 0 |
| | Xylene (o) | mg/kg | 0.1 : 1 (Interlab) | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <1 | 0 | <0.1 | <1 | 0 |
| | Xylene (m & p) | mg/kg | 0.2 : 2 (Interlab) | <0.2 | <0.2 | 0 | <0.2 | <0.2 | 0 | <0.2 | <2 | 0 | <0.2 | <2 | 0 |
| | Xylene Total | mg/kg | 0.3 : 1 (Interlab) | <0.3 | <0.3 | 0 | <0.3 | <0.3 | 0 | <0.3 | <1 | 0 | <0.3 | <1 | 0 |
| | Naphthalene_VOC | mg/kg | 0.5 : 1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <1 | 0 | <0.5 | <1 | 0 |
| PAH | | | | | | | | | | | | | | | |
| | Acenaphthene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Acenaphthylene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Anthracene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Benz(a)anthracene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Benzo(a)pyrene | mg/kg | 0.5 : 0.05 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.05 | 0 | <0.5 | <0.05 | 0 |
| | Benzo(b+j)fluoranthene | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | | | <0.5 | | |
| | Benzo(g,h,i)perylene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Benzo(k)fluoranthene | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | | | <0.5 | | |
| | Chrysene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | 0.1 | 0 | <0.5 | <0.1 | 0 |
| | Dibenz(a,h)anthracene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Fluoranthene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | 0.1 | 0 | <0.5 | <0.1 | 0 |
| | Fluorene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Indeno(1,2,3-c,d)pyrene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Naphthalene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | <0.1 | 0 | <0.5 | <0.1 | 0 |
| | Phenanthrene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | 0.2 | 0 | <0.5 | <0.1 | 0 |
| | Pyrene | mg/kg | 0.5 : 0.1 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | 0.1 | 0 | <0.5 | <0.1 | 0 |
| | PAHs (Sum of total) | mg/kg | 0.5 : 0.05 (Interlab) | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | 0.5 | 0 | <0.5 | <0.05 | 0 |
| Organochlorine Pesticides | | | | | | | | | | | | | | | |
| | 4,4-DDE | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | a-BHC | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | b-BHC | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | d-BHC | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | g-BHC (Lindane) | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Aldrin | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Dieldrin | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Aldrin + Dieldrin | mg/kg | 0.05 | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | | | <0.05 | | |
| | Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | | | <0.1 | | |
| | DDT | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | DDD | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | DDT+DDE+DDD | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endosulfan I | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endosulfan II | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endosulfan sulphate | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endrin | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endrin aldehyde | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Endrin ketone | mg/kg | 0.05 | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | | | <0.05 | | |
| | Heptachlor | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Heptachlor Epoxide | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Methoxychlor | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |
| | Toxaphene | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | <0.5 | | | <0.5 | | |
| Polychlorinated Biphenyls | | | | | | | | | | | | | | | |
| | Arochlor 1016 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1221 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1232 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1242 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1248 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1254 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | Arochlor 1260 | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| | PCBs (Sum of total) | mg/kg | 0.1 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| PFAS | | | | | | | | | | | | | | | |
| | Perfluorobutanoic acid (PFBA) | mg/kg | 0.005 : 0.0002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0002 | 0 | <0.005 | <0.0002 | 0 |
| | Perfluoropentanoic acid (PFPeA) | mg/kg | 0.005 : 0.0002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0002 | 0 | <0.005 | <0.0002 | 0 |
| | Perfluorohexanoic acid (PFHxA) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluoroheptanoic acid (PFHpA) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluorooctanoic acid (PFOA) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | 0.0002 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluorononanoic acid (PFNA) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluorodecanoic acid (PFDA) | mg/kg | 0.005 : 0.0005 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0005 | 0 | <0.005 | <0.0005 | 0 |
| | Perfluoroundecanoic acid (PFUnDA) | mg/kg | 0.005 : 0.0005 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0005 | 0 | <0.005 | <0.0005 | 0 |
| | Perfluorododecanoic acid (PFDoDA) | mg/kg | 0.005 : 0.0005 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0005 | 0 | <0.005 | <0.0005 | 0 |
| | Perfluorotridecanoic acid (PFTrDA) | mg/kg | 0.005 : 0.0005 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0005 | 0 | <0.005 | <0.0005 | 0 |
| | Perfluorotetradecanoic acid (PFTeDA) | mg/kg | 0.005 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 |
| | Perfluorooctane sulfonamide (FOSA) | mg/kg | 0.005 : 0.001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.001 | 0 | <0.005 | <0.001 | 0 |
| | N-Methyl perfluorooctane sulfonamide (NMeFOSA) | mg/kg | 0.005 : 0.001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.001 | 0 | <0.005 | <0.001 | 0 |
| | N-Ethyl perfluorooctane sulfonamide (NEtFOSA) | mg/kg | 0.005 : 0.001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.001 | 0 | <0.005 | <0.001 | 0 |
| | N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE) | mg/kg | 0.005 : 0.001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.001 | 0 | <0.005 | <0.001 | 0 |
| | N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE) | mg/kg | 0.005 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 |
| | N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA) | mg/kg | 0.01 : 0.0002 (Interlab) | <0.01 | <0.01 | 0 | <0.01 | <0.01 | 0 | <0.01 | <0.0002 | 0 | <0.01 | <0.0002 | 0 |
| | N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | mg/kg | 0.01 : 0.0002 (Interlab) | <0.01 | <0.01 | 0 | <0.01 | <0.01 | 0 | <0.01 | <0.0002 | 0 | <0.01 | <0.0002 | 0 |
| | Perfluoropropanesulfonic acid (PFPrS) | mg/kg | 0.005 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | | | <0.005 | | |
| | Perfluorobutanesulfonic acid (PFBS) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluoropentanesulfonic acid (PFPeS) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluorohexanesulfonic acid (PFHxS) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluoroheptane sulfonic acid (PFHpS) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | Perfluorooctanesulfonic acid (PFOS) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | 0.0006 | 0 | <0.005 | 0.0001 | 0 |
| | Perfluorononanesulfonic acid (PFNS) | mg/kg | 0.005 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | | | <0.005 | | |
| | Perfluorodecanesulfonic acid (PFDS) | mg/kg | 0.005 : 0.0002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0002 | 0 | <0.005 | <0.0002 | 0 |
| | 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0001 | 0 | <0.005 | <0.0001 | 0 |
| | 1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) | mg/kg | 0.01 : 0.0001 (Interlab) | <0.01 | <0.01 | 0 | <0.01 | <0.01 | 0 | <0.01 | <0.0001 | 0 | <0.01 | <0.0001 | 0 |
| | 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | mg/kg | 0.005 : 0.0002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0002 | 0 | <0.005 | <0.0002 | 0 |
| | 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | mg/kg | 0.005 : 0.0002 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | <0.0002 | 0 | <0.005 | <0.0002 | 0 |
| | Sum of PFHxS and PFOS | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | 0.0006 | 0 | <0.005 | 0.0001 | 0 |
| | Sum of enHealth PFAS (PFHxS + PFOS + PFOA)* | mg/kg | 0.005 | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | | | <0.005 | | |
| | Sum of US EPA PFAS (PFOS + PFOA)* | mg/kg | 0.005 : 0.0001 (Interlab) | <0.005 | <0.005 | 0 | <0.005 | <0.005 | 0 | <0.005 | 0.0009 | 0 | <0.005 | 0.0001 | 0 |
| | Sum of WA DWER PFAS (n=10)* | mg/kg | 0.01 | <0.01 | <0.01 | 0 | <0.01 | <0.01 | 0 | <0.01 | | | <0.01 | | |
| | Sum of PFAS | mg/kg | 0.05 : 0.0001 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | 0.0009 | 0 | <0.05 | 0.0001 | 0 |
| Chlorinated Benzenes | | | | | | | | | | | | | | | |
| | Hexachlorobenzene | mg/kg | 0.05 : 0.1 (Interlab) | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | <0.05 | <0.1 | 0 | <0.05 | <0.1 | 0 |

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 ( > 30 x EQL) )
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

## Attachment 7 - Tables

**Table A: Additional Soil Investigation Results**
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

| | | | | | Metals & Metalloids | | | | | | | | TPHs (NEPC 1999) | | | | | TRHs (NEPC 2013) | | | | | | | BTEXN | | | | | | | PAH | | | | | | | |

**Table A: Additional Soil Investigation Results**
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

| | | | | Organochlorine Pesticides | | | | | | | | | | | | | | | | | | | | | Polychlorinated Biphenyls | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 4,4-DDE | a-BHC | b-BHC | d-BHC | g-BHC (Lindane) | Aldrin | Dieldrin | Aldrin + Dieldrin | Chlordane | DDT | DDD | DDT+DDE+DDD | Endosulfan I | Endosulfan II | Endosulfan sulphate | Endrin | Endrin aldehyde | Endrin ketone | Heptachlor | Heptachlor Epoxide | Methoxychlor | Toxaphene | Arochlor 1016 | Arochlor 1221 | Arochlor 1232 | Arochlor 1242 | Arochlor 1248 | Arochlor 1254 | Arochlor 1260 | ΣCBs (Sum of total) |
| | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | | | | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.1 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.5 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| NEPC 2013 EIL, Site Specific | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | | | | | | | | | | | 10 | 70 | | | 400 | | | | 20 | | | 10 | | 400 | 30 | | | | | | | | 1 |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 General Solid Waste CT1 (No Leaching) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | <50 |
| **Field_ID** | **Material Type** | **Sampled_Date_Time** | **Lab_Report_Number** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DG05_0_0.1 | Fill | 17/10/2022 | 933769 | 0.07 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | <0.05 | <0.05 | 0.07 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.5 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| DG05-0-0.1 | Fill | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_0.2_0.3 | Natural | 17/10/2022 | 945947 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_E_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_E_5.0_0-0.1 | Fill | 21/12/2022 | 952797 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.5 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| DG05_N_5.0_0.1-0.2 | Fill | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_N_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_S_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_S_5.0_0-0.1 | Fill | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_W_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_W_5.0_0-0.1 | Fill | 21/12/2022 | 952797 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.5 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |

**Table A: Additional Soil Investigation Results**
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

| | PFAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Chlorinated Benzenes | PA VIC - IWRG62 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Perfluorobutanoic acid (PFBA) | Perfluoropentanoic acid (PFPeA) | Perfluorohexanoic acid (PFHxA) | Perfluoroheptanoic acid (PFHpA) | Perfluorooctanoic acid (PFOA) | Perfluorononanoic acid (PFNA) | Perfluorodecanoic acid (PFDA) | Perfluoroundecanoic acid (PFUnDA) | Perfluorododecanoic acid (PFDoDA) | Perfluorotridecanoic acid (PFTrDA) | Perfluorotetradecanoic acid (PFTeDA) | Perfluorooctane sulfonamide (FOSA) | N-Methyl perfluorooctane sulfonamide (NMeFOSA) | N-Ethyl perfluorooctane sulfonamide (NEtFOSA) | N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE) | N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE) | N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA) | N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | Perfluoropropanesulfonic acid (PFPrS) | Perfluorobutanesulfonic acid (PFBS) | Perfluoropentanesulfonic acid (PFPeS) | Perfluorohexanesulfonic acid (PFHxS) | Perfluoroheptane sulfonic acid (PFHpS) | Perfluorooctanesulfonic acid (PFOS) | Perfluorononanesulfonic acid (PFNS) | Perfluorodecanesulfonic acid (PFDS) | 1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTSA) | 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTSA) | 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTSA) | 1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2 FTSA) | Sum of PFHxS and PFOS | Sum of enHealth PFAS (PFHxS + PFOS + PFOA)* | Sum of US EPA PFAS (PFOS + PFOA)* | Sum of WA DWER PFAS (n=10)* | Sum of PFAS | Hexachlorobenzene | Organochlorine Pesticides EPAVic | Other Organochlorine Pesticides EPAVic |
| | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.01 | 0.01 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.01 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.01 | 0.05 | 0.05 | 0.1 | 0.1 |
| NEPC 2013 EIL, Site Specific | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 10 | |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | 10 | | | | | | | | | | | | | | | | | | 1 | | | 1 | | | | | | | | 1 | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | 10 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| NSW 2014 General Solid Waste CT1 (No Leaching) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Field_ID** | **Material Type** | **Sampled_Date_Time** | **Lab_Report_Number** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DG05_0_0.1 | Fill | 17/10/2022 | 933769 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 | <0.05 | <0.1 | <0.1 |
| DG05-0-0.1 | Fill | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_0.2_0.3 | Natural | 17/10/2022 | 945947 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_E_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_E_5.0_0-0.1 | Fill | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.1 | <0.1 |
| DG05_N_5.0_0.1-0.2 | Fill | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_N_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_S_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_S_5.0_0-0.1 | Fill | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_W_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_W_5.0_0-0.1 | Fill | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | <0.05 | <0.05 | <0.1 | <0.1 |

**Table A: Additional Soil Investigation Results**
Project Number: 63325
Project Name: Edmondson Park Environmental and Geotechnical

| | | | | Asbestos - Eurofins | | | | | | | | | | | | | | | | | | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Approximate Sample Mass | Asbestos Sample Dimensions | Mass ACM | Mass Asbestos in ACM | Asbestos from ACM in Soil | Mass FA | Mass Asbestos in FA | Mass AF | Mass asbestos in AF | Asbestos from FA & AF in Soil | Mass Asbestos in FA & AF | ACM - Comment | FA- Comment | AF - Comment | Organic Fibres - Comment | Respirable Fibres - Comment | Synthetic Fibres - Comment | Asbestos Reported Result | Moisture Content (dried @ 103°C) |
| | | | | g | Comment | g | g | % (w/w) | g | g | g | g | % (w/w) | g | Comment | Comment | Comment | Comment | Comment | Comment | Comment | % |
| EQL | | | | | | | | | | | | | | | | | | | | | | 1 |
| NEPC 2013 EIL, Site Specific | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Rec C Soil | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Rec C Soil HSL for Asbestos in Soil | | | | | | | | 0.02 | | | | | 0.001 | | | | | | | | | |
| PFAS NEMP 2020 Table 2 Health Public open space | | | | | | | | | | | | | | | | | | | | | | |
| PFAS NEMP 2020 Table 3 Interim EDE All land uses | | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 General Solid Waste CT1 (No Leaching) | | | | | | | | | | | | | | | | | | | | | | |
| **Field_ID** | **Material Type** | **Sampled_Date_Time** | **Lab_Report_Number** | | | | | | | | | | | | | | | | | | | |
| DG05_0_0.1 | Fill | 17/10/2022 | 933769 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 14 |
| DG05-0-0.1 | Fill | 17/10/2022 | 938609 | 513 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Nil | Nil | Nil | Nil | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - |
| DG05_0.2_0.3 | Natural | 17/10/2022 | 945947 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 22 |
| DG05_E_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 17 |
| DG05_E_5.0_0-0.1 | Fill | 21/12/2022 | 952797 | 516 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Nil | Nil | Nil | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | 6.2 |
| DG05_N_5.0_0.1-0.2 | Fill | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 8.6 |
| DG05_N_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 17 |
| DG05_S_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 19 |
| DG05_S_5.0_0-0.1 | Fill | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 12 |
| DG05_W_5.0_0.2-0.3 | Natural | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 16 |
| DG05_W_5.0_0-0.1 | Fill | 21/12/2022 | 952797 | 778 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Nil | Nil | Nil | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | 3.9 |

**Table B: Lot 3 Addendum Soil Waste Classification Results**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | Metals & Metalloids | | | | | | | | TPHs (NEPC 1999) | | | | | TRHs (NEPC 2013) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Arsenic | Cadmium | Chromium (III+VI) | Copper | Lead | Mercury | Nickel | Zinc | C6-C9 Fraction | C10-C14 Fraction | C15-C28 Fraction | C29-C36 Fraction | C10-C36 Fraction (Sum of Total) | C6-C10 | C10-C16 | C16-C34 | C34-C40 | C10-C40 (Sum of total) | F1 (C6-C10 minus BTEX) | F2 (C10-C16 less Naphthalene) |
| | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | 2 | 0.4 | 5 | 5 | 5 | 0.1 | 5 | 5 | 20 | 20 | 50 | 50 | 50 | 20 | 50 | 100 | 100 | 100 | 20 | 50 |
| NSW 2014 General Solid Waste CT1 (No Leaching) | 100 | 20 | 100 | | 100 | 4 | 40 | | 650 | | | | 10000 | | | | | | | |
| NSW 2014 General Solid Waste SCC1 (with leached) | 500 | 100 | 1900 | | 1500 | 50 | 1050 | | 650 | | | | 10000 | | | | | | | |
| NSW 2014 Restricted Solid Waste CT2 (No Leaching) | 400 | 80 | 400 | | 400 | 16 | 160 | | 2600 | | | | 40000 | | | | | | | |
| NSW 2014 Restricted Solid Waste SCC2 (with leached) | 2000 | 400 | 7600 | | 6000 | 200 | 4200 | | 2600 | | | | 40000 | | | | | | | |

| Field_ID | Sampled_Date_Time | Lab_Report_Number | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG05_0_0.1 | 17/10/2022 | 933769 | 8 | <0.4 | 15 | 11 | 1600 | <0.1 | <5 | 81 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 |
| DG05_E_5.0_0-0.1 | 21/12/2022 | 952797 | 11 | <0.4 | 21 | 14 | 27 | 0.2 | <5 | 29 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 |
| DG05_W_5.0_0-0.1 | 21/12/2022 | 952797 | 3.2 | <0.4 | 10 | 82 | 16 | <0.1 | 28 | 72 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 |
| DG05-0-0.1 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Table B: Lot 3 Addendum Soil Waste Classification Results**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | BTEXN | | | | | | | PAH | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Benzene | Toluene | Ethylbenzene | Xylene (o) | Xylene (m & p) | Xylene Total | Naphthalene_VOC | Acenaphthene | Acenaphthylene | Anthracene | Benz(a)anthracene | Benzo(a)pyrene | Benzo(a)pyrene TEQ (LOR) | Benzo(a)pyrene TEQ calc (Half) | Benzo(a)pyrene TEQ calc (Zero) | Benzo(b+j)fluoranthene | Benzo(g,h,i)perylene | Benzo(k)fluoranthene | Chrysene | Dibenz(a,h)anthracene | Fluoranthene | Fluorene | Indeno(1,2,3-cd)pyrene | Naphthalene | Phenanthrene | Pyrene | PAHs (Sum of total) |
| | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| NSW 2014 General Solid Waste CT1 (No Leaching) | 10 | 288 | 600 | | | 1000 | | | | | | 0.8 | | | | | | | | | | | | | | | | |
| NSW 2014 General Solid Waste SCC1 (with leached) | 18 | 518 | 1080 | | | 1800 | | | | | | 10 | | | | | | | | | | | | | | | | |
| NSW 2014 Restricted Solid Waste CT2 (No Leaching) | 40 | 1152 | 2400 | | | 4000 | | | | | | 3.2 | | | | | | | | | | | | | | | | |
| NSW 2014 Restricted Solid Waste SCC2 (with leached) | 72 | 2073 | 4320 | | | 7200 | | | | | | 23 | | | | | | | | | | | | | | | | |

| Field_ID | Sampled_Date_Time | Lab_Report_Number | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG05_0_0.1 | 17/10/2022 | 933769 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| DG05_E_5.0_0-0.1 | 21/12/2022 | 952797 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| DG05_W_5.0_0-0.1 | 21/12/2022 | 952797 | 0.2 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| DG05-0-0.1 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Table B: Lot 3 Addendum Soil Waste Classification Results**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | | | Organochlorine Pesticides | | | | | | | | | | | | | | | | | | | | | | Polychlorinated Biphenyls | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4,4-DDE | a-BHC | b-BHC | d-BHC | g-BHC (Lindane) | Aldrin | Dieldrin | Aldrin + Dieldrin | Chlordane | DDT | DDD | DDT+DDE+DDD | Endosulfan I | Endosulfan II | Endosulfan sulphate | Endrin | Endrin aldehyde | Endrin ketone | Heptachlor | Heptachlor Epoxide | Methoxychlor | Toxaphene | Arochlor 1016 | Arochlor 1221 | Arochlor 1232 | Arochlor 1242 | Arochlor 1248 | Arochlor 1254 | Arochlor 1260 | PCBs (Sum of total) |
| | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | | | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.1 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.5 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| NSW 2014 General Solid Waste CT1 (No Leaching) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | <50 |
| NSW 2014 General Solid Waste SCC1 (with leached) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | <50- |
| NSW 2014 Restricted Solid Waste CT2 (No Leaching) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | <50 |
| NSW 2014 Restricted Solid Waste SCC2 (with leached) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | <50 |
| **Field_ID** | **Sampled_Date_Time** | **Lab_Report_Number** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DG05_0_0.1 | 17/10/2022 | 933769 | 0.07 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | <0.05 | <0.05 | 0.07 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.5 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| DG05_E_5.0_0-0.1 | 21/12/2022 | 952797 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.5 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| DG05_W_5.0_0-0.1 | 21/12/2022 | 952797 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.5 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| DG05-0-0.1 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Table B: Lot 3 Addendum Soil Waste Classification Results**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | PFAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Perfluorobutanoic acid (PFBA) | Perfluoropentanoic acid (PFPeA) | Perfluorohexanoic acid (PFHxA) | Perfluoroheptanoic acid (PFHpA) | Perfluorooctanoic acid (PFOA) | Perfluorononanoic acid (PFNA) | Perfluorodecanoic acid (PFDA) | Perfluoroundecanoic acid (PFUnDA) | Perfluorododecanoic acid (PFDoDA) | Perfluorotridecanoic acid (PFTrDA) | Perfluorotetradecanoic acid (PFTeDA) | Perfluorooctane sulfonamide (FOSA) | N-Methyl perfluorooctane sulfonamide (NMeFOSA) | N-Ethyl perfluorooctane sulfonamide (NEtFOSA) | N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE) | N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE) | N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA) | N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | Perfluoropropanesulfonic acid (PFPrS) | Perfluorobutanesulfonic acid (PFBS) | Perfluoropentanesulfonic acid (PFPeS) | Perfluorohexanesulfonic acid (PFHxS) | Perfluoroheptane sulfonic acid (PFHpS) | Perfluorooctanesulfonic acid (PFOS) | Perfluorononanesulfonic acid (PFNS) | Perfluorodecanesulfonic acid (PFDS) | 1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTSA) | 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTSA) | 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTSA) | 1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2 FTSA) | Sum of PFHxS and PFOS | Sum of enHealth PFAS (PFHxS + PFOS + PFOA)* | Sum of US EPA PFAS (PFOS + PFOA)* | Sum of WA DWER PFAS (n=10)* | Sum of PFAS |
| | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/KG | mg/kg |
| EQL | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.01 | 0.01 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.01 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.01 | 0.05 |
| NSW 2014 General Solid Waste CT1 (No Leaching) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 General Solid Waste SCC1 (with leached) | | | | | 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1.8 | | | | |
| NSW 2014 Restricted Solid Waste CT2 (No Leaching) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 Restricted Solid Waste SCC2 (with leached) | | | | | 72 | | | | | | | | | | | | | | | | | | | | | | | | | | | 7.2 | | | | |

| Field_ID | Sampled_Date_Time | Lab_Report_Number | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG05_0_0.1 | 17/10/2022 | 933769 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.01 | <0.05 |
| DG05_E_5.0_0-0.1 | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05_W_5.0_0-0.1 | 21/12/2022 | 952797 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| DG05-0-0.1 | 17/10/2022 | 938609 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Table B: Lot 3 Addendum Soil Waste Classification Results**
Project Number: 63325
Project Name: Edmonson Park Environmental and Geotechnical

| | Chlorinated Benzenes | PA VIC - IWRG62 | | Asbestos - Eurofins | | | | | | | | | | | | | | | | | | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hexachlorobenzene | Organochlorine Pesticides EPAVic | Other Organochlorine Pesticides EPAVic | Approximate Sample Mass | Mass ACM | Mass Asbestos in ACM | Asbestos from ACM in Soil | Mass FA | Mass Asbestos in FA | Mass AF | Mass asbestos in AF | Asbestos from FA & AF in Soil | Mass Asbestos in FA & AF | ACM - Comment | FA Comment | AF - Comment | Organic Fibres - Comment | Respirable Fibres - Comment | Synthetic Fibres - Comment | Asbestos Reported Result | Moisture Content (dried @ 103°C) |
| | mg/kg | mg/kg | mg/kg | g | g | g | % (w/w) | g | g | g | g | % (w/w) | g | Comment | Comment | Comment | Comment | Comment | Comment | Comment | % |
| EQL | 0.05 | 0.1 | 0.1 | | | | | | | | | | | | | | | | | | 1 |
| NSW 2014 General Solid Waste CT1 (No Leaching) | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 General Solid Waste SCC1 (with leached) | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 Restricted Solid Waste CT2 (No Leaching) | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 Restricted Solid Waste SCC2 (with leached) | | | | | | | | | | | | | | | | | | | | | |

| Field_ID | Sampled_Date_Time | Lab_Report_Number | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG05_0_0.1 | 17/10/2022 | 933769 | <0.05 | <0.1 | <0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 14 |
| DG05_E_5.0_0-0.1 | 21/12/2022 | 952797 | <0.05 | <0.1 | <0.1 | 516 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Nil | Nil | Nil | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | 6.2 |
| DG05_W_5.0_0-0.1 | 21/12/2022 | 952797 | <0.05 | <0.1 | <0.1 | 778 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Nil | Nil | Nil | Organic fibres detected | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | 3.9 |
| DG05-0-0.1 | 17/10/2022 | 938609 | - | - | - | 513 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Nil | Nil | Nil | Nil | No trace asbestos detected | Nil | No asbestos detected at the reporting limit of 0.001% w/w | - |

**Table C: Addendum Soil Leachate Analytical Results**

Project Number: 63325

Project Name: Edmonson Park Environmental and Geotechnical

| | | | Heavy Metal | TCLP | | |
|---|---|---|---|---|---|---|
| | | | Lead | pH (after HCL) | pH (Final) | pH (Initial) |
| | | | mg/L | pH Units | pH Units | pH Units |
| EQL | | | 0.01 | 0.1 | 0.1 | 0.1 |
| NSW 2014 General Solid Waste TCLP1 (leached) | | | 5 | | | |
| NSW 2014 Restricted Solid Waste TCLP2 (leached) | | | 20 | | | |
| **Field_ID** | **Location_Code** | **Sampled_Date_Time** | | | | |
| DG05_0_0.1 | DG05 | 17/10/2022 | 3.5 | 2.3 | 5.1 | 7.6 |

## Attachment 8 – Chain of Custody and Laboratory Analytical Results

# 1 DAY TAT ADDITIONAL LEACHATES: FW: Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

Andrew Black <AndrewBlack@eurofins.com>
Fri 2022-11-25 8:47 AM
To: #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

**INFO**: INTERNAL EMAIL - Sent from your own Eurofins email domain.

Urgent 1 day TAT additional leachates thanks team

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing Australia Pty Ltd**
Unit 7
7 Friesian Close
SANDGATE, NSW, 2304
AUSTRALIA
Phone: +61 2 9900 8490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website: eurofins.com.au/environmental-testing




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*For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).*

---

**From:** Michelle Delandro <MDelandro@jbsg.com.au>
**Sent:** Friday, 25 November 2022 8:46 AM
**To:** Andrew Black <AndrewBlack@eurofins.com>
**Subject:** RE: Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

**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.

In addition, can I please request lead TCLP on a 24hr TAT on the following samples?

DG05_0_0.1

DG07_0_0.1

FT03_0_0.1

Thanks,

Michelle

**Michelle Delandro| Senior Project Manager| JBS&G**
Gadigal Country | Level 1, 50 Margaret Street, Sydney, NSW
T: 02 8245 0300 | M: 0417 287 561| E: mdelandro@jbsg.com.au | W: jbsg.com.au | L: Conditions and Limitations

*Exceptional Outcomes*

---

**From:** Andrew Black <AndrewBlack@eurofins.com>
**Sent:** Friday, 25 November 2022 8:44 AM
**To:** Michelle Delandro <MDelandro@jbsg.com.au>
**Subject:** RE: Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

***[EXTERNAL EMAIL]** Stop and think before opening attachments, clicking or responding.***

No worries Michelle I have raised a repeat on it

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing Australia Pty Ltd**
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AUSTRALIA
Phone: +61 2 9900 8490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website: eurofins.com.au/environmental-testing




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*For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnvirosampleNSW@eurofins.com or 02 9900 8421 (7am – 9pm).*
*For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).*

---

**From:** Michelle Delandro <MDelandro@jbsg.com.au>
**Sent:** Friday, 25 November 2022 8:09 AM
**To:** Andrew Black <AndrewBlack@eurofins.com>
**Subject:** RE: Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

**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 Andrew,

Can you please check legitimacy of lead analysis reported from the following batch for sample ASAP?

| | | |
|---|---|---|
| DG05_0_0.1 | 17/10/2022 | 933769 |

Thanks

Michelle

**Michelle Delandro| Senior Project Manager| JBS&G**
Gadigal Country | Level 1, 50 Margaret Street, Sydney, NSW
T: 02 8245 0300 | M: 0417 287 561| E: mdelandro@jbsg.com.au | W: jbsg.com.au | L: Conditions and Limitations

*Exceptional Outcomes*

---

**From:** AndrewBlack@eurofins.com <AndrewBlack@eurofins.com>
**Sent:** Thursday, 27 October 2022 10:58 AM
**To:** Michelle Delandro <MDelandro@jbsg.com.au>
**Cc:** Massimo Chapman <mchapman@jbsg.com.au>
**Subject:** Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

***[EXTERNAL EMAIL] Stop and think before opening attachments, clicking or responding.***

Dear Massimo

I will get you to double check things with this job since I know there were some discrepancies with a couple of samples missing and asbestos bags potentially.

Kindest Regards,

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing**
Unit 7
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SANDGATE NSW 2304

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Phone: +61 299 008 490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website:[http://]environment.eurofins.com.au
View our latest EnviroNotes
How did we do? Provide your feedback here



eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

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# Sample Receipt Advice

| | |
|---|---|
| **Company name:** | JBS & G Australia (NSW) P/L |
| **Contact name:** | Michelle Delandro |
| **Project name:** | ADDITIONAL - EDPARK-OP |
| **Project ID:** | ADDITIONAL - 63325 |
| **Turnaround time:** | 1 Day |
| **Date/Time received** | Nov 25, 2022 8:47 AM |
| **Eurofins reference** | 944666 |

## 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 : 15.6 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:

**Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com**

Results will be delivered electronically via email to Michelle Delandro - MDelandro@jbsg.com.au.

Global Leader - Results you can trust

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

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

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

**Attention:** **Michelle Delandro**

**Report** **944666-L**
Project name ADDITIONAL - EDPARK-OP
Project ID ADDITIONAL - 63325
Received Date Nov 25, 2022

| **Client Sample ID** | | | **DG05_0_0.1** | **DG07_0_0.1** | **FT03_0_0.1** |
|---|---|---|---|---|---|
| **Sample Matrix** | | | **US Leachate** | **US Leachate** | **US Leachate** |
| **Eurofins Sample No.** | | | **S22-No0062716** | **S22-No0062717** | **S22-No0062718** |
| **Date Sampled** | | | **Oct 17, 2022** | **Oct 17, 2022** | **Oct 17, 2022** |
| Test/Reference | LOR | Unit | | | |
| **Heavy Metals** | | | | | |
| Lead | 0.01 | mg/L | 3.5 | 0.03 | 0.08 |
| **USA Leaching Procedure** | | | | | |
| Leachate Fluid[C01] | | comment | 1.0 | 1.0 | 1.0 |
| pH (initial) | 0.1 | pH Units | 7.6 | 7.5 | 6.7 |
| pH (off) | 0.1 | pH Units | 5.1 | 5.1 | 5.1 |
| pH (USA HCl addition) | 0.1 | pH Units | 2.3 | 2.4 | 2.2 |

## 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 |
|---|---|---|---|
| Heavy Metals | Sydney | Nov 25, 2022 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| USA Leaching Procedure | Sydney | Nov 25, 2022 | 14 Days |
| - Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes | | | |

eurofins

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NATA# 1261 Site# 1254

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NATA# 1261 Site# 18217

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NATA# 1261 Site# 25079

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**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** ADDITIONAL - EDPARK-OP
**Project ID:** ADDITIONAL - 63325

**Order No.:**
**Report #:** 944666
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 25, 2022 8:47 AM
**Due:** Nov 28, 2022
**Priority:** 1 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Lead | USA Leaching Procedure |
|---|---|---|---|---|---|---|---|
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X |
| **External Laboratory** | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | |
| 1 | DG05_0_0.1 | Oct 17, 2022 | | US Leachate | S22-No0062716 | X | X |
| 2 | DG07_0_0.1 | Oct 17, 2022 | | US Leachate | S22-No0062717 | X | X |
| 3 | FT03_0_0.1 | Oct 17, 2022 | | US Leachate | S22-No0062718 | X | X |
| **Test Counts** | | | | | | 3 | 3 |

eurofins | Environment Testing

## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

### Units

**mg/kg:** milligrams per kilogram
**mg/L:** milligrams per litre
**µg/L:** micrograms per litre
**ppm:** parts per million
**ppb:** parts per billion
**%:** Percentage
**org/100 mL:** Organisms per 100 millilitres
**NTU:** Nephelometric Turbidity Units
**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
**CFU:** Colony forming unit

### Terms

| | |
|---|---|
| **APHA** | American Public Health Association |
| **COC** | Chain of Custody |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **CRM** | Certified Reference Material (ISO17034) - reported as percent recovery. |
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **LOR** | Limit of Reporting. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **SRA** | Sample Receipt Advice |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **TBTO** | Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits. |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **TEQ** | Toxic Equivalency Quotient or Total Equivalence |
| **QSM** | US Department of Defense Quality Systems Manual Version 5.4 |
| **US EPA** | United States Environmental Protection Agency |
| **WA DWER** | Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA |

### QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

### QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

**Quality Control Results**

| Test | Lab Sample ID | QA Source | Units | Result 1 | Result 2 | RPD | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Lead | | | mg/L | < 0.01 | | | 0.01 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Lead | | | % | 95 | | | 80-120 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Lead | S22-No0023503 | NCP | % | 93 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Lead | S22-No0062672 | NCP | mg/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 |
|---|---|
| C01 | Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other |

## Authorised by:

| | |
|---|---|
| Bonnie Pu | Analytical Services Manager |
| Charl Du Preez | Senior Analyst-Metal |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

# 1 DAY TAT ADDITIONAL ANALYSIS: FW: Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

Andrew Black <AndrewBlack@eurofins.com>

Wed 2022-11-30 4:16 PM

To: #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

**INFO**: INTERNAL EMAIL - Sent from your own Eurofins email domain.

Urgent 1 day TAT additional analysis thanks team

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing Australia Pty Ltd**
Unit 7
7 Friesian Close
SANDGATE, NSW, 2304
AUSTRALIA
Phone: +61 2 9900 8490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website: eurofins.com.au/environmental-testing




This e-mail including its attachments may contain confidential and proprietary information. Any unauthorized disclosure or use of this e-mail including its attachments is prohibited and may be prosecuted. If you are not the intended recipient, please inform the sender by an e-mail reply and delete the message. Transmission by e-mail is not secure and can result in errors or omissions in the content of the message. Despite state-of-the-art precautions we cannot guarantee that e-mails and attachments are free from viruses. We accept no liability for viruses or any transmission-related errors and omissions. You need to always virus-check any e-mails and attachments.
Eurofins companies are independent legal entities that are bound only by members of their management bodies. No other persons have representation power unless specifically authorised by proxy or other legal means.

*For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnvirosampleNSW@eurofins.com or 02 9900 8421 (7am – 9pm).*
*For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).*

---

**From:** Michelle Delandro <MDelandro@jbsg.com.au>
**Sent:** Wednesday, 30 November 2022 4:10 PM
**To:** Andrew Black <AndrewBlack@eurofins.com>
**Subject:** RE: Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

**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 Andrew,

Can I please request additional lead analysis completed on the following sample:

DG05_0.2_0.3 (Lab ID: S22-Oc0043768)

On a 24 hr TAT please.

Are metals a 6 month holding time?

Regards,

Michelle

**Michelle Delandro| Senior Project Manager| JBS&G**
Gadigal Country | Level 1, 50 Margaret Street, Sydney, NSW
T: 02 8245 0300 | M: 0417 287 561| E: mdelandro@jbsg.com.au | W: jbsg.com.au | L: Conditions and Limitations

*Exceptional Outcomes*

---

**From:** AndrewBlack@eurofins.com <AndrewBlack@eurofins.com>
**Sent:** Thursday, 27 October 2022 10:58 AM
**To:** Michelle Delandro <MDelandro@jbsg.com.au>
**Cc:** Massimo Chapman <mchapman@jbsg.com.au>
**Subject:** Eurofins Test Results - Report 933769 : Site EDPARK-OP (63325)

***[EXTERNAL EMAIL] Stop and think before opening attachments, clicking or responding.***

Dear Massimo

I will get you to double check things with this job since I know there were some discrepancies with a couple of samples missing and asbestos bags potentially.

Kindest Regards,

Andrew Black
**Analytical Services Manager**

**Eurofins | Environment Testing**
Unit 7
7 Friesian Close
SANDGATE NSW 2304
AUSTRALIA
Phone: +61 299 008 490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website:[http://]environment.eurofins.com.au
View our latest EnviroNotes
How did we do? Provide your feedback here



eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**

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Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

**Sydney**
179 Magowar Road
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NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

**Canberra**
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Mitchell
ACT 2911
Tel: +61 2 6113 8091

**Brisbane**
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Murarrie
QLD 4172
Tel: +61 7 3902 4600
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**Newcastle**
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Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

**Eurofins ARL Pty Ltd**

ABN: 91 05 0159 898

**Perth**
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Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

**Eurofins Environment Testing NZ Ltd**

NZBN: 9429046024954

**Auckland**
35 O'Rorke Road
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Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

**Christchurch**
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

# Sample Receipt Advice

| | |
|---|---|
| **Company name:** | JBS & G Australia (NSW) P/L |
| **Contact name:** | Michelle Delandro |
| **Project name:** | ADDITIONAL - EDPARK-OP |
| **Project ID:** | ADDITIONAL - 63325 |
| **Turnaround time:** | 1 Day |
| **Date/Time received** | Nov 30, 2022 4:16 PM |
| **Eurofins reference** | 945947 |

## 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 : 15.6 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:

**Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com**

Results will be delivered electronically via email to Michelle Delandro - MDelandro@jbsg.com.au.

Global Leader - Results you can trust

eurofins | Environment Testing

# Certificate of Analysis

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

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

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

**Attention:** **Michelle Delandro**

**Report** **945947-S**
Project name ADDITIONAL - EDPARK-OP
Project ID ADDITIONAL - 63325
Received Date Nov 30, 2022

| **Client Sample ID** | | | **DG05_0.2_0.3** |
|---|---|---|---|
| **Sample Matrix** | | | **Soil** |
| **Eurofins Sample No.** | | | **S22-No0073444** |
| **Date Sampled** | | | **Oct 17, 2022** |
| Test/Reference | LOR | Unit | |
| **Heavy Metals** | | | |
| Lead | 5 | mg/kg | 16 |
| | | | |
| % Moisture | 1 | % | 22 |

## 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 |
|---|---|---|---|
| Heavy Metals | Sydney | Nov 30, 2022 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| % Moisture | Sydney | Nov 30, 2022 | 14 Days |
| - Method: LTM-GEN-7080 Moisture | | | |

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

**Eurofins Environment Testing Australia Pty Ltd**
ABN: 50 005 085 521

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Tel: +64 9 526 45 51
IANZ# 1327

**Christchurch**
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** ADDITIONAL - EDPARK-OP
**Project ID:** ADDITIONAL - 63325

**Order No.:**
**Report #:** 945947
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 30, 2022 4:16 PM
**Due:** Dec 1, 2022
**Priority:** 1 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Lead | Moisture Set |
|---|---|---|---|---|---|---|---|
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X |
| **External Laboratory** | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | |
| 1 | DG05_0.2_0.3 | Oct 17, 2022 | | Soil | S22-No0073444 | X | X |
| **Test Counts** | | | | | | 1 | 1 |

eurofins | Environment Testing

## Internal Quality Control Review and Glossary

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**CFU:** Colony forming unit

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| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
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| **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 |

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NOTE: pH duplicates are reported as a range not as RPD

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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 | Lab Sample ID | QA Source | Units | Result 1 | Result 2 | RPD | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Lead | | | mg/kg | < 5 | | | 5 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Lead | | | % | 101 | | | 80-120 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Lead | S22-No0072548 | NCP | % | 89 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Lead | S22-No0072546 | NCP | mg/kg | 25 | 25 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S22-No0072930 | NCP | % | 5.6 | 6.0 | 6.6 | 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 |

## Authorised by:

| | |
|---|---|
| Bonnie Pu | Analytical Services Manager |
| Fang Yee Tan | Senior Analyst-Metal |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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EUROFINS (1/2)

# Chain of Custody

JBS&G

PROJECT NO.: 63325
PROJECT NAME: EDGEWATER PARK
DATE NEEDED BY: STD TAT (9/01/22)
PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) MDELANOLD@jbsg.com.au; (3) ACHEOK@jbsg.com.au

LABORATORY BATCH NO.:
SAMPLERS: A. CHEOK
QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

ALL ON ICE

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | JB2A | PFAS | LEAD | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DG05_W_5.0_0-0.1 | SOIL | 21/12 | | J+B | | X | | X | | | |
| ↓ -0.2-0.3 | ↓ | ↓ | | J | | | | X | | | |
| DG05_W_10.0_0-0.1 | | | | J | | | | | | | |
| ↓ -0.2-0.3 | | | | J | | | | | | | |
| DG05_S_5.0_0-0.1 | | | | J | | | | X | | | |
| ↓ -0.2-0.3 | | | | J | | | | X | | | |
| DG05_S_10.0_0-0.1 | | | | J | | | | | | | |
| ↓ -0.2-0.3 | | | | J | | | | | | | |
| DG05_E_5.0_0-0.1 | | | | J+B | | X | | X | | | |
| ↓ -0.2-0.3 | | | | J | | | | X | | | |
| DG05_E_10.0_0-0.1 | | | | J | | | | | | | |
| ↓ -0.2-0.3 | | | | J | | | | | | | |
| ~~DG05_N_5.0_0-0.1~~ | | | | | | | | | | | |
| DG05_N_5.0_0.1-0.2 | | | | J | | | | X | | | |
| ↓ -0.2-0.3 | | | | J | | | | X | | | |
| DG05_N_10.0_0-0.1 | | | | J | | | | | | | |
| ↓ -0.2-0.3 | | | | J | | | | | | | |
| DG16_0-0.1 | | | | J+B+PFAS | | | | | | | |
| -0.2-0.3 | ↓ | ↓ | | ↓ | | X | X | | | X | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: [signature] DATE: 21/12/21 | CONSIGNMENT NOTE NO. | NAME: A.O 5.50pm | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | DATE: 21/12/21 OF: | COOLER TEMP 6.2 deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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952797

EUROFINS (2/2)

# Chain of Custody

JBS&G

PROJECT NO.: 63325
PROJECT NAME: ED PARK
DATE NEEDED BY: STD TAT (09/01/22)

LABORATORY BATCH NO.:
SAMPLERS: ACHEOK
QC LEVEL: NEPM (2013)

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) MDELANDRO@jbsg.com.au; (3) ACHEOK@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

ALL ON ICE

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | JB24 | PFAS | JB2 | ASBESTOS | TRH/BTXE | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DG16_0.6-0.7 | SOIL | 21/12 | | J+B+PFAS, | | | | | | | | | |
| DG15_0-0.1 | | | | J+B+PFAS | | X | X | | | | | X | |
| ↓ ~~0.2-0.3~~ 0.1-0.2 | | | | ↓ | | | | | | | | | |
| ↓ -0.2-0.3 | | | | | | | | | | | | | |
| ↓ -0.4-0.5 | | | | J+B. | | | | | | | | | |
| DG09_E_3.0_0-0.1 | | | | J+B | | | | X | X | | | X | |
| ↓ -5.0_0-0.1 | | | | $ B | | | | | X | | | X | |
| ↓ -10.0_0-0.1 | | | | ↓ | | | | | | | | | |
| DG09_W_2.0_0-0.1 | | | | J | | | | X | | | | | |
| ↓ -6.0_0-0.1 | | | | B | | | | | X | | | X | |
| ↓ -8.0_0-0.1 | | | | B | | | | | X | | | X | |
| ↓ -10.0_0-0.1 | | | | B | | | | | | | | | |
| DG09_S_4.0_0-0.1 | | | | B | | | | | X | | | X | |
| ↓ -6.0_0-0.1 | | | | B | | | | | X | | | X | |
| ↓ -8.0_0-0.1 | | | | B | | | | | | | | | |
| QC20221221 | ↓ | ↓ | | J+B+PFAS | | X | X | | | | | X | |
| TS | WATER | ↓ | | VIALS | | | | | | X | | | |
| TB | WATER | ↓ | | ↓ | | | | | | X | | | |
| FB | WATER | ↓ | | PFAS BOTTLE | | | X | | | | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: Oral DATE: 21/12/22 | CONSIGNMENT NOTE NO. | NAME: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | DATE: | COOLER TEMP ..... deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | OF: NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

| | |
|---|---|
| **Attention:** | Michelle Delandro |
| **Report** | 952797-AID-V2 |
| **Project Name** | ED PARK |
| **Project ID** | 63325 |
| **Received Date** | Dec 21, 2022 |
| **Date Reported** | Jan 11, 2023 |

## Methodology:

| | |
|---|---|
| Asbestos Fibre Identification | Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.<br>*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.* |
| Unknown Mineral Fibres | Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.<br>*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.* |
| Subsampling Soil Samples | The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.<br>*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.* |
| Bonded asbestos-containing material (ACM) | The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004.<br>*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.* |
| Limit of Reporting | The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).<br>The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).<br>*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.* |

**Project Name** ED PARK
**Project ID** 63325
**Date Sampled** Dec 21, 2022
**Report** 952797-AID-V2

| Client Sample ID | Eurofins Sample No. | Date Sampled | Sample Description | Result |
|---|---|---|---|---|
| DG05_W_5.0_0-0.1 | 22-De0053649 | Dec 21, 2022 | Approximate Sample 778g<br>Sample consisted of: Brown fine-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| DG05_E_5.0_0-0.1 | 22-De0053653 | Dec 21, 2022 | Approximate Sample 516g<br>Sample consisted of: Brown fine-grained clayey soil, coal and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |

## 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 |
|---|---|---|---|
| Asbestos - LTM-ASB-8020 | Sydney | Dec 22, 2022 | Indefinite |

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**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** ED PARK
**Project ID:** 63325

**Order No.:**
**Report #:** 952797
**Phone:** 02 8245 0300
**Fax:**

**Received:** Dec 21, 2022 5:50 PM
**Due:** Jan 9, 2023
**Priority:** 10 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | Lead | Moisture Set | JBS&G Suite 2 | BTEXN and Volatile TRH | Per- and Polyfluoroalkyl Substances (PFASs) | Per- and Polyfluoroalkyl Substances (PFASs) | BTEXN and Volatile TRH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | X | X | |
| **External Laboratory** | | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | | |
| 1 | DG05_W_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053649 | X | | | X | X | | | | |
| 2 | DG05_W_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053650 | | | X | X | | | | | |
| 3 | DG05_S_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053651 | | | X | X | | | | | |
| 4 | DG05_S_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053652 | | | X | X | | | | | |
| 5 | DG05_E_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053653 | X | | | X | X | | | | |
| 6 | DG05_E_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053654 | | | X | X | | | | | |
| 7 | DG05_N_5.0_ | Dec 21, 2022 | | Soil | S22-De0053655 | | | X | X | | | | | |

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IANZ# 1290

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**Address:** Level 1, 50 Margaret St
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NSW 2000

**Project Name:** ED PARK
**Project ID:** 63325

**Order No.:**
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**Phone:** 02 8245 0300
**Fax:**

**Received:** Dec 21, 2022 5:50 PM
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**Priority:** 10 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | X | X | |
| | 0.1-0.2 | | | | | | | | | | | | | |
| 8 | DG05_N_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053656 | | | X | X | | | | | |
| 9 | DG16_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053657 | X | | | X | X | | | X | |
| 10 | DG15_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053658 | X | | | X | X | | | X | |
| 11 | DG09_E_3.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053659 | X | | | X | X | | | | |
| 12 | DG09_E_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053660 | X | | | | | | | | |
| 13 | DG09_W_2.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053661 | | | | X | X | | | | |
| 14 | DG09_W_6.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053662 | X | | | | | | | | |
| 15 | DG09_W_8.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053663 | X | | | | | | | | |
| 16 | DG09_S_4.0_ | Dec 21, 2022 | | Soil | S22-De0053664 | X | | | | | | | | |

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**Address:** Level 1, 50 Margaret St
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**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | Lead | Moisture Set | JBS&G Suite 2 | BTEXN and Volatile TRH | Per- and Polyfluoroalkyl Substances (PFASs) | Per- and Polyfluoroalkyl Substances (PFASs) | BTEXN and Volatile TRH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | X | X | |
| 16 | DG09_S_4.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053664 | | | | | | | | | |
| 17 | DG09_S_6.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053665 | X | | | | | | | | |
| 18 | QC20221221 | Dec 21, 2022 | | Soil | S22-De0053666 | X | | | X | X | | | X | |
| 19 | TS | Dec 21, 2022 | | Water | S22-De0053667 | | | | | | | | | X |
| 20 | TB | Dec 21, 2022 | | Water | S22-De0053668 | | | | | | X | | | |
| 21 | FB | Dec 21, 2022 | | Water | S22-De0053669 | | | | | | | X | | |
| 22 | DG05_W_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053670 | | X | | | | | | | |
| 23 | DG05_W_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053671 | | X | | | | | | | |
| 24 | DG05_S_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053672 | | X | | | | | | | |
| 25 | DG05_S_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053673 | | X | | | | | | | |

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**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** ED PARK
**Project ID:** 63325

**Order No.:**
**Report #:** 952797
**Phone:** 02 8245 0300
**Fax:**

**Received:** Dec 21, 2022 5:50 PM
**Due:** Jan 9, 2023
**Priority:** 10 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | Lead | Moisture Set | JBS&G Suite 2 | BTEXN and Volatile TRH | Per- and Polyfluoroalkyl Substances (PFASs) | Per- and Polyfluoroalkyl Substances (PFASs) | BTEXN and Volatile TRH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | X | X | |
| 26 | DG05_E_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053674 | | X | | | | | | | |
| 27 | DG05_E_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053675 | | X | | | | | | | |
| 28 | DG05_N_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053676 | | X | | | | | | | |
| 29 | DG05_N_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053677 | | X | | | | | | | |
| 30 | DG16_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053678 | | X | | | | | | | |
| 31 | DG16_0.6-0.7 | Dec 21, 2022 | | Soil | S22-De0053679 | | X | | | | | | | |
| 32 | DG15_0.1-0.2 | Dec 21, 2022 | | Soil | S22-De0053680 | | X | | | | | | | |
| 33 | DG15_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053681 | | X | | | | | | | |
| 34 | DG15_0.4-0.5 | Dec 21, 2022 | | Soil | S22-De0053682 | | X | | | | | | | |
| 35 | DG09_E_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053683 | | X | | | | | | | |

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**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
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**Order No.:**
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**Phone:** 02 8245 0300
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**Received:** Dec 21, 2022 5:50 PM
**Due:** Jan 9, 2023
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**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | Lead | Moisture Set | JBS&G Suite 2 | BTEXN and Volatile TRH | Per- and Polyfluoroalkyl Substances (PFASs) | Per- and Polyfluoroalkyl Substances (PFASs) | BTEXN and Volatile TRH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA # 1261 Site # 20794** | | | | | | | | | | | | X | X | |
| 36 | DG09_W_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053684 | | X | | | | | | | |
| 37 | DG09_S_8.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053685 | | X | | | | | | | |
| **Test Counts** | | | | | | 11 | 16 | 6 | 13 | 7 | 1 | 4 | 4 | 1 |

## Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

## Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
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.

## Units

| | |
|---|---|
| % w/w: | Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**) |
| F/fld | Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**) |
| F/mL | Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**) |
| g, kg | Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**) |
| g/kg | Concentration in grams per kilogram |
| L, mL | Volume, e.g. of air as measured in AFM (**V** = **r** x **t**) |
| L/min | Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**) |
| min | Time (**t**), e.g. of air sample collection period |

## Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

## Terms

| | |
|---|---|
| **%asbestos** | Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**$P_A$**). |
| **ACM** | Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm. |
| **AF** | Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable". |
| **AFM** | Airborne Fibre Monitoring, e.g. by the MFM. |
| **Amosite** | Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004. |
| **AS** | Australian Standard. |
| **Asbestos Content (as asbestos)** | Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**). |
| **Chrysotile** | Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004. |
| **COC** | Chain of Custody. |
| **Crocidolite** | Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004. |
| **Dry** | Sample is dried by heating prior to analysis. |
| **DS** | Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM. |
| **FA** | Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF. |
| **Fibre Count** | Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003 |
| **Fibre ID** | Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos. |
| **Friable** | Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability. |
| **HSG248** | UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021). |
| **HSG264** | UK HSE HSG264, *Asbestos: The Survey Guide* (2012). |
| **ISO (also ISO/IEC)** | International Organization for Standardization / International Electrotechnical Commission. |
| **K Factor** | Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**). |
| **LOR** | Limit of Reporting. |
| **MFM (also NOHSC:3003)** | Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)]. |
| **NEPM (also ASC NEPM)** | National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended). |
| **Organic** | Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004. |
| **PCM** | Phase Contrast Microscopy. As used for Fibre Counting according to the MFM. |
| **PLM** | Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004. |
| **SMF** | Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004. |
| **SRA** | Sample Receipt Advice. |
| **Trace Analysis** | Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix. |
| **UK HSE HSG** | United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication. |
| **UMF** | Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos. |
| **WA DOH** | Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis* |
| **Weighted Average** | Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**). |

## Comments

V2- new version to split report as per client request.

22-De0053658: Sample received was less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

## 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 |

## Asbestos Counter/Identifier:

| | |
|---|---|
| Laxman Dias | Senior Analyst-Asbestos |

## Authorised by:

| | |
|---|---|
| Chamath JHM Annakkage | Senior Analyst-Asbestos |

**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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**JBS & G Australia (NSW) P/L**
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**Sydney**
**NSW 2000**

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

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

**Attention:** **Michelle Delandro**

**Report** **952797-S-V2**
Project name ED PARK
Project ID 63325
Received Date Dec 21, 2022

| **Client Sample ID** | | | **DG05_W_5.0_0-0.1** | **DG05_W_5.0_0.2-0.3** | **DG05_S_5.0_0-0.1** | **DG05_S_5.0_0.2-0.3** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S22-De0053649** | **S22-De0053650** | **S22-De0053651** | **S22-De0053652** |
| **Date Sampled** | | | **Dec 21, 2022** | **Dec 21, 2022** | **Dec 21, 2022** | **Dec 21, 2022** |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | - | - | - |
| TRH C10-C14 | 20 | mg/kg | < 20 | - | - | - |
| TRH C15-C28 | 50 | mg/kg | < 50 | - | - | - |
| TRH C29-C36 | 50 | mg/kg | < 50 | - | - | - |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | - | - | - |
| TRH C6-C10 | 20 | mg/kg | < 20 | - | - | - |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | - | - | - |
| TRH >C10-C16 | 50 | mg/kg | < 50 | - | - | - |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | - | - | - |
| TRH >C16-C34 | 100 | mg/kg | < 100 | - | - | - |
| TRH >C34-C40 | 100 | mg/kg | < 100 | - | - | - |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | - | - | - |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | 0.2 | - | - | - |
| Toluene | 0.1 | mg/kg | < 0.1 | - | - | - |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | - | - | - |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | - | - | - |
| o-Xylene | 0.1 | mg/kg | < 0.1 | - | - | - |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | - | - | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | 74 | - | - | - |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | - | - | - |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 | - | - | - |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 | - | - | - |
| Acenaphthene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Anthracene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 | - | - | - |

| Client Sample ID | | | DG05_W_5.0_0-0.1 | DG05_W_5.0_0.2-0.3 | DG05_S_5.0_0-0.1 | DG05_S_5.0_0.2-0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-De0053649 | S22-De0053650 | S22-De0053651 | S22-De0053652 |
| Date Sampled | | | Dec 21, 2022 | Dec 21, 2022 | Dec 21, 2022 | Dec 21, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Chrysene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Fluoranthene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Fluorene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Naphthalene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Phenanthrene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Pyrene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Total PAH* | 0.5 | mg/kg | < 0.5 | - | - | - |
| 2-Fluorobiphenyl (surr.) | 1 | % | 87 | - | - | - |
| p-Terphenyl-d14 (surr.) | 1 | % | 89 | - | - | - |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | - | - | - |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | - | - | - |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | - | - | - |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | - | - | - |
| a-HCH | 0.05 | mg/kg | < 0.05 | - | - | - |
| Aldrin | 0.05 | mg/kg | < 0.05 | - | - | - |
| b-HCH | 0.05 | mg/kg | < 0.05 | - | - | - |
| d-HCH | 0.05 | mg/kg | < 0.05 | - | - | - |
| Dieldrin | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endosulfan II | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endrin | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endrin ketone | 0.05 | mg/kg | < 0.05 | - | - | - |
| g-HCH (Lindane) | 0.05 | mg/kg | < 0.05 | - | - | - |
| Heptachlor | 0.05 | mg/kg | < 0.05 | - | - | - |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 | - | - | - |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 | - | - | - |
| Methoxychlor | 0.05 | mg/kg | < 0.05 | - | - | - |
| Toxaphene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | - | - | - |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | - | - | - |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | - | - | - |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | - | - | - |
| Dibutylchlorendate (surr.) | 1 | % | 139 | - | - | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | 95 | - | - | - |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1221 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1232 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1242 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1248 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1254 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1260 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Total PCB* | 0.1 | mg/kg | < 0.1 | - | - | - |

| Client Sample ID | | | DG05_W_5.0_0-0.1 | DG05_W_5.0_0.2-0.3 | DG05_S_5.0_0-0.1 | DG05_S_5.0_0.2-0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-De0053649 | S22-De0053650 | S22-De0053651 | S22-De0053652 |
| Date Sampled | | | Dec 21, 2022 | Dec 21, 2022 | Dec 21, 2022 | Dec 21, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Polychlorinated Biphenyls** | | | | | | |
| Dibutylchlorendate (surr.) | 1 | % | 139 | - | - | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | 95 | - | - | - |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 3.2 | - | - | - |
| Cadmium | 0.4 | mg/kg | < 0.4 | - | - | - |
| Chromium | 5 | mg/kg | 10 | - | - | - |
| Copper | 5 | mg/kg | 82 | - | - | - |
| Lead | 5 | mg/kg | 16 | 15 | 23 | 14 |
| Mercury | 0.1 | mg/kg | < 0.1 | - | - | - |
| Nickel | 5 | mg/kg | 28 | - | - | - |
| Zinc | 5 | mg/kg | 72 | - | - | - |
| | | | | | | |
| % Moisture | 1 | % | 3.9 | 16 | 12 | 19 |

| Client Sample ID | | | DG05_E_5.0_0-0.1 | DG05_E_5.0_0.2-0.3 | DG05_N_5.0_0.1-0.2 | DG05_N_5.0_0.2-0.3 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S22-De0053653 | S22-De0053654 | S22-De0053655 | S22-De0053656 |
| Date Sampled | | | Dec 21, 2022 | Dec 21, 2022 | Dec 21, 2022 | Dec 21, 2022 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | - | - | - |
| TRH C10-C14 | 20 | mg/kg | < 20 | - | - | - |
| TRH C15-C28 | 50 | mg/kg | < 50 | - | - | - |
| TRH C29-C36 | 50 | mg/kg | < 50 | - | - | - |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | - | - | - |
| TRH C6-C10 | 20 | mg/kg | < 20 | - | - | - |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | - | - | - |
| TRH >C10-C16 | 50 | mg/kg | < 50 | - | - | - |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | - | - | - |
| TRH >C16-C34 | 100 | mg/kg | < 100 | - | - | - |
| TRH >C34-C40 | 100 | mg/kg | < 100 | - | - | - |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | - | - | - |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | - | - | - |
| Toluene | 0.1 | mg/kg | < 0.1 | - | - | - |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | - | - | - |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | - | - | - |
| o-Xylene | 0.1 | mg/kg | < 0.1 | - | - | - |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | - | - | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | 74 | - | - | - |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | - | - | - |

| Client Sample ID | | | DG05_E_5.0_0-0.1 | DG05_E_5.0_0.2-0.3 | DG05_N_5.0_0.1-0.2 | DG05_N_5.0_0.2-0.3 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S22-De0053653** | **S22-De0053654** | **S22-De0053655** | **S22-De0053656** |
| **Date Sampled** | | | **Dec 21, 2022** | **Dec 21, 2022** | **Dec 21, 2022** | **Dec 21, 2022** |
| Test/Reference | LOR | Unit | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 | - | - | - |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 | - | - | - |
| Acenaphthene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Anthracene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benzo(b&j)fluoranthene[N07] | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benzo(g.h.i)perylene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Chrysene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Dibenz(a.h)anthracene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Fluoranthene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Fluorene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Indeno(1.2.3-cd)pyrene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Naphthalene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Phenanthrene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Pyrene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Total PAH* | 0.5 | mg/kg | < 0.5 | - | - | - |
| 2-Fluorobiphenyl (surr.) | 1 | % | 107 | - | - | - |
| p-Terphenyl-d14 (surr.) | 1 | % | 108 | - | - | - |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | - | - | - |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | - | - | - |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | - | - | - |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | - | - | - |
| a-HCH | 0.05 | mg/kg | < 0.05 | - | - | - |
| Aldrin | 0.05 | mg/kg | < 0.05 | - | - | - |
| b-HCH | 0.05 | mg/kg | < 0.05 | - | - | - |
| d-HCH | 0.05 | mg/kg | < 0.05 | - | - | - |
| Dieldrin | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endosulfan II | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endrin | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 | - | - | - |
| Endrin ketone | 0.05 | mg/kg | < 0.05 | - | - | - |
| g-HCH (Lindane) | 0.05 | mg/kg | < 0.05 | - | - | - |
| Heptachlor | 0.05 | mg/kg | < 0.05 | - | - | - |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 | - | - | - |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 | - | - | - |
| Methoxychlor | 0.05 | mg/kg | < 0.05 | - | - | - |
| Toxaphene | 0.5 | mg/kg | < 0.5 | - | - | - |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | - | - | - |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | - | - | - |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | - | - | - |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | - | - | - |

| Client Sample ID | | | DG05_E_5.0_0-0.1 | DG05_E_5.0_0.2-0.3 | DG05_N_5.0_0.1-0.2 | DG05_N_5.0_0.2-0.3 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S22-De0053653** | **S22-De0053654** | **S22-De0053655** | **S22-De0053656** |
| **Date Sampled** | | | **Dec 21, 2022** | **Dec 21, 2022** | **Dec 21, 2022** | **Dec 21, 2022** |
| Test/Reference | LOR | Unit | | | | |
| **Organochlorine Pesticides** | | | | | | |
| Dibutylchlorendate (surr.) | 1 | % | 114 | - | - | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | 100 | - | - | - |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1221 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1232 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1242 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1248 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1254 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Aroclor-1260 | 0.1 | mg/kg | < 0.1 | - | - | - |
| Total PCB* | 0.1 | mg/kg | < 0.1 | - | - | - |
| Dibutylchlorendate (surr.) | 1 | % | 114 | - | - | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | 100 | - | - | - |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 11 | - | - | - |
| Cadmium | 0.4 | mg/kg | < 0.4 | - | - | - |
| Chromium | 5 | mg/kg | 21 | - | - | - |
| Copper | 5 | mg/kg | 14 | - | - | - |
| Lead | 5 | mg/kg | 27 | 18 | 13 | 11 |
| Mercury | 0.1 | mg/kg | 0.2 | - | - | - |
| Nickel | 5 | mg/kg | < 5 | - | - | - |
| Zinc | 5 | mg/kg | 29 | - | - | - |
| | | | | | | |
| % Moisture | 1 | % | 6.2 | 17 | 8.6 | 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 |
|---|---|---|---|
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Sydney | Dec 22, 2022 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Dec 22, 2022 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Sydney | Dec 22, 2022 | 14 Days |
| - Method: LTM-ORG-2010 BTEX and Volatile TRH | | | |
| JBS&G Suite 2 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Dec 22, 2022 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Polycyclic Aromatic Hydrocarbons | Sydney | Dec 22, 2022 | 14 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water | | | |
| Organochlorine Pesticides | Sydney | Dec 22, 2022 | 14 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Polychlorinated Biphenyls | Sydney | Dec 22, 2022 | 28 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Metals M8 | Sydney | Dec 22, 2022 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| Heavy Metals | Sydney | Dec 22, 2022 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| % Moisture | Sydney | Dec 22, 2022 | 14 Days |
| - Method: LTM-GEN-7080 Moisture | | | |

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**Address:** Level 1, 50 Margaret St
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**Project Name:** ED PARK
**Project ID:** 63325

**Order No.:**
**Report #:** 952797
**Phone:** 02 8245 0300
**Fax:**

**Received:** Dec 21, 2022 5:50 PM
**Due:** Jan 9, 2023
**Priority:** 10 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | Lead | Moisture Set | JBS&G Suite 2 | BTEXN and Volatile TRH | Per- and Polyfluoroalkyl Substances (PFASs) | BTEXN and Volatile TRH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X |
| **External Laboratory** | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | |
| 1 | DG05_W_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053649 | X | | | X | X | | | |
| 2 | DG05_W_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053650 | | | X | X | | | | |
| 3 | DG05_S_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053651 | | | X | X | | | | |
| 4 | DG05_S_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053652 | | | X | X | | | | |
| 5 | DG05_E_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053653 | X | | | X | X | | | |
| 6 | DG05_E_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053654 | | | X | X | | | | |
| 7 | DG05_N_5.0_0.1-0.2 | Dec 21, 2022 | | Soil | S22-De0053655 | | | X | X | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X |
| 8 | DG05_N_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053656 | | | X | X | | | | |
| 9 | DG16_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053657 | X | | | X | X | | X | |
| 10 | DG15_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053658 | X | | | X | X | | X | |
| 11 | DG09_E_3.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053659 | X | | | X | X | | | |
| 12 | DG09_E_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053660 | X | | | | | | | |
| 13 | DG09_W_2.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053661 | | | | X | X | | | |
| 14 | DG09_W_6.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053662 | X | | | | | | | |
| 15 | DG09_W_8.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053663 | X | | | | | | | |
| 16 | DG09_S_4.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053664 | X | | | | | | | |
| 17 | DG09_S_6.0_ | Dec 21, 2022 | | Soil | S22-De0053665 | X | | | | | | | |

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| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | Lead | Moisture Set | JBS&G Suite 2 | BTEXN and Volatile TRH | Per- and Polyfluoroalkyl Substances (PFASs) | BTEXN and Volatile TRH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X |
| | 0-0.1 | | | | | | | | | | | | |
| 18 | QC20221221 | Dec 21, 2022 | | Soil | S22-De0053666 | X | | | X | X | | X | |
| 19 | TS | Dec 21, 2022 | | Water | S22-De0053667 | | | | | | | | X |
| 20 | TB | Dec 21, 2022 | | Water | S22-De0053668 | | | | | | X | | |
| 21 | FB | Dec 21, 2022 | | Water | S22-De0053669 | | | | | | | X | |
| 22 | DG05_W_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053670 | | X | | | | | | |
| 23 | DG05_W_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053671 | | X | | | | | | |
| 24 | DG05_S_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053672 | | X | | | | | | |
| 25 | DG05_S_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053673 | | X | | | | | | |
| 26 | DG05_E_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053674 | | X | | | | | | |
| 27 | DG05_E_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053675 | | X | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X |
| 28 | DG05_N_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053676 | | X | | | | | | |
| 29 | DG05_N_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053677 | | X | | | | | | |
| 30 | DG16_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053678 | | X | | | | | | |
| 31 | DG16_0.6-0.7 | Dec 21, 2022 | | Soil | S22-De0053679 | | X | | | | | | |
| 32 | DG15_0.1-0.2 | Dec 21, 2022 | | Soil | S22-De0053680 | | X | | | | | | |
| 33 | DG15_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053681 | | X | | | | | | |
| 34 | DG15_0.4-0.5 | Dec 21, 2022 | | Soil | S22-De0053682 | | X | | | | | | |
| 35 | DG09_E_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053683 | | X | | | | | | |
| 36 | DG09_W_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053684 | | X | | | | | | |
| 37 | DG09_S_8.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053685 | | X | | | | | | |
| **Test Counts** | | | | | | 11 | 16 | 6 | 13 | 7 | 1 | 4 | 1 |

eurofins | Environment Testing

## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

### Units

**mg/kg:** milligrams per kilogram
**mg/L:** milligrams per litre
**µg/L:** micrograms per litre
**ppm:** parts per million
**ppb:** parts per billion
**%:** Percentage
**org/100 mL:** Organisms per 100 millilitres
**NTU:** Nephelometric Turbidity Units
**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
**CFU:** Colony forming unit

### Terms

| | |
|---|---|
| **APHA** | American Public Health Association |
| **COC** | Chain of Custody |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **CRM** | Certified Reference Material (ISO17034) - reported as percent recovery. |
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **LOR** | Limit of Reporting. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **SRA** | Sample Receipt Advice |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **TBTO** | Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits. |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **TEQ** | Toxic Equivalency Quotient or Total Equivalence |
| **QSM** | US Department of Defense Quality Systems Manual Version 5.4 |
| **US EPA** | United States Environmental Protection Agency |
| **WA DWER** | Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA |

### QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

### QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C6-C9 | mg/kg | < 20 | | | 20 | Pass | |
| TRH C10-C14 | mg/kg | < 20 | | | 20 | Pass | |
| TRH C15-C28 | mg/kg | < 50 | | | 50 | Pass | |
| TRH C29-C36 | mg/kg | < 50 | | | 50 | Pass | |
| TRH C6-C10 | mg/kg | < 20 | | | 20 | Pass | |
| TRH >C10-C16 | mg/kg | < 50 | | | 50 | Pass | |
| TRH >C16-C34 | mg/kg | < 100 | | | 100 | Pass | |
| TRH >C34-C40 | mg/kg | < 100 | | | 100 | Pass | |
| **Method Blank** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Toluene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Ethylbenzene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| m&p-Xylenes | mg/kg | < 0.2 | | | 0.2 | Pass | |
| o-Xylene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Xylenes - Total* | mg/kg | < 0.3 | | | 0.3 | Pass | |
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Acenaphthylene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benz(a)anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(a)pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(b&j)fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(g.h.i)perylene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(k)fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Chrysene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Dibenz(a.h)anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Fluorene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Indeno(1.2.3-cd)pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Naphthalene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Phenanthrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | mg/kg | < 0.1 | | | 0.1 | Pass | |
| 4.4'-DDD | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDE | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDT | mg/kg | < 0.05 | | | 0.05 | Pass | |
| a-HCH | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Aldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| b-HCH | mg/kg | < 0.05 | | | 0.05 | Pass | |
| d-HCH | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Dieldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan I | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan II | mg/kg | < 0.05 | | | 0.05 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Endosulfan sulphate | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin aldehyde | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin ketone | mg/kg | < 0.05 | | | 0.05 | Pass | |
| g-HCH (Lindane) | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor epoxide | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Hexachlorobenzene | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Methoxychlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Toxaphene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1221 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1232 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1242 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1248 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1254 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1260 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Total PCB* | mg/kg | < 0.1 | | | 0.1 | Pass | |
| **Method Blank** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | mg/kg | < 2 | | | 2 | Pass | |
| Cadmium | mg/kg | < 0.4 | | | 0.4 | Pass | |
| Chromium | mg/kg | < 5 | | | 5 | Pass | |
| Copper | mg/kg | < 5 | | | 5 | Pass | |
| Lead | mg/kg | < 5 | | | 5 | Pass | |
| Mercury | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Nickel | mg/kg | < 5 | | | 5 | Pass | |
| Zinc | mg/kg | < 5 | | | 5 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C6-C9 | % | 121 | | | 70-130 | Pass | |
| TRH C10-C14 | % | 75 | | | 70-130 | Pass | |
| TRH C6-C10 | % | 120 | | | 70-130 | Pass | |
| TRH >C10-C16 | % | 76 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 129 | | | 70-130 | Pass | |
| Toluene | % | 123 | | | 70-130 | Pass | |
| Ethylbenzene | % | 112 | | | 70-130 | Pass | |
| m&p-Xylenes | % | 100 | | | 70-130 | Pass | |
| o-Xylene | % | 105 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 102 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | % | 101 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | % | 82 | | | 70-130 | Pass | |
| Acenaphthylene | % | 81 | | | 70-130 | Pass | |
| Anthracene | % | 78 | | | 70-130 | Pass | |
| Benz(a)anthracene | % | 89 | | | 70-130 | Pass | |
| Benzo(a)pyrene | % | 97 | | | 70-130 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Benzo(b&j)fluoranthene | % | 91 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | % | 90 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | % | 92 | | | 70-130 | Pass | |
| Chrysene | % | 92 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | % | 95 | | | 70-130 | Pass | |
| Fluoranthene | % | 90 | | | 70-130 | Pass | |
| Fluorene | % | 91 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | % | 90 | | | 70-130 | Pass | |
| Naphthalene | % | 85 | | | 70-130 | Pass | |
| Phenanthrene | % | 82 | | | 70-130 | Pass | |
| Pyrene | % | 80 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | % | 91 | | | 70-130 | Pass | |
| 4.4'-DDD | % | 103 | | | 70-130 | Pass | |
| 4.4'-DDE | % | 89 | | | 70-130 | Pass | |
| 4.4'-DDT | % | 115 | | | 70-130 | Pass | |
| a-HCH | % | 80 | | | 70-130 | Pass | |
| Aldrin | % | 92 | | | 70-130 | Pass | |
| b-HCH | % | 91 | | | 70-130 | Pass | |
| d-HCH | % | 85 | | | 70-130 | Pass | |
| Dieldrin | % | 99 | | | 70-130 | Pass | |
| Endosulfan I | % | 89 | | | 70-130 | Pass | |
| Endosulfan II | % | 98 | | | 70-130 | Pass | |
| Endosulfan sulphate | % | 95 | | | 70-130 | Pass | |
| Endrin | % | 96 | | | 70-130 | Pass | |
| Endrin aldehyde | % | 102 | | | 70-130 | Pass | |
| Endrin ketone | % | 119 | | | 70-130 | Pass | |
| g-HCH (Lindane) | % | 82 | | | 70-130 | Pass | |
| Heptachlor | % | 108 | | | 70-130 | Pass | |
| Heptachlor epoxide | % | 94 | | | 70-130 | Pass | |
| Hexachlorobenzene | % | 81 | | | 70-130 | Pass | |
| Methoxychlor | % | 115 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | % | 97 | | | 70-130 | Pass | |
| Aroclor-1260 | % | 117 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | % | 91 | | | 80-120 | Pass | |
| Cadmium | % | 96 | | | 80-120 | Pass | |
| Chromium | % | 89 | | | 80-120 | Pass | |
| Copper | % | 85 | | | 80-120 | Pass | |
| Lead | % | 83 | | | 80-120 | Pass | |
| Mercury | % | 108 | | | 80-120 | Pass | |
| Nickel | % | 94 | | | 80-120 | Pass | |
| Zinc | % | 99 | | | 80-120 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | | | | | |
| TRH C6-C9 | S22-De0054082 | NCP | % | 91 | | | 70-130 | Pass | |
| TRH C10-C14 | S22-De0053164 | NCP | % | 78 | | | 70-130 | Pass | |
| TRH C6-C10 | S22-De0054082 | NCP | % | 90 | | | 70-130 | Pass | |
| TRH >C10-C16 | S22-De0053164 | NCP | % | 75 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |
| Benzene | S22-De0054082 | NCP | % | 105 | | | 70-130 | Pass | |
| Toluene | S22-De0054082 | NCP | % | 90 | | | 70-130 | Pass | |
| Ethylbenzene | S22-De0054082 | NCP | % | 90 | | | 70-130 | Pass | |
| m&p-Xylenes | S22-De0054082 | NCP | % | 76 | | | 70-130 | Pass | |
| o-Xylene | S22-De0054082 | NCP | % | 82 | | | 70-130 | Pass | |
| Xylenes - Total* | S22-De0054082 | NCP | % | 78 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | | | | | |
| Naphthalene | S22-De0054082 | NCP | % | 76 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | | | | | |
| Acenaphthene | S22-De0056365 | NCP | % | 82 | | | 70-130 | Pass | |
| Acenaphthylene | S22-De0056365 | NCP | % | 87 | | | 70-130 | Pass | |
| Anthracene | S22-De0056365 | NCP | % | 80 | | | 70-130 | Pass | |
| Benz(a)anthracene | S22-De0056365 | NCP | % | 72 | | | 70-130 | Pass | |
| Benzo(a)pyrene | S22-De0056365 | NCP | % | 86 | | | 70-130 | Pass | |
| Benzo(b&j)fluoranthene | S22-De0056365 | NCP | % | 77 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | S22-De0056365 | NCP | % | 73 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | S22-De0056365 | NCP | % | 91 | | | 70-130 | Pass | |
| Chrysene | S22-De0056365 | NCP | % | 98 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | S22-De0056365 | NCP | % | 83 | | | 70-130 | Pass | |
| Fluoranthene | S22-De0056365 | NCP | % | 81 | | | 70-130 | Pass | |
| Fluorene | S22-De0056365 | NCP | % | 86 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | S22-De0056365 | NCP | % | 81 | | | 70-130 | Pass | |
| Naphthalene | S22-De0056365 | NCP | % | 81 | | | 70-130 | Pass | |
| Phenanthrene | S22-De0056365 | NCP | % | 73 | | | 70-130 | Pass | |
| Pyrene | S22-De0056365 | NCP | % | 75 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | | | | | |
| Chlordanes - Total | S22-De0054932 | NCP | % | 120 | | | 70-130 | Pass | |
| 4.4'-DDD | S22-De0054932 | NCP | % | 80 | | | 70-130 | Pass | |
| 4.4'-DDE | S22-De0054932 | NCP | % | 104 | | | 70-130 | Pass | |
| 4.4'-DDT | S22-De0054932 | NCP | % | 107 | | | 70-130 | Pass | |
| a-HCH | S22-De0054932 | NCP | % | 96 | | | 70-130 | Pass | |
| Aldrin | S22-De0054932 | NCP | % | 86 | | | 70-130 | Pass | |
| b-HCH | S22-De0054932 | NCP | % | 99 | | | 70-130 | Pass | |
| d-HCH | S22-De0054932 | NCP | % | 93 | | | 70-130 | Pass | |
| Dieldrin | S22-De0054932 | NCP | % | 118 | | | 70-130 | Pass | |
| Endosulfan I | S22-De0054932 | NCP | % | 116 | | | 70-130 | Pass | |
| Endosulfan II | S22-De0054932 | NCP | % | 96 | | | 70-130 | Pass | |
| Endosulfan sulphate | S22-De0054932 | NCP | % | 92 | | | 70-130 | Pass | |
| Endrin | S22-De0054932 | NCP | % | 87 | | | 70-130 | Pass | |
| Endrin aldehyde | S22-De0054932 | NCP | % | 104 | | | 70-130 | Pass | |
| Endrin ketone | S22-De0050131 | NCP | % | 114 | | | 70-130 | Pass | |
| g-HCH (Lindane) | S22-De0054932 | NCP | % | 107 | | | 70-130 | Pass | |
| Heptachlor | S22-De0054932 | NCP | % | 106 | | | 70-130 | Pass | |
| Heptachlor epoxide | S22-De0054932 | NCP | % | 103 | | | 70-130 | Pass | |
| Hexachlorobenzene | S22-De0054932 | NCP | % | 95 | | | 70-130 | Pass | |
| Methoxychlor | S22-De0054932 | NCP | % | 122 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Polychlorinated Biphenyls** | | | | Result 1 | | | | | |
| Aroclor-1016 | S22-De0054932 | NCP | % | 102 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | S22-De0054932 | NCP | % | 128 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | S22-De0053651 | CP | % | 87 | | | 75-125 | Pass | |
| Cadmium | S22-De0053651 | CP | % | 91 | | | 75-125 | Pass | |
| Chromium | S22-De0053651 | CP | % | 87 | | | 75-125 | Pass | |
| Copper | S22-De0053651 | CP | % | 83 | | | 75-125 | Pass | |
| Lead | S22-De0053651 | CP | % | 81 | | | 75-125 | Pass | |
| Mercury | S22-De0053651 | CP | % | 108 | | | 75-125 | Pass | |
| Nickel | S22-De0053651 | CP | % | 88 | | | 75-125 | Pass | |
| Zinc | S22-De0053651 | CP | % | 111 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S22-De0051173 | NCP | mg/kg | 15 | 14 | 1.3 | 30% | Pass | |
| Cadmium | S22-De0051173 | NCP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S22-De0051173 | NCP | mg/kg | 40 | 39 | 2.1 | 30% | Pass | |
| Copper | S22-De0051173 | NCP | mg/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Lead | S22-De0051173 | NCP | mg/kg | 31 | 30 | 3.2 | 30% | Pass | |
| Mercury | S22-De0051173 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S22-De0051173 | NCP | mg/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Zinc | S22-De0051173 | NCP | mg/kg | < 5 | < 5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S22-De0053649 | CP | % | 3.9 | 3.8 | 3.8 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | S22-De0053653 | CP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C10-C14 | S22-De0053653 | CP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C15-C28 | S22-De0053653 | CP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH C29-C36 | S22-De0053653 | CP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH C6-C10 | S22-De0053653 | CP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH >C10-C16 | S22-De0053653 | CP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH >C16-C34 | S22-De0053653 | CP | mg/kg | < 100 | < 100 | <1 | 30% | Pass | |
| TRH >C34-C40 | S22-De0053653 | CP | mg/kg | < 100 | < 100 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Toluene | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Ethylbenzene | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| m&p-Xylenes | S22-De0053653 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| o-Xylene | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Xylenes - Total* | S22-De0053653 | CP | mg/kg | < 0.3 | < 0.3 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| Naphthalene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Acenaphthene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Acenaphthylene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Anthracene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benz(a)anthracene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(a)pyrene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(b&j)fluoranthene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Benzo(g.h.i)perylene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(k)fluoranthene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Chrysene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Dibenz(a.h)anthracene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluoranthene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluorene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Indeno(1.2.3-cd)pyrene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Naphthalene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Phenanthrene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Pyrene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Chlordanes - Total | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| 4.4'-DDD | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDE | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDT | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| a-HCH | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Aldrin | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| b-HCH | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| d-HCH | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Dieldrin | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan I | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan II | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan sulphate | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin aldehyde | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin ketone | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| g-HCH (Lindane) | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor epoxide | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Hexachlorobenzene | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Methoxychlor | S22-De0053653 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Toxaphene | S22-De0053653 | CP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polychlorinated Biphenyls** | | | | Result 1 | Result 2 | RPD | | | |
| Aroclor-1016 | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1221 | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1232 | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1242 | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1248 | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1254 | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1260 | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Total PCB* | S22-De0053653 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S22-De0053658 | CP | mg/kg | 11 | 6.8 | 45 | 30% | Fail | Q15 |
| Cadmium | S22-De0053658 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S22-De0053658 | CP | mg/kg | 8.4 | 5.0 | 50 | 30% | Fail | Q15 |
| Copper | S22-De0053658 | CP | mg/kg | 16 | 10.0 | 46 | 30% | Fail | Q15 |
| Lead | S22-De0053658 | CP | mg/kg | 14 | 8.9 | 41 | 30% | Fail | |
| Mercury | S22-De0053658 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S22-De0053658 | CP | mg/kg | 6.2 | < 5 | 48 | 30% | Fail | Q15 |
| Zinc | S22-De0053658 | CP | mg/kg | 42 | 25 | 48 | 30% | Fail | Q15 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S22-De0053659 | CP | mg/kg | 7.6 | 10 | 32 | 30% | Fail | Q15 |
| Cadmium | S22-De0053659 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S22-De0053659 | CP | mg/kg | 10 | 15 | 36 | 30% | Fail | Q15 |
| Copper | S22-De0053659 | CP | mg/kg | 42 | 21 | 67 | 30% | Fail | Q15 |
| Lead | S22-De0053659 | CP | mg/kg | 25 | 23 | 8.9 | 30% | Pass | |
| Mercury | S22-De0053659 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S22-De0053659 | CP | mg/kg | 5.8 | 6.2 | 5.7 | 30% | Pass | |
| Zinc | S22-De0053659 | CP | mg/kg | 52 | 47 | 10 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S22-De0053659 | CP | % | 5.5 | 5.3 | 3.8 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S22-De0053661 | CP | mg/kg | 2.7 | 2.6 | 4.7 | 30% | Pass | |
| Cadmium | S22-De0053661 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S22-De0053661 | CP | mg/kg | 7.2 | 6.4 | 11 | 30% | Pass | |
| Copper | S22-De0053661 | CP | mg/kg | 10 | 10 | 1.5 | 30% | Pass | |
| Lead | S22-De0053661 | CP | mg/kg | 8.5 | 7.6 | 11 | 30% | Pass | |
| Mercury | S22-De0053661 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S22-De0053661 | CP | mg/kg | < 5 | < 5 | <1 | 30% | Pass | |
| Zinc | S22-De0053661 | CP | mg/kg | 28 | 27 | 3.4 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S22-De0053666 | CP | mg/kg | 13 | 12 | 4.2 | 30% | Pass | |
| Cadmium | S22-De0053666 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S22-De0053666 | CP | mg/kg | 17 | 20 | 16 | 30% | Pass | |
| Copper | S22-De0053666 | CP | mg/kg | 9.7 | 9.9 | 2.3 | 30% | Pass | |
| Lead | S22-De0053666 | CP | mg/kg | 21 | 20 | 1.2 | 30% | Pass | |
| Mercury | S22-De0053666 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S22-De0053666 | CP | mg/kg | 7.6 | 7.4 | 3.3 | 30% | Pass | |
| Zinc | S22-De0053666 | CP | mg/kg | 20 | 18 | 7.6 | 30% | Pass | |

## Comments

V2- new version to split report 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 |
|---|---|
| N01 | F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis). |
| N02 | Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid. |
| N04 | F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. |
| N07 | Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs |
| 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:

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Chamath JHM Annakkage | Senior Analyst-Asbestos |
| Fang Yee Tan | Senior Analyst-Metal |
| Roopesh Rangarajan | Senior Analyst-Organic |
| Roopesh Rangarajan | Senior Analyst-Volatile |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

**NATA Accredited**
**Accreditation Number 1261**
**Site Number 20794**

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:** **Michelle Delandro**

**Report** **952797-W**
Project name ED PARK
Project ID 63325
Received Date Dec 21, 2022

| **Client Sample ID** | | | **TS** | **TB** | **FB** |
|---|---|---|---|---|---|
| **Sample Matrix** | | | **Water** | **Water** | **Water** |
| **Eurofins Sample No.** | | | **S22-De0053667** | **S22-De0053668** | **S22-De0053669** |
| **Date Sampled** | | | **Dec 21, 2022** | **Dec 21, 2022** | **Dec 21, 2022** |
| Test/Reference | LOR | Unit | | | |
| | | | | | |
| TRH C6-C10 | 1 | % | 71 | - | - |
| Naphthalene[N02] | 0.01 | mg/L | - | < 0.01 | - |
| **Total Recoverable Hydrocarbons** | | | | | |
| Naphthalene | 1 | % | 130 | - | - |
| TRH C6-C9 | 1 | % | 71 | - | - |
| **BTEX** | | | | | |
| Benzene | 1 | % | 100 | - | - |
| Ethylbenzene | 1 | % | 97 | - | - |
| m&p-Xylenes | 1 | % | 110 | - | - |
| o-Xylene | 1 | % | 93 | - | - |
| Toluene | 1 | % | 100 | - | - |
| Xylenes - Total | 1 | % | 97 | - | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | 130 | - | - |
| **Total Recoverable Hydrocarbons** | | | | | |
| TRH C6-C9 | 0.02 | mg/L | - | < 0.02 | - |
| TRH C6-C10 | 0.02 | mg/L | - | < 0.02 | - |
| TRH C6-C10 less BTEX (F1)[N04] | 0.02 | mg/L | - | < 0.02 | - |
| **BTEX** | | | | | |
| Benzene | 0.001 | mg/L | - | < 0.001 | - |
| Toluene | 0.001 | mg/L | - | < 0.001 | - |
| Ethylbenzene | 0.001 | mg/L | - | < 0.001 | - |
| m&p-Xylenes | 0.002 | mg/L | - | < 0.002 | - |
| o-Xylene | 0.001 | mg/L | - | < 0.001 | - |
| Xylenes - Total* | 0.003 | mg/L | - | < 0.003 | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | - | 117 | - |
| **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 |

| Client Sample ID | | | TS | TB | FB |
|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water |
| Eurofins Sample No. | | | S22-De0053667 | S22-De0053668 | S22-De0053669 |
| Date Sampled | | | Dec 21, 2022 | Dec 21, 2022 | Dec 21, 2022 |
| Test/Reference | LOR | Unit | | | |
| **Perfluoroalkyl carboxylic acids (PFCAs)** | | | | | |
| 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 | % | - | - | 93 |
| 13C5-PFPeA (surr.) | 1 | % | - | - | 82 |
| 13C5-PFHxA (surr.) | 1 | % | - | - | 96 |
| 13C4-PFHpA (surr.) | 1 | % | - | - | 87 |
| 13C8-PFOA (surr.) | 1 | % | - | - | 84 |
| 13C5-PFNA (surr.) | 1 | % | - | - | 85 |
| 13C6-PFDA (surr.) | 1 | % | - | - | 83 |
| 13C2-PFUnDA (surr.) | 1 | % | - | - | 88 |
| 13C2-PFDoDA (surr.) | 1 | % | - | - | 87 |
| 13C2-PFTeDA (surr.) | 1 | % | - | - | 62 |
| **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 | % | - | - | 88 |
| D3-N-MeFOSA (surr.) | 1 | % | - | - | 59 |
| D5-N-EtFOSA (surr.) | 1 | % | - | - | 54 |
| D7-N-MeFOSE (surr.) | 1 | % | - | - | 106 |
| D9-N-EtFOSE (surr.) | 1 | % | - | - | 93 |
| D5-N-EtFOSAA (surr.) | 1 | % | - | - | 86 |
| D3-N-MeFOSAA (surr.) | 1 | % | - | - | 66 |
| **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 | % | - | - | 104 |
| 18O2-PFHxS (surr.) | 1 | % | - | - | 100 |
| 13C8-PFOS (surr.) | 1 | % | - | - | 90 |

| Client Sample ID | | | TS | TB | FB |
|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water |
| Eurofins Sample No. | | | S22-De0053667 | S22-De0053668 | S22-De0053669 |
| Date Sampled | | | Dec 21, 2022 | Dec 21, 2022 | Dec 21, 2022 |
| 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 |
| 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 | % | - | - | 42 |
| 13C2-6:2 FTSA (surr.) | 1 | % | - | - | 59 |
| 13C2-8:2 FTSA (surr.) | 1 | % | - | - | 70 |
| 13C2-10:2 FTSA (surr.) | 1 | % | - | - | 100 |
| **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 |
|---|---|---|---|
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Sydney | Dec 22, 2022 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons | Sydney | Dec 22, 2022 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Sydney | Dec 22, 2022 | 14 Days |
| - Method: LTM-ORG-2010 BTEX and Volatile TRH | | | |
| Per- and Polyfluoroalkyl Substances (PFASs) | | | |
| Perfluoroalkyl carboxylic acids (PFCAs) | Brisbane | Dec 23, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Perfluoroalkyl sulfonamido substances | Brisbane | Dec 23, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Perfluoroalkyl sulfonic acids (PFSAs) | Brisbane | Dec 23, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) | Brisbane | Dec 23, 2022 | 28 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |

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**Address:** Level 1, 50 Margaret St
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NSW 2000

**Project Name:** ED PARK
**Project ID:** 63325

**Order No.:**
**Report #:** 952797
**Phone:** 02 8245 0300
**Fax:**

**Received:** Dec 21, 2022 5:50 PM
**Due:** Jan 9, 2023
**Priority:** 10 Day
**Contact Name:** Michelle Delandro

**Eurofins Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | Lead | Moisture Set | JBS&G Suite 2 | BTEXN and Volatile TRH | Per- and Polyfluoroalkyl Substances (PFASs) | BTEXN and Volatile TRH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X |
| **External Laboratory** | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | |
| 1 | DG05_W_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053649 | X | | | X | X | | | |
| 2 | DG05_W_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053650 | | | X | X | | | | |
| 3 | DG05_S_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053651 | | | X | X | | | | |
| 4 | DG05_S_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053652 | | | X | X | | | | |
| 5 | DG05_E_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053653 | X | | | X | X | | | |
| 6 | DG05_E_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053654 | | | X | X | | | | |
| 7 | DG05_N_5.0_0.1-0.2 | Dec 21, 2022 | | Soil | S22-De0053655 | | | X | X | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X |
| 8 | DG05_N_5.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053656 | | | X | X | | | | |
| 9 | DG16_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053657 | X | | | X | X | | X | |
| 10 | DG15_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053658 | X | | | X | X | | X | |
| 11 | DG09_E_3.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053659 | X | | | X | X | | | |
| 12 | DG09_E_5.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053660 | X | | | | | | | |
| 13 | DG09_W_2.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053661 | | | | X | X | | | |
| 14 | DG09_W_6.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053662 | X | | | | | | | |
| 15 | DG09_W_8.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053663 | X | | | | | | | |
| 16 | DG09_S_4.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053664 | X | | | | | | | |
| 17 | DG09_S_6.0_ | Dec 21, 2022 | | Soil | S22-De0053665 | X | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X |
| | 0-0.1 | | | | | | | | | | | | |
| 18 | QC20221221 | Dec 21, 2022 | | Soil | S22-De0053666 | X | | | X | X | | X | |
| 19 | TS | Dec 21, 2022 | | Water | S22-De0053667 | | | | | | | | X |
| 20 | TB | Dec 21, 2022 | | Water | S22-De0053668 | | | | | | X | | |
| 21 | FB | Dec 21, 2022 | | Water | S22-De0053669 | | | | | | | X | |
| 22 | DG05_W_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053670 | | X | | | | | | |
| 23 | DG05_W_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053671 | | X | | | | | | |
| 24 | DG05_S_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053672 | | X | | | | | | |
| 25 | DG05_S_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053673 | | X | | | | | | |
| 26 | DG05_E_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053674 | | X | | | | | | |
| 27 | DG05_E_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053675 | | X | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA # 1261 Site # 1254** | | | | | | | | | | X | X | | |
| **Sydney Laboratory - NATA # 1261 Site # 18217** | | | | | | X | X | X | X | X | X | X | X |
| 28 | DG05_N_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053676 | | X | | | | | | |
| 29 | DG05_N_10.0_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053677 | | X | | | | | | |
| 30 | DG16_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053678 | | X | | | | | | |
| 31 | DG16_0.6-0.7 | Dec 21, 2022 | | Soil | S22-De0053679 | | X | | | | | | |
| 32 | DG15_0.1-0.2 | Dec 21, 2022 | | Soil | S22-De0053680 | | X | | | | | | |
| 33 | DG15_0.2-0.3 | Dec 21, 2022 | | Soil | S22-De0053681 | | X | | | | | | |
| 34 | DG15_0.4-0.5 | Dec 21, 2022 | | Soil | S22-De0053682 | | X | | | | | | |
| 35 | DG09_E_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053683 | | X | | | | | | |
| 36 | DG09_W_10.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053684 | | X | | | | | | |
| 37 | DG09_S_8.0_0-0.1 | Dec 21, 2022 | | Soil | S22-De0053685 | | X | | | | | | |
| **Test Counts** | | | | | | 11 | 16 | 6 | 13 | 7 | 1 | 4 | 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

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** | | | | | | | |
| Naphthalene | mg/L | < 0.01 | | | 0.01 | Pass | |
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C6-C9 | mg/L | < 0.02 | | | 0.02 | Pass | |
| TRH C6-C10 | mg/L | < 0.02 | | | 0.02 | Pass | |
| **Method Blank** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Toluene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Ethylbenzene | mg/L | < 0.001 | | | 0.001 | Pass | |
| m&p-Xylenes | mg/L | < 0.002 | | | 0.002 | Pass | |
| o-Xylene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Xylenes - Total* | mg/L | < 0.003 | | | 0.003 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| Naphthalene | % | 104 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | | | | |
| TRH C6-C9 | % | 71 | | | 70-130 | Pass | |
| TRH C6-C10 | % | 72 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 84 | | | 70-130 | Pass | |
| Toluene | % | 82 | | | 70-130 | Pass | |
| Ethylbenzene | % | 88 | | | 70-130 | Pass | |
| m&p-Xylenes | % | 72 | | | 70-130 | Pass | |
| o-Xylene | % | 78 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 74 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Naphthalene | S22-De0051195 | NCP | mg/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | S22-De0051195 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| TRH C6-C10 | S22-De0051195 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | S22-De0051195 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Toluene | S22-De0051195 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Ethylbenzene | S22-De0051195 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| m&p-Xylenes | S22-De0051195 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| o-Xylene | S22-De0051195 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Xylenes - Total* | S22-De0051195 | NCP | mg/L | < 0.003 | < 0.003 | <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 |
|---|---|
| N02 | Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid. |
| N04 | F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. |
| 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:

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Jonathon Angell | Senior Analyst-PFAS |
| Raymond Siu | Senior Analyst-Volatile |



**Glenn Jackson**
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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