BAE Systems Australia – Williamtown Facilities Expansion – Precinct Entry Works

30 August 2024

Preliminary Site Investigation



Document Information

Preliminary Site Investigation,

BAE Systems Australia – Williamtown Facilities Expansion – Precinct Entry Works

Prepared by:

Senversa Pty Ltd
ABN: 89 132 231 380
144 Parry Street, Newcastle West, NSW 2302
tel:+61 2 8252 0000
www.senversa.com.au

Prepared for:

Built Pty Ltd
Level 1/155 - 157 Lambton Road
Broadmeadow NSW 2292

Revision	Date	Author	Reviewed	Approved	Detail
0	16 July 2024	Megan Ferguson	Naomi Lukeman	Naomi Lukeman	Final

Project Manager: Naomi Lukeman

Project Director: Andrei Woinarski

Disclaimer and Limitations:

This document is confidential and has been prepared by Senversa for use only by its client and for the specific purpose described in our proposal which is subject to limitations. No party other than Senversa's client may rely on this document without the prior written consent of Senversa, and no responsibility is accepted for any damages suffered by any third party arising from decisions or actions based on this document. Matters of possible interest to third parties may not have been specifically addressed for the purposes of preparing this document and the use of professional judgement for the purposes of Senversa's work means that matters may have existed that would have been assessed differently on behalf of third parties.

Senversa prepared this document in a manner consistent with the level of care and skill ordinarily exercised by members of Senversa's profession practising in the same locality under similar circumstances at the time the services were performed.

Permission should be sought before any reference (written or otherwise) is made public that identifies any people, person, address or location named within or involved in the preparation of this report. Senversa requires that this document be considered only in its entirety and reserves the right to amend this report if further information becomes available. This document is issued subject to the technical principles, limitations and assumptions provided herein in **Section 11.0**.

©2024 Senversa Pty Ltd

Senversa acknowledges the traditional custodians of the land on which this work was created and pay our respect to Elders past and present.

Executive Summary

Introduction and Scope of Works

Senversa Pty Ltd (Senversa) has been engaged by Built Pty Ltd (Built) to provide environmental consulting services to support the upgrade of the BAE Systems Australia (BAESA) Facility at Williamtown Drive, Williamtown NSW ('BAESA Facility'), as shown on **Figure 1**. The BAESA Facility is located southwest of Newcastle Airport and south of the Williamtown Royal Australian Air Force (RAAF) Base (the Base). It is understood that the facility is situated on Commonwealth owned land, which is leased to Newcastle Airport Limited.

This report details a desktop assessment and recent intrusive investigation works (i.e., a preliminary site investigation) completed within the part of the airport facility currently used by Astra Aerolab. It is understood that BAESA will be leasing the land for development of site access and the construction of a car park with associated security building, gates and fencing and landscaping. The stage of works is referred to as 'Precinct Entry Works' (PEW) and the area of assessment is hereafter referred to as 'the site'. This preliminary site investigation (PSI) report has been prepared to support the submission of a development application (DA) for the works. The site boundary and features are indicated on **Figure 1.**

The overall project objective is to provide ongoing environmental consulting services to Built in order to facilitate the next phase of the development of the site. The specific objective of this PSI is to assess the potential for contamination to be present at the site based on historic and current use and if contamination exists to assess whether the site can be made suitable for development following remediation (of remediation is required).

The PSI was performed in general accordance with the National Environment Protection (Assessment of Site Contamination) Measure 2013 (NEPM), comprising a desktop review of available information and a site inspection, as well as limited intrusive sampling. The scope of the PSI is summarised below:

- A desktop assessment of the site including a review of:
  - Available government and local council registers and certificates.
  - Historical aerial imagery.
  - Environmental setting information including topographical, geological and hydrogeological maps, and acid sulfate soil information.
  - Current and historic titles.
- Preliminary inspection completed on 20 May 2024 to identify potentially contaminating activities, look for visual signs of contamination, identify areas of potential concern.
- Based on the nature of the site, this PSI also included some targeted sampling of soil and groundwater which included installing three groundwater wells and excavating five test pits.

Findings

Based on the documents reviewed, the site appears to have moderate-high potential for contamination based on the historical use and data collected during limited soil assessments to date. The site consisted of bushland prior to being cleared by 1984, historical aerial imagery shows signs of development and industrial processes having occurred in the surrounding area since the 1990s. The development of the current BAESA Facility to the northeast of the site was observed to have taken place between 1993 and 1998. Historical titles indicate that the vast majority of the site was owned by private proprietors from 1904 to 2020 yet aerial photography indicates that the site remained vacant/unused during this period.

There is existing PFAS contamination in soils and waters at the Base and surrounds in the vicinity of the site associated with past use of AFFF products containing PFAS. The PFAS includes, *inter alia*,

perfluorooctane sulfonate (PFOS), perfluorohexane sulfanate (PFHxS) and perfluorooctanoic acid (PFOA).

An investigation was completed onsite between 20 and 29 May which involved the drilling and installation of 3 groundwater wells, to a maximum depth of 7 m bgl and excavation of five test pits, as well as collection and analysis of soil and groundwater samples.

Based on the project objectives and scope of works completed, and with consideration of the DQOs presented in **Section 3.1**, the findings are as follows:

Soil

Concentrations of the majority of analytes (including asbestos) were below the laboratory limit of reporting. Detectable concentrations of heavy metals were reported in all samples, however all were below the adopted criteria (where criteria exist).

MW02 0.0-0.1 and TP05 1.2-1.3 reported concentrations of PFOS which exceeded the ecological criteria of 0.01 mg/kg, with concentrations of 0.019 mg/kg and 0.0296 mg/kg respectively. Sample locations exceeding criteria are indicated on **Figure 3**. It is considered that these exceedances are likely to have resulted from onsite used of AFFF, or a result of the interaction of impacted regional groundwater and soil.

With respect to acid sulfate soils, net acidity results (excluding acid neutralising capacity) were compared to the criteria presented in ASSMAC (1998) and NASSG (2018). Exceedances of the criteria (18 moles H+/t) were not noted in the samples collected. Nevertheless, a sulfuric odour was noted in the natural sands, and PASS are known to be present at the Base. Any excavation undertaken at depths in excess of 2 m BGL, or those which cause dewatering of the site should be undertaken as per the site acid sulfate soils management plan.

Groundwater

The groundwater results indicate that:

- Heavy metals were detected in all samples however only exceeded criteria in two groundwater samples:
  - Chromium concentrations exceeded the ecological criteria of 0.001 mg/L in MW01 and MW02 (0.003 and 0.007 mg/L respectively).
  - Copper exceeded the ecological criteria of 0.0014mg/L in the duplicate sample collected from MW02 with a concentration of 0.006 mg/L
- Concentrations of PFOS and the sum of PFOS and PFHxS were detected above ecological and recreational criteria in all three samples.
- Other minor detections were noted in all wells. however were below criteria (where criteria exist) and are not considered to represent an unacceptable risk to site users.
- PFAS compounds are present in groundwater, however are considered typical for the regional area and do not necessarily trigger the need for remediation. Groundwater abstraction and use is restricted, and managed through the Williamtown Management Area. Risks to site users are managed through the site PFAS management plan (Senversa, 2023c).

Recommendations

Analysis of source/pathway/receptor linkages indicated that a number of potentially complete linkages were present. Furthermore, only a limited number of sample locations were assessed as part of this PSI and the majority of the site is unassessed and represents a data gap. Based on the sites current use and the management plans for the site, and general restrictions based on the site location, the risk to site users from soil and/or groundwater contamination is considered low.

Whilst ASS were not detected in the samples collected at the site, PASS are known to be present at the Base and as such, any excavation undertaken at depths in excess of 2 m BGL, or those which cause dewatering of the site should be undertaken as per the site acid sulfate soils management plan.

Contents

Executive Summary ..... **ii**

List of Acronyms ..... **vii**

1.0 Introduction and Objectives **1**

1.1 Introduction 1
1.2 Background 1
1.3 Objectives 1
1.4 Scope of Works 2
1.5 Relevant Legislation and Guidance 3

2.0 Site Information **4**

2.1 Site Identification 4
2.2 Environmental Setting 4

3.0 Site History **7**

3.1 Aerial Photography 7
3.2 Council Planning Certificate – Section 10.7 9
3.3 NSW EPA Records 9
3.3.1 Contaminated Land Register and Records of Notices 9
3.3.2 NSW EPA Licensed Activities and Notices Search 9
3.3.3 Delicensed Premises Regulated by the NSW EPA 10
3.3.4 NSW EPA PFAS Investigation Program 10
3.4 Certificate of Title 10
3.5 Summary of Site History Review 11
3.6 Contamination Summary of the Site Surrounds 12

4.0 Site Inspection **14**

5.0 Sampling and Analysis Data Quality Plan **15**

5.1 Data Quality Objectives 15

6.0 Assessment Criteria **17**

7.0 Assessment Methodology **18**

7.1 Fieldwork Summary 18
7.2 Fieldwork Methodology 18

8.0 Discussion of Results **21**

8.1 Soil 21
8.1.1 Field Observations 21
8.1.2 Soil Analytical Results 21

8.2 Groundwater 22
8.2.1 Field Observations 22
8.2.2 Groundwater Analytical Results 22
8.3 Quality Assurance and Quality Control 22
9.0 Conceptual Site Model 23
9.1 Background 23
9.2 Potential Contaminant Sources 23
9.3 Pathways 23
9.4 Potential Receptors 24
9.5 Assessment of Source-Pathway-Receptor Linkage 24
10.0 Conclusions and Recommendations 26
10.1 Conclusions 26
10.2 Recommendations 27
11.0 Principles and Limitations 28
12.0 References 29

Tables in Text

Table 2.1: Site Identification 4
Table 2.2: Environmental Setting 5
Table 3.1: Historical Aerial Photograph Review 7
Table 3.2: Contaminated Sites Notified to NSW EPA (1 km buffer) 9
Table 3.3: NSW EPA Licensed Activities (1 km buffer) 10
Table 3.4: Summary of NSW EPA Notices 10
Table 3.5: Summary of Land Titles 10
Table 3.6: Site Summary 12
Table 5.1: Data Quality Objectives 15
Table 6.1: Adopted Assessment Criteria 17
Table 7.1: Fieldwork Summary 18
Table 7.2: Assessment Methodology 18
Table 9.1: Potential Contaminant Sources 23
Table 9.2: Source Pathway Receptor Linkages 24
Table 11.1: Principles and Limitations of Investigation 28

Appendices

Figures

Tables

Appendix A: LotSearch Report

Appendix B: Historical Titles

Appendix C: Section 10.7 Certificate

Appendix D: Data Validation

Appendix E: Borehole Logs

Appendix F: Field Forms

Appendix G: Calibration Certificates

Appendix H: Photolog

Appendix I: Laboratory Reports

List of Acronyms

Acronym	Definition
AFFF	Aqueous Film Forming Foam
ACF	Aircraft Coating Facility
ACM	Asbestos Containing Material
ADWG	Australian Drinking Water Guidelines
AHD	Australian Height Datum
ANC	Acid Neutralising Capacity
AS	Australian Standard
ASC	Assessment Of Site Contamination
ASRIS	Australian Soil Resource Information System
ASS	Acid Sulfate Soils
ASSMAC	Acid Sulfate Soils Management Advisory Committee
ASSMP	Acid Sulfate Soil Management Plan
ANZECC	Australian And New Zealand Environment And Conservation Council
BAESA	Bae Systems Australia
bTOC	Below Top Of Casing
BTEX	Benzene, Toluene, Ethylbenzene, And Xylenes
CLM Act	*Contaminated Land Management Act 1997*
COC	Chain Of Custody
CoPC	Contaminant Of Potential Concern
CRC CARE	Cooperative Research Centre For Contamination Assessment And Remediation Of The Environment
CSM	Conceptual Site Model
DGV	Default Guideline Value
DO	Dissolved Oxygen

Acronym	Definition
DP	Deposited Plan
DQI	Data Quality Indicator
DQO	Data Quality Objective
EC	Electrical Conductivity
EIL	Ecological Investigation Level
EPA	Environment Protection Authority (Nsw)
ESL	Ecological Screening Level
HIL	Health Investigation Level
HSL	Health Screening Level
IP	Interface Probe
LNAPL	Light Non-Aqueous Phase Liquid
m	Metre
m AHD	Metres Australian Height Datum
m bgl	Metres Below Ground Level
mg/kg	Milligrams Per Kilogram
mg/L	Milligrams Per Litre
MW	Monitoring Well
NATA	National Association Of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NHMRC	National Health And Medical Research Council
OCP	Organochlorine Pesticides
OPP	Organophosphorus Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PASS	Potential Acid Sulfate Soils

Acronym	Definition
PCB	Polychlorinated Biphenyls
PEW	Precinct Entry Works
PFAS	Per And Polyfluoroalkyl Substances
PFHxS	Perfluorohexane Sulfonic Acid
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonic Acid
PID	Photo-Ionisation Detector
PSI	Preliminary Site Investigation
RAAF	Royal Australian Air Force
RPD	Relative Percentage Difference
QA	Quality Assurance
QC	Quality Control
SEPP	State Environment Planning Policy
STP	Sewage Treatment Plant
SWL	Standing Water Level
TRH	Total Recoverable Hydrocarbons
µg/kg	Micrograms Per Kilogram
µg/L	Micrograms Per Litre
uPVC	Un-Plasticised Polyvinyl Chloride
VOC	Volatile Organic Compound
WQM	Water Quality Meter

1.0 Introduction and Objectives

1.1 Introduction

Senversa Pty Ltd (Senversa) has been engaged by Built Pty Ltd (Built) to provide environmental consulting services to support the upgrade of the BAE Systems Australia (BAESA) Facility at Williamtown Drive, Williamtown NSW ('BAESA Facility'), as shown on **Figure 1**. The BAESA Facility is located southwest of Newcastle Airport and south of the Williamtown Royal Australian Air Force (RAAF) Base (the Base). It is understood that the facility is situated on Commonwealth owned land, which is leased to Newcastle Airport Limited.

This report details a desktop assessment and recent intrusive investigation works completed within the part of the airport facility currently used by Astra Aerolab. It is understood that BAESA will be leasing the land for development of site access and the construction of a car park with associated security building, gates and fencing and landscaping.. The stage of works is referred to as 'Precinct Entry Works' (PEW) and the area of assessment is hereafter referred to as 'the site'. This preliminary site investigation (PSI) report has been prepared to support the submission of a development application (DA) for the works. The site boundary and features are indicated on **Figure 1.**

1.2 Background

Built has been engaged by BAESA to undertake the design and construction of the Williamtown Airport expansion and is currently undertaking works which include:

- Refurbishment work of the existing BAESA facility.
- Expansion of the North and South Hangars including:
  - Development work for hangar extensions.
  - Excavation and dewatering of pad footings.
  - Excavation of strip pads.
  - Service trenches.
  - Installation of underground tanks (Aqueous Film Forming Foam [AFFF] retention tank; and the wash bay oil interceptor tank).

Senversa has thus far been engaged by Built to provide environmental consulting consisting of provision of a per- and polyfluoroalkyl substances (PFAS) management plan; an acid sulfate soil management plan (ASSMP); and a number of both *in-situ* and *ex-situ* soil waste classification services. Additionally, Senversa has completed a detailed site investigation associated with the redevelopment of the Aircraft Coating Facility (ACF) area in the western portion of the airport facility.

1.3 Objectives

The overall project objective is to provide ongoing environmental consulting services to Built in order to facilitate the next phase of the development of the site.

The specific objective of this PSI is to assess the potential for contamination to be present at the site based on historic and current use and if contamination exists to assess whether the site can be made suitable for development following remediation (of remediation is required). Specifically, this PSI considers:

- The potential for the contamination to pose a risk to human health or ecological receptors (both on-site and off-site).

1.4 Scope of Works

The PSI was performed in general accordance with the National Environment Protection (Assessment of Site Contamination) Measure 2013 (NEPM), comprising a desktop review of available information and a site inspection. The scope of the PSI is summarised below:

- A desktop assessment of the site including a review of:
  - The NSW Environment Protection Authority (EPA) contaminated land register.
  - Historical aerial imagery.
  - Environmental setting information including topographical, geological and hydrogeological maps.
  - Acid sulfate soil information.
  - A list of registered groundwater bores within a 1 km radius of the site.
  - Council information for the site held on the Section 10.7 certificate.
  - Current and historic titles.
- Preliminary inspection completed on 20 May 2024 to identify potentially contaminating activities, look for visual signs of contamination, identify areas of potential concern.

Based on the nature of the site, this PSI also included some targeted sampling of soil and groundwater which broadly comprised:

- Underground service clearance on 20 May 2024 by a Telstra-accredited service locator (Advanced Ground Locations).
- Excavation of five test pits using a 5-tonne excavator to a maximum depth of 1.4 m bgl.
- Drilling three groundwater wells using a Geoprobe drilling rig to a maximum depth of 7 metres below ground level (m bgl
- Collection of soil and groundwater samples from each location and analysis for contaminants of potential concern (CoPC), including:
  - Total recoverable hydrocarbons (TRH).
  - Benzene, toluene, ethylbenzene, xylene (BTEX).
  - Heavy metals[1].
  - Polycyclic aromatic hydrocarbons (PAH).
  - Organochlorine/organophosphorus pesticides (OCP/OPP).
  - Polychlorinated biphenyls (PCB).
  - Phenols.
  - Asbestos.
  - Chromium reducible sulfur suite (acid sulfate soils).
- Preparation of this report.

To support this PSI, LotSearch Pty Ltd (LotSearch) was engaged by Senversa to undertake a search of historical aerial images, (current and historic titles , and publicly available information relating to the environment, land-use activities and various government records. The compiled LotSearch Report (LotSearch 2024), including the sources and limitations of information used are provided in **Appendix A**, title searches are included in **Appendix B**.

[1] Arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc.

1.5 Relevant Legislation and Guidance

This report has been prepared with reference to the following legislation and guidance:

- ANZECC & ARMCANZ (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 2, Aquatic Ecosystems – Rationale and Background Information (Chapter 8)*. Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand.
- ANZG (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Australian and New Zealand Governments and Australian state and territory governments.
- Friebel and Nadebaum (2011). *Health screening levels for petroleum hydrocarbons in soil and groundwater*. Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) Technical Report No. 10.
- HEPA (2020). *PFAS National Environmental Management Plan* (NEMP). Version 2.0. National Chemicals Working Group of the Heads of EPAs Australia and New Zealand (PFAS NEMP).
- NEPC (2013) *National Environment Protection (Assessment of Site Contamination) Amendment Measure* (No.1) (ASC NEPM).
- NHMRC (2011). *Australian Drinking Water Guidelines* (ADWG) updated January 2022. National Health and Medical Research Council.
- NSW DEC (2007). *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination*. Department of Environment and Conservation.
- NSW EPA (2014). *Waste Classification Guidelines – Part 1: Classifying Wastes*.
- NSW EPA (2017). *Guidelines for the NSW Site Auditor Scheme* (3rd edition).
- NSW EPA (2020) *Consultants reporting on contaminated land – Contaminated Land Guidelines* (NSW EPA, 2020).
- NSW EPA (2022). *Sampling design: Contaminated Land Guidelines*.
- Standards Australia/Standards New Zealand (1998). *Water quality – Sampling – Guidance on sampling of groundwaters*, AS/NZS 5667.11:1998.

2.0 Site Information

2.1 Site Identification

Site identification details are provided in **Table 2.1**.

Table 2.1: Site Identification

Item	Details
Site Address	Jeffries Circuit, Williamtown NSW 2318.
Title Plan Identifier	Part of Proposed Lot 100, and Proposed Lot 101, and 102 in Lot 11, DP 1036501, 38 Cabbage Tree Road.
Site Area	The site is approximately 1.13 hectares. The site is accessed via Jerries Circuit.
Geographic Coordinates (approximate site centre)	Easting: 391049.2945. Northing: 6369501.1437. (GDA2020 / MGA56).
Municipality	Port Stephens Council.
Zoning[2]	The majority of the site is zoned B7 – Business Park. The northern-most portion of the site that extends onto the BAESA Facility is zoned SP2 – Defence/Air Transport Facility.
Current Occupier and Land Use	The site is currently vacant and used by Astra Aerolab. The wider development area is used for aircraft maintenance.
Historical Use	Vacant land.

2.2 Environmental Setting

A summary of the site environmental setting is provided below in **Table 2.2**. The information is sourced from the Lotsearch report as well as a desktop contamination assessment previously undertaken by AECOM (2022[3]) for the Base.

[2] Port Stephens Local Environmental Plan 2013
[3] AECOM Australia Pty Ltd, *BAESA – F35 MRO&U Facilities, Environment – Desktop Contamination Assessment,* 5 September 2022 (AECOM, 2022).

Table 2.2: Environmental Setting

Item	Description
Meteorology	A review of the Bureau of Meteorology website indicated the following long-term weather averages for the Williamtown RAAF Weather Station 061078 (located approximately 1 km to the northeast of the wider assessment area) for the years 1942-2024. • Mean maximum temperatures range from 17.2°C in July to 28.3°C in January. The long-term average maximum temperature for the site is 23.2°C. • Mean minimum temperatures range from 6.5°C in July to 18.2°C in January and February. The long-term average minimum temperature for the site is 12.5°C. Mean annual rainfall at the wider assessment area is recorded as 1124.4 millimetres over the recorded period, with the mean monthly maximum rainfall of 126.9 millimetres recorded in March, and the mean monthly minimum rainfall being 60.1 millimetres in September.
Topography	Williamtown airport is located within low-lying areas associated with the Lower Hunter River. The region is characterised by low sand dunes, sand sheets and estuarine mud flats. The site itself is relatively flat and lies at approximately 4m Australian height datum (AHD).. The site is in general keeping with the surrounding topography and there were no signs of localised cutting and filling.
Hydrology	There are no creeks or culverts on the site. Several unnamed water courses are present to the southeast of the site, with the nearest travelling along Aerospace Avenue. They appear to drain into the Fourteen Foot Drain located approximately 1.75 km south of the site, which ultimately flows into Fullerton Cove. The closest water body to the site are effluent lagoons located approximately 20 m east of the site. Additionally, Lake Cochran is located approximately 210 m north of the site. As reported by AECOM (2022), surface water run-off in the southwestern corner of the Base, likely including the site, is directed to Lake Cochran before discharging into Dawsons Drain. Fullerton Cove, forming part of the Hunter Wetlands National Park, is situated approximately 2.5 km southwest of the site and is the nearest natural water body to the site.
Soil, salinity risk, acid sulfate soil	A review of eSPADE 2.2 indicated that the site and surrounds lie within a landscape of Pleistocene beach ridges on the Tomago Coastal Plain, described as uncleared dry and wet heath. Soils comprise deep, well-drained humus podzols on ridges with deep, poorly drained peaty/humus podzols in swales and deep, very poorly drained acid peats in swamps. Limitations of the landscape are listed as wind erosion hazards, non-cohesive soil, foundation hazard, permanent high water tables, seasonal water logging, groundwater pollution hazard and possible potential acid sulfate soils. The ASRIS Atlas of Australian Acid Sulphate Soils and Salinity suggests that there is a low probability (6-70%) of occurrence of acid sulfate soils at the site. Previous investigation works reported in AECOM 2022 indicated investigation works in the vicinity of the site indicated that some of the sandy soils at depths below 2 m bgl at the site indicate a relatively low potential of acid generation and comprise potential acid sulfate soil (PASS). If soils below 2 m will be disturbed during construction or if dewatering will lower groundwater below 2 m depth, then construction should be undertaken with reference to the Senversa (2023b) *Acid Sulfate Soil Management Plan*. The site is located on an area where dryland soil salinity is not considered a risk.
Geology and naturally occurring asbestos	Based on a review of the LotSearch (2024) report and the *Geological Survey of NSW 1:100 000 Newcastle* geological map, the site is situated on Quaternary sand, comprising marine-deposited and aeolian-reworked costal sand dunes. The site is not located within an area reported to have naturally occurring asbestos.

Item	Description
Hydrogeology	Assessments on the wider airport site by Senversa (2024) and AECOM (2022) reported that the site is located on highly permeable sandy soils with a shallow aquifer flowing south/southwest. The shallow groundwater table rises rapidly with rainfall and rises to intersect with surface water in drainage channels. LotSearch (2024) indicated that there were six registered groundwater bores within a 1 km radius of the site, with the closest being approximately 512 m southeast of the site. The wells were installed for varying purposes including dewatering, water supply and monitoring. The wells were installed to depths ranging from 4.8 m bgl to 11 m bgl. The available drilling logs indicate that the lithology consisted of sand to 7.0 m bgl, followed by brown rock (type of rock was not specified) to 7.5 m bgl. This was underlain by a 0.9 m layer of sand, followed by rock to the termination depth of 8.57 m bgl. Senversa installed five groundwater wells in the BAE compound to the west of south hangar in May 2024 (Senversa, 2024) and observed the groundwater to b shallow (less than 1.5 m BGL) and the geology to be consistent with the desktop assessment. Groundwater at the site and surrounding area is likely to flow in a generally southern/southeasterly direction towards Fullerton Cove, located approximately 2.5 km to the southwest of the site. The areas to the anticipated downgradient of the site are located within the Williamtown Primary Management Zone, where abstraction of groundwater for any purpose is not permitted.
Sensitive Receptors	Significant features in the vicinity of the site include the following: • Agricultural and pasture lands, a water catchment reserve, Kooragang Nature Reserve, Worimi Conservation Area, and Tilligerry State Conservation Area. • Major residential and rural residential settlements at Medowie to the north and Raymond Terrace to the west. • Hunter Water Corporation pumping stations and groundwater extraction bore field located to the north, east and west of the site. LotSearch (2024) reported that there are high potential groundwater dependent ecosystems located in the vicinity of the site (Lake Cochran approximately 200 m northwest).
Surrounding Land Use	• North: The site is bound to the north by the BAESA facility, with Williamtown Drive, the Newcastle Airport short stay car park and terminal located to the northeast. Lake Cochran is located approximately 210 m north of the site. The Newcastle Airport runway is located approximately 860 m north of the site, with the Base situated on the opposing side of the runway. • East: Immediately east of the site is vacant land, followed by a footpath and effluent lagoons. Long stay carparks associated with the airport are located approximately 300 m east of the site. • South: A newly constructed road network (consisting of Newton Parade, Jeffries Circuit and Aerospace Avenue) followed by bushland are situated to the south of the site. • West: Vacant land followed by bushland are situated to the west of the site.

3.0 Site History

3.1 Aerial Photography

Historical aerial photographs obtained by LotSearch (**Appendix A**) were reviewed as part of the assessment of the site history. The information obtained is summarised in **Table 3.1**.

Table 3.1: Historical Aerial Photograph Review

Photograph	Observations	
	Site	**Surrounding Land**
Date: 1954 Black and white Quality - Poor	The site consisted of high-density bushland. A section of the northern boundary was taken up with what appeared to be a section of cleared vegetation for a road or path.	Surrounding land appeared to be cover in high-density bushland. Dirt roads were located just to the north of site. Evidence of a small watercourse was visible the southeast of the site towards the southwest.
Date: 1966 Black and white Quality - Average	The site appeared relatively unchanged.	High-density bushland was observed to the west and southeast of the site. A clearing of vegetation was observed to the north of the site, including sections that may have been dirt roads. A portion of cleared land approximately 150 m to the southeast of the site appeared. A water body could be observed in the northeastern corner.
Date: 1976 Colour Quality - Average	The site appeared relatively unchanged; however, bushland density was reduced.	A further clearing of land was observed approximately 70 m north of the site and 150 m east of the site. Vegetation to the west and southeast of site was observed to have some tree clearing and be slightly lower in density. A grassy riverbed was observed to appear directly to the east of site. A water body was apparent to the north of site.
Date: 1984 Black and white Quality - Average	High-density bushland and vegetation were cleared. Trees were evident along the northern border and the surface of the site appeared to be covered in grassy land.	Further clearing of vegetation was observed to the west of site. A water body was observed to appear where the grassy riverbed was located previously.
Date: 1993 Colour Quality - Good	Site appeared relatively unchanged. A roughly 30 m strip of sand was visible on the southern tip of site.	Dirt road observed traversing east to west to the north of the site. Thicker vegetation appeared in the area directly north of site and seemed to become denser surround the northern water body. A layer of vegetation from the water bank began to cover a small section of the water body to the east of site. A dried-up riverbed was apparent to the south of site approximately 150 m in width, with what appeared to be sand deposited sediments. A cluster of trees surrounded the eastern edge.. Cleared grassy land appeared south of the dried-up riverbed.

Photograph	Observations	
	Site	**Surrounding Land**
Date: 1998 Colour Quality - Poor	Site appeared relatively unchanged.	A large building immediately north of the site was constructed, alongside a small carpark in its vicinity. A carpark was constructed further northeast of the site alongside several roads that appeared to be concreted. Water body to the east of site continued to increase in vegetation covering the surface of the water. The riverbed located directly south of the site became active with water clearly visible in the photograph. The land surrounding the stream appeared to be sand.
Date: 2007 Colour Quality - Good	Site appeared relatively unchanged. Slightly discolouring of the deposited sand was observed, as well as a dried-up stream running from the centre of the northern boundary to the southern boundary.	The building immediately north of the site underwent further development and expansion. A second carpark was constructed to the left of the building. Several smaller buildings were constructed between BAESA and the site. Airport parking was observed to be extended as the short stay car park was developed to the northeast of the site alongside the retention pond. Water body to the east of site was observed to continue to fill in with deposited sediment. Riverbed located south of site observed to contain vegetation. Water visible in the streambed.
Date: 2010 Colour Quality - Good	Site appeared relatively unchanged. A tree appeared on the southern tip of the site.	Further development was observed as a building was constructed just north of the existing building. Remainder of surrounding area appeared relatively unchanged.
Date: 2015 Colour Quality - Good	Site appeared relatively unchanged.	Water body immediately east of site observed to be cleared of vegetation growth over the surface of the water. Vegetation surrounding riverbed to the south had increased=. Detention pond to the northeast appeared to increase in size as vegetation covering water surface diminished in size. Remainder of surrounding land appeared relatively unchanged.
Date: 2018 Colour Quality - Good	Eastern side of site appeared to increase in vegetation cover.	Vegetated land to the west and east of site was observed to increase in size as tree density was increased. Sediment material surrounding riverbed to the south was observed to darken as vegetation continued to increase. Airport construction to the northeast of site appeared relatively unchanged.
Date: 2021 Colour Quality - Good	All vegetation appeared to be cleared off-site. Grassy coverage was gone and replaced with a light grey material; likely gravel/sand based.	Land to the south of site appeared to be cleared, several roads were constructed which appeared to be concreted. Bushland to the west of site was cleared and grassy land cover was observed to be replaced with light grey gravel sediment. Airport construction to the northeast of site appeared relatively unchanged.

3.2 Council Planning Certificate – Section 10.7

No matters pertaining to Section 59(2) Contaminated Land Management Act (CLM Act) 1997 were included on the planning certificates for the site.

The certificates state that a number of State Environmental Planning Policies (SEPP) apply to the site, the most relevant to this report being SEPP (Resilience and Hazard) 2021.

Part A, Section 10 of the planning certificate states that Council have adopted policies or has been notified of adopted policies of another public authority on matters relating to the risk of acid sulfate soils and aircraft noise. The following adopted policies apply to the land:

- Clause 7.1 Acid Sulfate Soils of the Port Stephens Local Environmental Plan 2013 applies to the land.
- Council's records indicate that the land subject of this certificate is wholly or partly affected by RAAF Base Williamtown and Salt Ash Air Weapons Range 2025 Australian Noise Exposure Forecast (10 August 2011) (the 2025 ANEF Map). Certain development may be constrained in accordance with the relevant provisions of Australian Standard 2021-2015 Acoustics-Aircraft noise intrusion-Building siting and construction, the Port Stephens Local Environmental Plan 2013 and the Port Stephens Development Control Plan 2014.

Part B of the planning certificate states that the land is within the Williamtown RAAF Base PFAS Management Area. The Department of Defence is undertaking a long-term environmental investigation and assessment of the Base and surrounding areas as relates to PFAS contamination. The NSW Government recommends that residents living inside the Williamtown RAAF Base PFAS Management Area follow precautionary measures to minimise their exposure to PFAS chemicals originating from the RAAF Base.

A copy of the Section 10.7 certificate for the site is included in **Appendix C**.

3.3 NSW EPA Records

3.3.1 Contaminated Land Register and Records of Notices

A search of the list of NSW contaminated sites notified to EPA was undertaken for the site and 1 km buffer area . Results indicated that there was one record for the site, as summarised in **Table 3.2**. There were no other sites within the buffer area recorded on the register.

Table 3.2: Contaminated Sites Notified to NSW EPA (1 km buffer)

Site Name	Address	Activity Associated with Contamination	Management Class	Distance/Direction from Site
Hunter Land Effluent Pond	38 Cabbage Tree Road, Williamtown	Other Industry	Regulation under CLM Act not required	On-site

A search of the NSW EPA contaminated sites Record of Notices revealed that no regulatory notices have been issued under the CLM Act within 1 km of the site.

3.3.2 NSW EPA Licensed Activities and Notices Search

A search of the NSW EPA record of licensed activities issued under the Protection of the Environment Operations Act 1997 (POEO Act) was undertaken within a 1 km radius of the site. A summary of the one current environment protection license (EPL) within the buffer area is summarised in **Table 3.3**.

Table 3.3: NSW EPA Licensed Activities (1 km buffer)

EPL	Organisation	Address	Activity	Distance/Direction from Site
5195	Waterways of Port Stephens local government area excluding the waters and wetlands	Raymond Terrace	Other activities	Network of features – approximately 130 m south

A search of the NSW EPA Record of Notices was undertaken for the site and the surrounding 1 km buffer zone. Two Notices were found within the dataset buffer, with results summarised in **Table 3.4**.

Table 3.4: Summary of NSW EPA Notices

Number	Notice Type	Organisation	Address	Offence	Issued Date	Distance/Direction from Site
1079424 1095778	s.91 Clean Up Notice	Terrace Earthmoving Pty Ltd	168 Cabbage Tree Road, Williamtown	Unlawful transporting or depositing of waste	15/11/2007 06/02/2009	598 m west

3.3.3 Delicensed Premises Regulated by the NSW EPA

The NSW EPA remains the regulatory body for some activities no longer required to be licenced under the POEO Act. There were no regulated activities identified within the 1 km buffer area (**Appendix A**).

3.3.4 NSW EPA PFAS Investigation Program

The site and land immediately adjacent are located within the Williamtown Management Area, either within the Williamtown RAAF Base (on-site, and to the north and east), or the Primary Management Area (on-site, and to the south, east and west). Groundwater abstraction is precluded in these areas for any purpose[4].

3.4 Certificate of Title

A search of NSW land titles records was undertaken to determine historical site ownership of the lot comprising the site. A summary of records is presented in **Table 3.5** below and provided in **Appendix B**.

Table 3.5: Summary of Land Titles

Date	Registered Proprietor	Inferred Land Use
Part Lot 43 DP 1045602		
1904 – 1932	Henry Slade, Junior.	Vacant/unused but appears to be held by private owners.
1932 – 1932	Edmund Whilworth Hodges (Blacksmith). Samuel John Cox (Farmer). (Transmission Application not investigated).	
1932 – 1954	Alfred Henry Slade (Contractor).	

[4] https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/community/williamtownmanagementareamap.pdf accessed 27 June 2024.

Date	Registered Proprietor	Inferred Land Use
1954 – Date	The Commonwealth of Australia. (Acquired for Defence purposes at Williamtown).	Defence purposes.
Part Lot 11 DP 1036501		
1904 – 1932	Henry Slade, Junior.	Vacant/unused but appears to be held by private owners.
1932 – 1932	Edmund Whilworth Hodges (Blacksmith). Samuel John Cox (Farmer). (Transmission Application not investigated).	
1932 – 1957	Alfred Henry Slade (Contractor).	
1957 – 1957	Doris Irene Slade (Widow). Keith Aubrey Slade (Farmer). (Section 94 Application not investigated).	
1957 – 1973	Doris Irene Slade (Widow).	
1973 – 1989	Leslie Slade (Builder). Margaret Patricia Slade (Married Woman).	
1989 – 2020	B & M Ellison Pty. Limited.	
2020 – 2020	Newcastle City Council . Port Stephens Council.	
2020 – 2020	Newcastle Airport Partnership Company 1 Pty Limited Newcastle Airport Partnership Company 2 Pty Limited Newcastle Airport Partnership Company 3 Pty Limited Newcastle Airport Partnership Company 4 Pty Limited	Vacant/unused but appears to be held by industrial/commercial.
2020 – Date	# Greater Newcastle Aerotropolis Pty Ltd (Various Share Structures).	

3.5 Summary of Site History Review

Based on the documents reviewed, the site appears to have moderate-high potential for contamination based on the historical use and data collected during limited soil assessments to date across the wider Base. The site consisted of bushland prior to being cleared by 1984, historical aerial imagery shows signs of development and industrial processes having occurred in the surrounding area since the 1990s. The development of the current BAESA Facility to the northeast of the site was observed to have taken place between 1993 and 1998. Historical titles indicate that the vast majority of the site was owned by private proprietors from 1904 to 2020 yet aerial photography indicates that the site remained vacant/unused during this period.

The Hunter Land Effluent Ponds on the airport site are currently listed as contaminated, however regulation under the CLM Act is not required.

Council records do not list any issues relating to contamination on the Section 10.7 planning certificates however do note that the site is located within the Williamtown RAAF Base PFAS Management Area In 2017, the NSW Government released the NSW EPA Williamtown Management Area. The Primary Management Zone, located west of site, was issued with institutional controls that groundwater, bore water, and surface water should not be used or ingested.

3.6 Contamination Summary of the Site Surrounds

There is existing PFAS contamination in soils and waters at the Base and surrounds in the vicinity of the site associated with past use of AFFF products containing PFAS. The PFAS includes, *inter alia*, perfluorooctane sulfonate (PFOS), perfluorohexane sulfanate (PFHxS) and perfluorooctanoic acid (PFOA).

This PFAS contamination is managed by Defence under the PMAP, which identifies the nature of the contamination risks and sets out a plan for Defence to manage the elevated risks of PFAS contamination on and emanating from the Base. It also documents the options development and assessment process, and rationale for the proposed response actions to manage identified risks.

As part of works to support the development, sampling of soils and groundwater at the Base has been conducted to assess contamination conditions, including PFAS. The previous environmental investigations conducted to support the project have included:

- Sampling of soil and groundwater at the site and northern hanger area conducted by Douglas Partners (DP, 2022a).
- A summary by AECOM (2022) of previous contamination investigations of contamination, including PFAS, at the Base and surrounds.

Senversa has prepared an overarching PFAS management plan for the site (Senversa, 2023c), a summary of the PFAS (and other contaminants, as well as ASS) status at the site is presented in **Table 3.6.**

Table 3.6: Site Summary

Area	Summary Description
Regional / Base PFAS Contamination	AECOM (2022) summarised relevant previous contamination investigations and monitoring in the vicinity (but not on) of the site, mostly associated with assessment of PFAS contamination associated with the Base. AECOM (2022) reported: • Multiple PFAS sources identified hydraulically upgradient and cross-gradient of the site associated with the Base. The following two PFAS source areas are in the vicinity of the site: ▪ Lake Cochran: located approximately 40 metres to the north-west of the Site. Lake Cochran receives surface water run-off from across the Base which has been reported to contain PFAS dissolved in surface water. Surface water runoff from Lake Cochran discharges to Dawson Drain. ▪ The Sewage Treatment Plan (STP) (Facility 410): located 150 metres to the east of the site. The STP treats wastewater, containing dissolved PFAS, generated at the Base. • All major surface water drains at Base contain PFAS in surface water and sediments. Surface water run-off from the south-western portion of the Base, in the vicinity of the Site, discharges through Dawsons Drain. • The PFAS sources are contributing to a groundwater plume which extends from the Base to the south. Sampling in the vicinity of the Site indicated PFOS concentrations were in the range of 0.07 – 50 µg/L, which is above the adopted assessment criteria for human health. There are high PFAS concentrations (known as Southern Area Plume, which comprises high concentrations of PFAS (namely PFOS + PFHxS > 50 µg/L) to the west of the site. • Due to the shallow nature of groundwater and the highly permeable sandy soils, it is known that there is interaction between PFAS in surface water and groundwater.
Pre-existing Site PFAS Conditions	DP (2022a) used a judgemental sampling approach targeting areas of expected disturbance. Nine borehole locations were completed, with one borehole sample location (306) within the southern hangar portion of the site and eight locations (301 to 305, 307, 308 and D1) across the remainder of the BAESA facility. Boreholes were progressed to a maximum depth of 3 m bgl, with field screening and logging, and then converted to groundwater monitoring wells. Selected soil samples were analysed for a range of contaminants of potential concern (CoPC), including PFAS (total and leachable). Groundwater samples were analysed for a range of CoPC, including PFAS. While the sampling was conducted using methods generally in line with relevant EPA made or endorsed guidance, it was targeted to specific areas. Screening of PFAS results against assessment criteria in NEMP relevant to the commercial/industrial land use setting are summarised below. These data describe the pre-existing PFAS contamination condition.

Area	Summary Description
	Soil • PFAS concentrations (PFOS+PFHxS and PFOA) were not detected in soil samples at concentrations exceeding the adopted health-based criteria in the PFAS NEMP for commercial/industrial land use • PFAS concentrations were reported in soil samples below the adopted ecological-based assessment criteria in the PFAS NEMP. An exception was one soil sample that exceeded the ecological (indirect exposure) criterion for PFOS. The average concentration was low and less than the adopted assessment criteria. • Soil leachability was assessed (for waste classification purposes) via TCLP, with concentrations reported in a similar range as groundwater (refer below). **Groundwater** • PFAS was detected in all groundwater samples. • Concentrations of PFOS+PFHxS exceeded the health-based criteria for recreational exposure in two wells (304 and 305). PFAS concentrations were less than the criteria in other wells. The average concentration was less than the recreational criteria – this is also considered applicable for incidental contact during intrusive works. • Concentrations of PFOS+PFHxS in all groundwater monitoring wells exceeded the adopted assessment criterion for drinking water. • Concentrations of PFOS in all groundwater wells exceeded the adopted ecological assessment criteria for 99% (0.00023 ug/L) and 95% (0.13 ug/L) protection of freshwater species. **Waste Classification** • Preliminary screening of results against waste classification guidelines was completed by Senversa (2023) that indicate waste soil is likely to be classified as General Solid Waste (GSW) (non-putrescible), subject to verification sampling in line with EPA sampling design guidance. • Waste water (e.g. groundwater) requiring disposal off-site would be classified as Liquid Waste.
Potential Site Co-Contaminants	AECOM (2022) reported the following was also present on the site: • Isolated detection of phenolic compounds in groundwater upgradient of the site. • Bulk fuel storage has occurred to the north and east of the site. • Fill material of unknown origin is likely to be present across the site. • Asbestos containing material within services and pits. • Potential ASS at depths exceeding 2 m bgl. • The use of hazardous building materials in adjacent properties (lead paint/ACM). DP (2022a) conducted sampling of soil and groundwater at the facility, including within the Schedule 1 site area, with key findings including: • No obvious indications of gross contamination (i.e. staining or odours) were observed within the boreholes. PID field screening of soil-sub samples indicated the absence of gross volatile hydrocarbon impact (PID <5 ppm) in the samples screened. • Asbestos was not detected above the report limit in the samples that were analysed. The site is located within low probability acid sulfate soils (ASS) below 3 m ground surface. However, DP (2022b) states if soils below 2 m will be disturbed during construction, or if dewatering will lower groundwater below 2 m depth, then construction should be undertaken with reference to an Acid Sulfate Soil Management Plan (ASSMP). Senversa prepared an ASSMP for the site in 2023 (Senversa, 2023b).

4.0 Site Inspection

A sit walkover was undertaken on 20 May 2024 to ground truth the findings from the desktop review. Site features are identified on **Figure 1**. Notable site features include:

- The site is an irregular shaped parcel of land within the main Base site. Currently the site is largely unfenced with the exception of the fencing along the northern boundary separating the site from the BAESA Facility).
- The site is accessed via Jeffries Circuit off Aerospace Avenue. Despite the site being unfenced, the Base is only accessible to approved visitors and inducted site personnel therefore illegal access to the site is unlikely to have occurred.
- There were no signs of illegal dumping at the site. Anecdotal evidence from the Built site representatives was that regular safety and environment audits are conducted by BAE and the house keeping at the site was evidently kept to a high standard.
- The site is bound by the BAESA Facility to the north, vacant land to the east and west, as well as Jeffries Circuit and Newton Parade to the south.
- The site surface comprises gravel with an unsealed strip of grass along the northern site perimeter (i.e., the section of the site that is within the BAESA Facility boundary). There were no drains or drainage channels identified at the site.
- Evidence of stockpiles (scraped areas on the ground) was noted however no stockpiles were present, and the ground surface was flat.

5.0 Sampling and Analysis Data Quality Plan

5.1 Data Quality Objectives

The data quality objectives (DQOs) for this assessment were developed in accordance with the ASC NEPM and the AS4482.1. They focus on a logical rationale to inform data collection and assessment of the useability of the data in terms of accuracy and reliability in forming conclusions on the condition of the element of the environment being investigated. The DQO process comprises seven steps, as summarised in **Table 5.1** below.

Table 5.1: Data Quality Objectives

Step	DQO
Step 1 – State the Problem (project objective)	The site is proposed for redevelopment to include a new car park facility as well as a guard hut/office building. The site is located within the larger RAAF Williamtown base and there are known contaminants within the base area (PFAS, hydrocarbons) as well as potential acid sulfate soils, and the possibility that asbestos may be present. A state significant development application is being submitted for the site and prior to this, a preliminary site investigation with limited intrusive sampling is required in order to form a conclusion as to the site suitability for the proposed use.
Step 2 – Identify the Decisions (goals)	The decisions required to address the stated problem are discussed below: • Does the site history, or the current use, indicate that the site may be contaminated? • Are there any potentially unacceptable risks to human health and/or ecological receptors from contaminants in soil and/or groundwater at the site? • Is there any evidence of, or potential for, migration of contaminants from the site? • Are the data generated by sampling and analysis reliable? • Are the data sufficient to address the objectives of the investigation?
Step 3 – Identify Information Inputs	The inputs to make the above decisions include: • Review of historical data including historical reports containing relevant environmental information. • Field observations made during intrusive investigation works. • Laboratory analytical data of collected soil and groundwater samples. • Screening-level assessment criteria from guidelines made or approved by the EPA. • Quality assurance (QA) procedures and quality control (QC) data.
Step 4 – Define the Study Boundaries	The study boundaries included: • The spatial site boundary as shown on **Figure 1**. • Subsurface boundaries were limited to the depth of the investigation (maximum of 7.0 m bgl). • The temporal boundary was limited to the data collected during these investigation works (20 - 29 May 2024). Constraints to the study included the presence of underground services.

Step	DQO
Step 5 – Develop the Decision Rules	The following decision rules were applied: *Are the data sufficient to address the objectives of the investigation?* • If it is assessed that the data generated through this investigation are reliable, the sampling and analytical strategy was followed in the field, and that sufficient data could be collection upon which a reliable conclusion on be drawn, then the data will be considered sufficient. • If it is assessed that additional information is required to further reduce the uncertainties associated with the distribution and characterisation of contamination, or the appropriate field protocols were not/could not be adequately adhered to, then appropriate recommendations for further assessment and/or investigation (including for assessment of potential risks) will be provided. *Is there risk of harm to human health or the environment or of off-site migration of contamination?* • If the data (both field and laboratory) meet the adopted screening levels (including aesthetic criteria) within the context of the proposed site setting, then the site will be considered generally suitable for commercial/industrial land use. • If the data do not meet the adopted screening levels within the context of the proposed site setting, but an assessment of source-pathway-receptor linkages indicates no complete exposure pathways exist, then the site will be considered generally suitable for ongoing commercial/industrial use. However, if exposure pathways do exist, then the site may not be suitable for use without some form of remediation or management. *Are the data generated by sampling and analysis suitable for use?* • If the data collected have been subjected to an assessment of quality assurance/quality control and found to be suitable for use in this assessment, the data will be considered reliable.
Step 6 – Specify the Limits of Decision Error	Specific limits for this project have been adopted in accordance with the appropriate guidance from the ASC NEPM, appropriate data quality indicators (DQIs) used to assess QA/QC and standard Senversa procedures for field sampling and sample handling. Possible decision errors are as follows. 1. Sampling errors that occur when the sampling program does not adequately detect the variability of a contaminant from point to point across the site (i.e. the samples collected are not representative of site conditions). 2. Measurement errors that occur during sample collection, handling preparation, analysis and data reduction. To minimise the potential for decision errors, the data was assessed against pre-determined DQIs for precision, accuracy, representativeness, comparability, completeness and sensitivity. The pre-determined DQIs established for this project are discussed in **Appendix D.** If any of the DQIs were not met, further assessment was undertaken to assess whether the non-conformance significantly affected the usefulness of the data for interpretation. Corrective actions may include requesting further information from samplers and/or analytical laboratories, downgrading of the quality of the data or alternatively, re-collection of the data.
Step 7 – Optimise the Design for Obtaining Data	Various strategies for developing a statistically based sampling plan are identified in the ASC NEPM and NSW EPA (2022), including judgemental; random; systematic and stratified sampling patterns. A targeted intrusive sampling program was developed to characterise the potential for contamination to be present within site soils and/or groundwater, based on the results of the desk top assessment. The sampling methodology for the strategy proposed by Senversa to be adopted for this investigation are described in **Section 7.0**.

6.0 Assessment Criteria

Sample results collected as part of this investigation were assessed against criteria set out in ASC NEPM for use in site investigation for the following land use scenarios, based on the proposed development, the land use zoning of 'B7 – Business Park' and 'SP2 – Defence/Air Transport Facility' under the *Port Stephens Local Environmental Plan 2013*, the surrounding environmental conditions, and the neighbouring receptors:

- Human Health: commercial/industrial assuming a predominately sandy soil (based on the encountered lithology at the site).
- Ecological: commercial/industrial based on an old suburb with high traffic volume and urban residential and public open space.

The following assessment criteria listed below in **Table 6.1** were adopted for the purpose of preliminary screening concentrations of contaminants.

Table 6.1: Adopted Assessment Criteria

Media	Receptor	Adopted Assessment Criteria
Soil	Human Health	• Health investigation level D (HIL D), applicable for commercial/industrial in ASC NEPM. • Health screening level D (HSL D) for vapour intrusion, sand, 0-<1 m in ASC NEPM. This is considered conservative for samples collected from greater than 1 m. • HSL direct contact applicable for commercial/industrial (HSL D) in CRC CARE (protective of intrusive maintenance workers). • HIL D, applicable for commercial/industrial in PFAS NEMP.
	Ecological	• Ecological investigation level (EIL) for commercial/industrial sites. As site specific values are not being used, the most conservative added contaminant limit is used for screening purposes. • Ecological screening level (ESL) for coarse soils in commercial/industrial sites. • Interim ecological guidelines for direct and indirect exposure in PFAS NEMP.
	Infrastructure	Management Limits were used to assess the potential impacts of petroleum hydrocarbons which consider potential fire and explosive hazards and the effects of petroleum hydrocarbons on buried infrastructure.
Groundwater	Human Health	• HSL D for vapour intrusion, sand aquifer, 2-4 m in ASC NEPM. Sand has been selected since it is the dominant soil type at the site and the most conservative for assessment of fill material. • Recreational guidelines have been considered in respect to incidental ingestion by intrusive maintenance workers as a conservative measure.
	Ecological	• Groundwater data have been compared to the default guideline values (DGV) provided in the Australian and New Zealand Guidelines (2018) for fresh and marine water quality. The DGVs for freshwater environments - 95% species protection level (slightly to moderately disturbed) has been adopted. • Groundwater data have also been compared to 95% species protection level (slightly to moderately disturbed) in PFAS NEMP.
Waste	Soil	• The soil material has been assessed according to the six steps for classifying waste as per the *Waste Classification Guidelines Part 1: Classifying Waste* (NSW EPA, 2014) and *Addendum to the Waste Classification Guidelines (2014) – Part 1: classifying waste* (NSW EPA, 2016).
Soil and Groundwater	Aesthetics	• Aesthetic considerations were also included in the assessment, and included the noting of miscoloured or odorous soils, the inclusion of anthropogenic material, or groundwater which might prove to be offensive from an aesthetic point of view, as detailed in the ASC NEPM.

7.0 Assessment Methodology

7.1 Fieldwork Summary

Fieldwork was undertaken by appropriately trained Senversa personnel in accordance with relevant national and state guideline documents and Senversa standard operating procedures. A summary of the fieldwork is provided in **Table 7.1**. it is noted that the number of location sis less than the recommended minimum sampling locations presented in NSW (2022) *Sampling design part 1 – application* however is considered sufficient for the purposes of this PSI.

Table 7.1: Fieldwork Summary

Date	Description
20 May 2024	• Site walkover to identify any potential areas of environmental concern and constraints to the potential investigation locations. • Clearance of the proposed investigation locations for underground services by a Telstra-accredited service locator (Advanced Ground Locations). • Advancement of three boreholes using a Geoprobe drilling rig and installation of groundwater wells to a maximum depth of 7 m bgl. Whilst drilling was occurring, a Senversa field scientist collected soil samples at changes in lithology from each borehole. • Development of each well to prepare for sampling (development included removing sufficient volumes of water until sediment load was reduced and physical parameters had stabilised).
28 May 2024	• Gauging and sampling of the three newly installed wells on-site (MW01, MW02 and MW03).
29 May 2024	Excavation of five test pits using a 5-tonne excavator to a maximum depth of 1.4 m bgl and collection of soil samples at changes in lithology. Gravimetric sampling for asbestos analysis (field quantification) was also undertaken in all test pit locations. Sample locations were selected based on a judgemental sampling patterns.

7.2 Fieldwork Methodology

Sample locations are indicated on **Figure 2**. The assessment methodology is summarised in **Table** 7.2.

Table 7.2: Assessment Methodology

Task	Details
Service Clearance	Advanced Ground Locations (a Telstra-accredited service locator) cleared the proposed groundwater monitoring well and test pit locations for underground services prior to commencing intrusive works. Radio-detection technology was used with reference to a Before You Dig Australia report.
Drilling Method and Soil Sampling	Locations were excavated using a hand auger to 1.2 m bgl (or until practical refusal) in case of services, then drilled to the maximum extent using push tubes on a tracked Geoprobe drilling rig or hollow flight augers during groundwater well installation. Test pits were excavated using a small excavator, test pits were backfilled with arisings in the approximate order of excavation. Soil samples were collected from each location from the surface and where changes in lithological layers or impacts where observed to the depth of the investigation. Where fill was observed, a sample of the underlying natural material was also collected. Samples were collected from drilling arisings, or directly from the excavator bucket.

Task	Details
Soil Logging	Locations were logged in accordance with Australian Standard AS1726-2017 and the ASC NEPM (as amended, May 2013). Visual and olfactory observations (e.g. material composition, inclusions, moisture, odours, sheen, staining, asbestos) were recorded. Borehole and test pit logs are presented in **Appendix E**.
Groundwater Well Installation and Development	Subsurface conditions were logged during drilling, including the depth of groundwater strike. Hollow flight augers were used to complete drilling to the target depth, typically 2 m beyond the observed groundwater strike (a maximum depth of 7 m bgl). The wells were constructed using 50 mm diameter un-plasticised polyvinyl chloride (uPVC) slotted screen from the maximum depth of drilling to approximately 1 m above the occurrence of groundwater. A graded sand was placed within the bore annulus adjacent to the screen to a depth of 0.5 m above the height of the screen, above which a minimum of 1 m bentonite seal was placed above the sand. The borehole was backfilled with arisings from the bentonite to the surface. Development entailed removing standing water using a steel bailer until water flowed clear, measured geochemical parameters stabilised or three well volumes were removed. Well development records are provided in **Appendix F**.
Groundwater Gauging and Sampling	The standing water level (SWL) in all monitoring wells was measured by an oil/water interface probe (IP), prior to commencing sampling. The IP was considered appropriate for identifying light non-aqueous phase liquid (LNAPL). Newly installed monitoring wells were sampled approximately one week after well development by low flow sampling methods using a peristaltic pump. The wells were purged, and geochemical parameters were measured *ex-situ* in a flow cell by a water quality meter (WQM). Sampling commenced when the measured parameters were stabilised and at least 2 L of water had been removed. Groundwater gauging and sampling field records are included in **Appendix F**. Calibration certificates for the IP, WQM and peristaltic pump are included in **Appendix G**.
Sample Handling	<u>Soil</u> Samples were collected directly from the push tube or tip of the hollow flight auger or drilling, and directly from the excavator bucket for test pitting. The samples were collected into laboratory supplied glass jars, or bags for asbestos and acid sulfate soil analysis and placed into an insulated cooler containing ice. <u>Groundwater</u> Once field parameters were stable and at least 2 L had been purged, samples were collected directly into laboratory prepared and supplied vials and bottles. Sample containers were filled to minimise headspace and placed into an insulated cooler containing crushed ice.
Field Screening	Volatile organic compound (VOC) headspace field measurements were collected using a MultiRAE gas detector at regular intervals (at least every 1 m, or where changes in lithology or soil characteristics were encountered). Calibration certificates are included in **Appendix G.**
Decontamination	Sampling equipment was dedicated wherever possible to avoid the potential for cross contamination. Where this was not possible, the equipment was decontaminated between sample locations. Details on the dedication and decontamination of sampling equipment is described below: • The hand auger was decontaminated between sampling locations by triple rinsing with Liquinox® detergent solution, then tap water, and then laboratory supplied water. • Dedicated disposable nitrile gloves were worn and replaced between each sample. • The IP was decontaminated prior to use and between wells by washing with detergent solution and double rinsing with potable water.

Task	Details
Laboratory Analyses	Primary and quality control samples were submitted for analysis under strict chain of custody (COC) procedures to a laboratory using NATA accredited methods for the analytes of interest. Samples were analysed for the following CoPC: • TRH. • BTEX. • Heavy metals. • PAH. • OCP/OPP. • PCB. • Phenols. • Asbestos. • Chromium reducible sulfur suite (acid sulfate soils).
Quality Control Samples	Analysis of field duplicate and triplicate, equipment rinsate blank, trip blank and trip spike samples.
Waste Management	Spoil from the installation of monitoring wells and purged groundwater from subsequent development and sampling was stored in three 205 L drums. The waste was classified in accordance with the NSW EPA (2014) *Waste Classification Guidelines* and disposed at a landfill facility licenced to accept the waste by a licensed waste removalist (Envirotreat).

8.0 Discussion of Results

8.1 Soil

8.1.1 Field Observations

Sampling locations are shown on **Figure 2**, borelogs are provided in **Appendix E**. Photographs of the lithology encountered throughout the investigation are provided in **Appendix H**. Field observations during test pitting and drilling are summarised below:

- Fill material consisting of gravelly sand was encountered at all locations to a maximum depth of 1.5 m bgl. Asbestos was not observed in any of the sample locations.
- Quaternary sediments were observed at all locations underlying the fill material. The findings were consistent with the desktop assessment.
- Groundwater was generally encountered at depths of between 5 and 6 m bgl during drilling, standing water levels were measured at between 1 m and 3 m bgl during gauging rounds.
- VOC concentrations were measured by a photoionisation detector (PID) at all locations however no VOCs were recorded (i.e., the maximum PID reading was 1 ppm at one location, with all other locations recording 0 ppm).
- Sulfuric odours were observed within the natural sand in all locations. No other odours or staining were noted.

8.1.2 Soil Analytical Results

Soil analytical data are presented in **Table 1 - 5** appended to this report. Laboratory reports are included in **Appendix I**.

Concentrations of the majority of analytes (including asbestos) were below the laboratory limit of reporting. Detectable concentrations of heavy metals were reported in all samples, however all were below the adopted criteria (where criteria exist).

MW02 0.0-0.1 and TP05 1.2-1.3 reported concentrations of PFOS which exceeded the ecological criteria of 0.01 mg/kg, with concentrations of 0.019 mg/kg and 0.0296 mg/kg respectively. Sample locations exceeding criteria are indicated on **Figure 3**.

Eight soil samples collected from 1.2 to 4.6 m bgl were analysed for the presence of acid sulfate soils using reducible chromium suite analysis . Soil pH was very mildly acidic to alkaline (5.9 - 8.4 pH units. Analytical results indicated reduced inorganic sulfur in all samples was less than the detection limit of <10 H+/t, however the samples indicated some level of acid neutralising capacity (ANC) (values ranged from 75 to 124 moles H+/t).

In accordance with the national ASS guidance, as the efficacy of the ANC has not been confirmed, net acidity results excluding ANC were compared to the criteria presented in ASSMAC (1998) and NASSG (2018). Exceedances of the criteria (18 moles H+/t) were not noted in the samples collected. Nevertheless, a sulfuric odour was noted in the natural sands, and PASS are known to be present at the Base. Any excavation undertaken at depths in excess of 2 m BGL, or those which cause dewatering of the site should be undertaken as per the site acid sulfate soils management plan.

8.2 Groundwater

8.2.1 Field Observations

Groundwater gauging records and field measurements of physiochemical parameters are presented in **Table 6** and **Table 7** and summarised below:

- The standing water levels ranged between 0.7 m bTOC (MW01) and 1.4 m bTOC (MW02, MW03).
- The electrical conductivity of groundwater ranged between 368.5 µS/cm (MW01) and 70.9 µS/cm (MW03) indicating the groundwater across the site is fresh.
- The pH of the groundwater ranged between 5.64 (MW01) and 5.25 (MW03) indicating the groundwater is acidic.
- The redox (Eh) value of the groundwater ranged from -269.2 mV (MW01) to -314.5 mV (MW02) indicating reducing conditions.
- The dissolved oxygen was recorded between 0.1 mg/L (MW01) and 0.12 mg/L (MW03), indicating a low oxygen environment, consistent with the redox data.
- The temperature of the groundwater was recorded as 22 °C in all samples.
- Groundwater was generally described as light yellow and non-turbid. A strong sulfur odour was observed in all locations.

8.2.2 Groundwater Analytical Results

Groundwater analytical data are presented in **Table 7**. Laboratory reports are included in **Appendix I**, exceedances are indicated on **Figure 4**.

Concentrations of the majority of analytes were below the laboratory limit of detection in all groundwater samples analysed, or below criteria where criteria exist. The following detections and/or exceedances were noted:

- Heavy metals were detected in all samples however only exceeded criteria in two groundwater samples:
  - Chromium concentrations exceeded the ecological criteria of 0.001 mg/L in MW01 and MW02 (0.003 and 0.007 mg/L respectively).
  - Copper exceeded the ecological criteria of 0.0014mg/L in the duplicate sample collected from MW02 with a concentration of 0.006 mg/L
- Low concentrations of naphthalene, albeit below criteria, were detected in all three samples.
- Cis-1,2-dichlororethene was detected in MW02 however was very low (4 µg/L) and below criteria. The laboratory reporting limit is 5 µg/L and a further round of sampling would be required before an accurate conclusion on this result could be drawn.
- Detectable concentrations of ethylbenzene, and 1,2,4-trimethylbenzen were recorded in MW02 however concentrations were low and did not exceed criteria.
- Concentrations of PFOS and the sum of PFOS and PFHxS were detected above ecological and recreational criteria in all three samples.

8.3 Quality Assurance and Quality Control

The QA/QC program was completed in accordance with the seven step DQO process. Achievement of the DQOs was demonstrated by reference to the DQIs which are displayed in **Appendix D**.

The data validation procedure used in the assessment of field and laboratory QA/QC data indicated that the reported analytical results were representative of the soil and groundwater conditions at the sampled locations. The quality of the analytical data is considered acceptably reliable for the purpose of this investigation. Further discussion on QA/QC is provided in **Appendix D.**

9.0 Conceptual Site Model

9.1 Background

The following section discusses the findings of the investigation through the use of a CSM to describe relevant contamination sources, pathways and receptors, and their linkages based on the continued use of the site for commercial/industrial purposes.

The site has been used for commercial and industrial purposes associated with the operation of an airport since approximately 1998, before which the land appeared to be vacant. The majority of the site is covered in bitumen and is used for carparking purposes, although numerous skip bins and a large warehouse are present onsite. The western and southern perimeter are also surfaced with grass.

9.2 Potential Contaminant Sources

Based on the site history, background data, the intrusive investigation and Senversa's professional experience, the contaminants of potential concern associated with current and historical land uses undertaken within the site and surrounding area are considered to include the following:

Table 9.1: Potential Contaminant Sources

	Potential Source	Key Contaminants of Concern
Onsite	**Soil**: Uncontrolled fill material, potential underground fuel storage, localised fuel spills/usage.	Metals and metalloids (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc); monocyclic aromatic compounds, including benzene, toluene, ethylbenzene and xylenes ('BTEX'); total recoverable hydrocarbons; polycyclic aromatic hydrocarbons; phenols; pesticides; PFAS and asbestos.
Onsite	**Groundwater**: impacts migrated onto site from neighbouring properties and wider site, including PFAS and phenolic compounds.	
Offsite	**Soil**: PFAS impacts at the RAAF Base located hydraulically upgradient at the site.	
	Groundwater: PFAS compounds identified in groundwater upgradient at the site and also phenolic compounds identified. In addition, bulk fuel storage has been identified to the north and east of the site (hydraulically up and cross gradient).	

9.3 Pathways

The primary potential exposure pathways of concern at the site are as follows:

- Migration pathways:
  - Disturbance of fill material resulting in generation of dust.
  - Erosion of fill/topsoil particularly around the grassed areas by surface water resulting in soil particle displacement.
  - Leaching of contaminants via infiltrating surface waters, particularly in the grassed areas resulting in leachate migrating downwards into the underlying groundwater table.
  - Discharge of groundwater to nearby surface water bodies.

- Exposure pathways are considered to include:
  - Direct contact with soils by construction/maintenance workers (e.g. underground service installation/maintenance).
  - Incidental ingestion or inhalation of soils and/or asbestos (either surface soils in the grassed areas, soils at depth by construction/maintenance workers or particulates released into the air through disturbance of soils [e.g. dust generated by excavation or grass cutting]).
  - Direct contact with, or ingestion of, groundwater (during excavation works).
  - Inhalation of vapours emanating from the subsurface.
  - Groundwater dispersion to surface water receptors and potential direct contact with/ingestion by fauna within the wetlands and uptake by wetland vegetation.

9.4 Potential Receptors

Key potential receptors have been identified as:

- Current site users (commercial/industrial) and potential future site users both onsite and surrounding the site.
- Workers carrying out installation or maintenance works at the site both onsite and surrounding the site.
- Grass, trees and soil fauna both onsite and surrounding the site.
- Groundwater (ecological) both onsite and surrounding the site.
- Downgradient sensitive receptors, including Fullerton Cove given the mobile nature of some pf the contaminants identified in groundwater, particularly PFAS compounds.

9.5 Assessment of Source-Pathway-Receptor Linkage

The following assessment of risk has been compiled based on the data collected as part of this site assessment.

Table 9.2: Source Pathway Receptor Linkages

Pathway	Receptor	Complete Linkage
Inhalation of contaminated dust (from soils).	• Current site users (industrial) and potential future site users. • Workers carrying out installation or maintenance works at the site.	**Potentially complete –** assessment of shallow soils in a limited number of locations did not indicate contamination at levels which may pose a risk to site users, however there are large areas of the site not yet assessed. There is the potential for contamination to exist in as yet unassessed areas of the site and the pathway is considered potentially complete.
Inhalation of vapours/ground gases emanating from the subsurface.		**Potentially Complete** – although samples to date have not indicated that there are concentrations of hydrocarbons exceeding vapour criterion, there are data gaps which exist and therefore the potential for contamination exist in other parts of site. The risk of vapour inhalation is therefore potentially complete.
Dermal contact with and/or accidental ingestion of contaminated soils.		**Potentially Complete** – Although concentrations of CoPC did not exceed the direct contact risk criteria, some PFAS compounds were detected in locations across the site above 2 m depth and there is a risk to intrusive maintenance workers at the site.

Pathway	Receptor	Complete Linkage
Dermal contact with and/or accidental ingestion of contaminated groundwater.		**Incomplete** – Although groundwater was encountered at depth of less than 2 m bgl in most locations and is impacted by PFAS, the risk of contact (accidental or otherwise) by future maintenance workers is low given the site is managed under a PFAS management plan which details all PPE requirements and restrictions on groundwater use. The site and anticipated immediate downstream human health receptors are located within the Williamtown Water Management Area where abstraction of groundwater for any use is precluded, the risk to other human health receptors is considered to be minimal.
Transport of contamination to underlying groundwater aquifers and off-site migration.	• Adjacent sensitive receptors e.g. Fullerton Cove	**Potentially Complete** – groundwater is impacted by PFAS on a regional scale and is likely to be flowing onto the site from upgradient sources and from the site in a generally southerly/south-easterly direction towards Fullerton Cove. Fishing at Fullerton Cove has and is regulated primarily due to the impacts of PFAS.

10.0 Conclusions and Recommendations

10.1 Conclusions

Senversa Pty Ltd (Senversa) has been engaged by Built to prepare a preliminary site investigation to support the upgrade of the BAESA Facility at Williamtown Drive, Williamtown NSW. The BAESA Facility is located southwest of Newcastle Airport and south of the Williamtown RAAF Base. This report details the desktop and intrusive works completed on the portion of the site referred to as the 'Precinct Entry Works' to support the submission of a state significant development application.

The site has largely been vacant or used for storage since the airport and surrounds was developed. g. Previous investigations located to the north and east of the site in hydraulically up and cross gradient directions indicate that groundwater below the site (and regionally) are likely to be impacted by PFAS and acid sulfate soils are present below the site.

An investigation was completed onsite between 20 and 29 May which involved the drilling and installation of 3 groundwater wells, to a maximum depth of 7 m bgl and excavation of five test pits, as well as collection and analysis of soil and groundwater samples.

Based on the project objectives and scope of works completed, and with consideration of the DQOs presented in **Section 3.1**, the findings are as follows:

Soil

Concentrations of the majority of analytes (including asbestos) were below the laboratory limit of reporting. Detectable concentrations of heavy metals were reported in all samples, however all were below the adopted criteria (where criteria exist).

MW02 0.0-0.1 and TP05 1.2-1.3 reported concentrations of PFOS which exceeded the ecological criteria of 0.01 mg/kg, with concentrations of 0.019 mg/kg and 0.0296 mg/kg respectively. Sample locations exceeding criteria are indicated on **Figure 3**. It is considered that these exceedances are likely to have resulted from onsite used of AFFF, or a result of the interaction of impacted regional groundwater and soil.

With respect to acid sulfate soils, net acidity results (excluding acid neutralising capacity) were compared to the criteria presented in ASSMAC (1998) and NASSG (2018). Exceedances of the criteria (18 moles H+/t) were not noted in the samples collected. Nevertheless, a sulfuric odour was noted in the natural sands, and PASS are known to be present at the Base. Any excavation undertaken at depths in excess of 2 m BGL, or those which cause dewatering of the site should be undertaken as per the site acid sulfate soils management plan.

Groundwater

The groundwater results indicate that:

- Heavy metals were detected in all samples however only exceeded criteria in two groundwater samples:
  - Chromium concentrations exceeded the ecological criteria of 0.001 mg/L in MW01 and MW02 (0.003 and 0.007 mg/L respectively).
  - Copper exceeded the ecological criteria of 0.0014mg/L in the duplicate sample collected from MW02 with a concentration of 0.006 mg/L
- Concentrations of PFOS and the sum of PFOS and PFHxS were detected above ecological and recreational criteria in all three samples.
- Other minor detections were noted in all wells. however were below criteria (where criteria exist) and are not considered to represent an unacceptable risk to site users.

- PFAS compounds are present in groundwater, however are considered typical for the regional area and do not necessarily trigger the need for remediation. Groundwater abstraction and use is restricted, and managed through the Williamtown Management Area. Risks to site users are managed through the site PFAS management plan (Senversa, 2023c).

10.2 Recommendations

Analysis of source/pathway/receptor linkages indicated that a number of potentially complete linkages were present. Furthermore, only a limited number of sample locations were assessed as part of this PSI and the majority of the site is unassessed and represents a data gap. Based on the sites current use and the management plans for the site, and general restrictions based on the site location, the risk to site users from soil and/or groundwater contamination is considered low..

Whilst ASS were not detected in the samples collected at the site, PASS are known to be present at the Base and as such, any excavation undertaken at depths in excess of 2 m BGL, or those which cause dewatering of the site should be undertaken as per the site acid sulfate soils management plan.

11.0 Principles and Limitations

The following principles outlined in **Table 11.1** are an integral part of site contamination assessment practices and are intended to be referred to when resolving any ambiguity or exercising such discretion as is accorded the user or site assessor.

Table 11.1: Principles and Limitations of Investigation

Area	Principle and Limitation
Elimination of Uncertainty	Some uncertainty is inherent in all site investigations. Furthermore, any sample, either surface or subsurface, taken for chemical testing may or may not be representative of a larger population or area. Professional judgment and interpretation are inherent in the process, and even when exercised in accordance with objective scientific principles, uncertainty is inevitable. Additional assessment beyond that which was reasonably undertaken may reduce the uncertainty.
Failure to Detect	Even when site investigation work is executed competently and in accordance with the appropriate Australian guidance, such as the National Environment Protection (Assessment of Site Contamination) Amendment Measure ('the NEPM'), it must be recognised that certain conditions present especially difficult target analyte detection problems. Such conditions may include, but are not limited to, complex geological settings, unusual or generally poorly understood behaviour and fate characteristics of certain substances, complex, discontinuous, random, or heterogeneous distributions of existing target analytes, physical impediments to investigation imposed by the location of services, structures and other man-made objects, and the inherent limitations of assessment technologies.
Limitations of Information	The effectiveness of any site investigation may be compromised by limitations or defects in the information used to define the objectives and scope of the investigation, including inability to obtain information concerning historic site uses or prior site assessment activities despite the efforts of the user and assessor to obtain such information.
Chemical Analysis Error	Chemical testing methods have inherent uncertainties and limitations. Senversa routinely seeks to require the laboratory to report any potential or actual problems experienced, or non-routine events which may have occurred during the testing, so that such problems can be considered in evaluating the data.
Level of Assessment	The investigation herein should not be considered to be an exhaustive assessment of environmental conditions on a property. There is a point at which the effort required to obtain information is outweighed by the time required to obtain that information, and, in the context of private transactions and contractual responsibilities, may become a material detriment to the orderly conduct of business. If the presence of target analytes is confirmed on a property, the extent of further assessment is a function of the degree of confidence required and the degree of uncertainty acceptable in relation to the objectives of the assessment.
Comparison with Subsequent Inquiry	The justification and adequacy of the findings of this investigation in light of the findings of a subsequent inquiry should be evaluated based on the reasonableness of judgments made at the time and under the circumstances in which they were made.
Data Useability	Investigation data generally only represent the site conditions at the time the data were generated. Therefore, the usability of data collected as part of this investigation may have a finite lifetime depending on the application and use being made of the data. In all respects, a future reader of this report should evaluate whether previously generated data are appropriate for any subsequent use beyond the original purpose for which they were collected, or are otherwise subject to lifetime limits imposed by other laws, regulations or regulatory policies.
Nature of Advice	The investigation works herein are intended to develop and present sound, scientifically valid data concerning actual site conditions. Senversa does not seek or purport to provide legal or business advice.

12.0 References

- AECOM (2022). *BAESA – F35 MRO&U Facilities, Environment – Desktop Contamination Assessment*, September 2022.
- ANZECC & ARMCANZ (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 2, Aquatic Ecosystems – Rationale and Background Information (Chapter 8)*. Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand.
- ANZG (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Australian and New Zealand Governments and Australian state and territory governments.
- Friebel and Nadebaum (2011). *Health screening levels for petroleum hydrocarbons in soil and groundwater*. Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) Technical Report No. 10.
- HEPA (2020). *PFAS National Environmental Management Plan* (NEMP). Version 2.0. National Chemicals Working Group of the Heads of EPAs Australia and New Zealand (PFAS NEMP).
- NHMRC (2011). *Australian Drinking Water Guidelines* (ADWG) updated January 2022. National Health and Medical Research Council.
- NSW DEC (2007). *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination*. Department of Environment and Conservation.
- NSW EPA (2014). *Waste Classification Guidelines*, November 2014.
- NSW EPA (2017) *Guidelines for NSW Site Auditor Scheme (3rd Edition)*
- National Environment Protection Council (2013). *National Environment Protection (Assessment of Site Contamination) Amendment Measure (No.1)* (ASC NEPM).
- NSW EPA (2022a). *Sampling Design Part 1 - Application*. NSW EPA, August 2022.
- NSW EPA (2022b). *Sampling Design Part 2 - Interpretation*. NSW EPA, August 2022.
- NSW EPA (2020). *Guidelines for Consultants Reporting on Contaminated Land.* NSW EPA, April 2020.
- Senversa (2022) *PFAS Management Strategy, Built – BAE Systems Australia – Willamtown Facilities Expansion* dated 2 December 2022.
- Senversa (2023) *In-situ Waste Classification Southern Hangar Extension BAE Systems Facility Upgrades – Williamtown Drive, Williamtown NSW* dated 5 June 2023
- Senversa (2023a) *Unexpected Finds Protocol BAE Systems Facility Upgrades – Williamtown Drive, Williamtown NSW* dated 7 June 2023.
- Senversa (2023b) *Acid Sulfate Soil Management Plan Built – BAE Systems Australia – Williamtown Facility Expansion* dated 16 June 2023.
- Senversa (2023c) *Construction PFAS Management Plan Built - BAESA - Williamtown Facility Expansion* dated 23 August 2023.

Figures

Figure 1: Site Location and Layout

Figure 2: Sample Locations

Figure 3: Soil Exceedances

Figure 4: Groundwater Exceedances

N

North Hangar

Admin

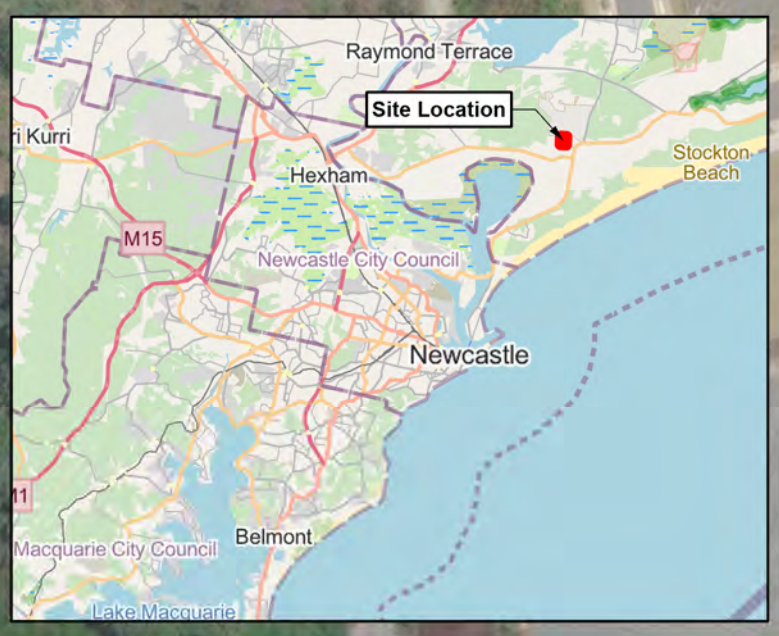
South Hangar

Warehouse

Storage

GSE Storage

Fire Tanks



Legend

- Existing Building
- Lot Boundary
- BAE Systems Australia Facility Boundary
- Site Boundary

Aerial Imagery © ESRI World Imagery

senversa

Created:	E. Marha	Date:	27/06/2024
Reviewed:	M. Ferguson	Revision:	0
Approved:	N. Lukeman	Scale:	1:1,500 (A3)
File:	S20283_014_F001 Site Location and Layout		

0 5 10 20 30 40 50 Metres

Coordinate System: GDA2020 MGA Zone 56

Figure No:	**1**
Title:	**Site Location and Layout Precinct Entry Works**
Project:	Targeted Site Investigation
Location:	Williamtown Drive, Williamtown, NSW 2318
Client:	Built

Path: S:\01_Jobs\1.NSW_Jobs\S20283_BUILT_BAESA_WILLIAMTOWNAPRX\S20283_014.aprx

© Senversa 2024



senversa

Legend

Senversa Investigation (2024)

- Groundwater Monitoring Well
- Test Pit
- Lot Boundary
- BAE Systems Australia Facility Boundary
- Site Boundary

Aerial Imagery © ESRI World Imagery

Created:	E. Marha	Date:	27/06/2024
Reviewed:	M. Ferguson	Revision:	0
Approved:	N. Lukeman	Scale:	1:800 (A3)
File:	S20283_014_F002 Sample Locations		

0 5 10 20 30 Metres

Coordinate System: GDA2020 MGA Zone 56

Figure No: 2

Title: Sample Locations
Precinct Entry Works

Project: Targeted Site Investigation

Location: Williamtown Drive, Williamtown, NSW 2318

Client: Built

Path: S:\01_Jobs\1 NSW_Jobs\S20283_BUILT_BAESA_WILLIAMTOWN\APRX\S20283_014.aprx

© Senversa 2024

N

TP05	
1.2 - 1.3	
PFOS	0.0296

MW03

TP04

MW01

TP02

TP03

TP01

MW02	
0 - 0.1	
PFOS	0.0190

Sample ID	
Depth (mbgl)	
Analyte	Result
PFAS NEMP 2.0: Ecological, direct exposure	
PFAS NEMP 2.0: Ecological, indirect exposure	
PFAS NEMP 2.0: Health, Industrial/commercial (HIL D)	

senversa

Legend

- Groundwater Monitoring Well
- Test Pit
- Lot Boundary
- BAE Systems Australia Facility Boundary
- Site Boundary

Aerial Imagery © ESRI World Imagery

Created:	E. Marha	Date:	27/06/2024
Reviewed:	M. Ferguson	Revision:	0
Approved:		Scale:	1:800 (A3)
File:	S20283_014_F003 Soil Exceedances		

0 5 10 20 30 Metres

Coordinate System: GDA2020 MGA Zone 56

Figure No:	3
Title:	**Soil Exceedances Precinct Entry Works**
Project:	Targeted Site Investigation
Location:	Williamtown Drive, Williamtown, NSW 2318
Client:	Built

Path: S:\01_Jobs\1 NSW_Jobs\S20283_BUILT_BAESA_WILLIAMTOWN\APRX\S20283_014.aprx

© Senversa 2024



Sample ID		
Analyte	Units	Result
PFAS NEMP 2.0: Ecological, 95% species protection		
PFAS NEMP 2.0: Health, Recreational water quality guideline value		
Aquatic ecosystems DGV - slightly to moderately disturbed (95%) - freshwater		
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand		
Recreational Water - Health		

senversa

Legend

- Groundwater Monitoring Well
- Lot Boundary
- BAE Systems Australia Facility Boundary
- Site Boundary

Aerial Imagery © ESRI World Imagery

Created:	E. Marha	Date:	27/06/2024
Reviewed:	M. Ferguson	Revision:	0
Approved:		Scale:	1:800 (A3)
File:	S20283_014_F004 GW Exceedances		

0 5 10 20 30 Metres

Coordinate System: GDA2020 MGA Zone 56

Figure No:	**4**
Title:	**Groundwater Exceedances Precinct Entry Works**
Project:	Targeted Site Investigation
Location:	Williamtown Drive, Williamtown, NSW 2318
Client:	Built

Path: S:\01_Jobs\1 NSW_Jobs\S20283_BUILT_BAESA_WILLIAMTOWN\APRX\S20283_014.aprx

© Senversa 2024

Tables

Table 1: Soil Analytical Results – Main CoPC Suite

Table 2: Soil Analytical Results – PFAS Suite

Table 3: Soil Analytical Results – ASS Suite

Table 4: Soil Analytical Results – Asbestos

Table 5: Asbestos Quantification

Table 6: Soil Analytical Results -Waste Classification Data

Table 7: Groundwater Gauging Data

Table 8: Groundwater Geochemical Parameters

Table 9: Groundwater Analytical Results

Preliminary Site Investigation - PEW
BAE Systems Australia - Williamtown Facilities Expansion
Built
S20283

Table 1 - Soil Analytical Results - Main CoPC Suite

senversa

Location Code									MW01								MW02				MW03		
Field ID									MW01_0.0-0.1	QC100	QC200	MW01_1.0-1.1	MW01_1.1-1.2	MW01_1.4-1.5	MW01_3.8-3.9	MW02_0.0-0.1	MW02_2.0-2.1	MW02_3.0-3.1	MW02_5.0-5.1	MW03_0.0-0.1	MW03_1.5-1.6	MW03_3.5-3.6
Date									20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024
Depth									0 - 0.1	0 - 0.1	0 - 0.1	1 - 1.1	1.1 - 1.2	1.4 - 1.5	3.8 - 3.9	0 - 0.1	2 - 2.1	3 - 3.1	5 - 5.1	0 - 0.1	1.5 - 1.6	3.5 - 3.6
Sample Type									Normal	Field_D	Interlab_D	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Lab Report No.									ES2417817	ES2417817	1103508	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817
	Unit	LOR	**CRC CARE Direct Contact HSL-D Commercial / Industrial**	*NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)*	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 EILs for Commercial / Industrial <2m	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil															
Metals																							
Arsenic	mg/kg	2			3,000[#6]		160[#1]		<5	<5	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	mg/kg	0.4			900				<1	<1	<0.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	mg/kg	2					320[#2]		15	17	18	15	11	4	<2	5	7	3	<2	9	<2	2
Copper	mg/kg	5			240,000		95[#3]		15	14	14	12	9	<5	<5	6	<5	<5	<5	9	<5	<5
Lead	mg/kg	5			1,500[#7]		1,830[#4]		<5	<5	<5	<5	5	<5	<5	<5	<5	<5	<5	6	<5	<5
Mercury	mg/kg	0.1			730[#8]				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2			6,000		60[#3]		11	12	11	10	6	<2	<2	2	<2	<2	<2	4	<2	<2
Zinc	mg/kg	5			400,000		150[#3]		34	35	38	34	35	<5	<5	22	<5	<5	<5	34	<5	<5
BTEX																							
Benzene	mg/kg	0.1	**430**			3		75	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.1	**99,000**			NL [#12]		135	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.1	**27,000**			NL [#12]		165	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	mg/kg	0.2							<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (o)	mg/kg	0.1							<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylene	mg/kg	0.3	**81,000**			230		180	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total BTEX	mg/kg	0.2							<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total Petroleum Hydrocarbons																							
C6-C9 Fraction	mg/kg	10							<10	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C10-C14 Fraction	mg/kg	20							<50	<50	<20	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15-C28 Fraction	mg/kg	50							<100	<100	<50	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29-C36 Fraction	mg/kg	50							<100	<100	<50	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C10-C36 Fraction (Sum)	mg/kg	50							<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Recoverable Hydrocarbons																							
C6-C10 Fraction	mg/kg	10		*700*					<10	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C6-C10 Fraction minus BTEX (F1)	mg/kg	10	**10,000** [#15]			260		215[#13]	<10	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C10-C16 Fraction	mg/kg	50		*1,000*					<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C10-C16 Fraction minus naphthalene (F2)	mg/kg	50	**10,000** [#15]			NL [#12]		170[#14]	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34 Fraction	mg/kg	100	**7,600** [#15]	*3,500*				1,700	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C34-C40 Fraction	mg/kg	100	**7,600** [#15]	*10,000*				3,300	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C40 Fraction (Sum)	mg/kg	50							<50	<50	<100	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
PAHs																							
Acenaphthene	mg/kg	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
Acenaphthylene	mg/kg	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
Anthracene	mg/kg	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
Benz(a)anthracene	mg/kg	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
Benzo(a)pyrene	mg/kg	0.5						1.4	<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
Benzo(b+j)fluoranthene	mg/kg	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
Benzo(g,h,i)perylene	mg/kg	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
Benzo(k)fluoranthene	mg/kg	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
Chrysene	mg/kg	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
Dibenz(a,h)anthracene	mg/kg	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
Fluoranthene	mg/kg	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
Fluorene	mg/kg	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
Indeno(1,2,3-c,d)pyrene	mg/kg	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
Naphthalene	mg/kg	0.5	**11,000**			NL [#12]	370[#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
Phenanthrene	mg/kg	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
Pyrene	mg/kg	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
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.5			40[#9]				<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
Sum of Polycyclic aromatic hydrocarbons (PAH)	mg/kg	0.5			4,000[#10]				<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
Phenols																							
2-Methylphenol	mg/kg	0.2							<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Nitrophenol	mg/kg	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	<0.5
2,4-Dimethylphenol	mg/kg	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
3-&4-Methylphenol (m&p-cresol)	mg/kg	0.4							<1	<1	<0.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol	mg/kg	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	<0.5
Phenol	mg/kg	0.5			240,000				<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
Halogenated Phenols																							
2,4,5-Trichlorophenol	mg/kg	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	<0.5
2,4,6-Trichlorophenol	mg/kg	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	<0.5
2,4-Dichlorophenol	mg/kg	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
2,6-Dichlorophenol	mg/kg	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
2-Chlorophenol	mg/kg	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
Pentachlorophenol	mg/kg	1			660				<2	<2	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Organophosphorus Pesticides																							
Azinophos Methyl	mg/kg	0.05							<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	mg/kg	0.05							<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	mg/kg	0.05							<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	mg/kg	0.05							<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	mg/kg	0.05			2,000				<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	mg/kg	0.05							<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	mg/kg	0.05							<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	mg/kg	0.05							<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorvos	mg/kg	0.05							<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dimethoate	mg/kg	0.05							<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	mg/kg	0.05							<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	mg/kg	0.05							<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Malathion	mg/kg	0.05							<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl parathion	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Monocrotophos	mg/kg	0.2							<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Prothiofos	mg/kg	0.05							<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Preliminary Site Investigation - PEW
BAE Systems Australia - Williamtown Facilities Expansion
Built
S20283

Table 1 - Soil Analytical Results - Main CoPC Suite

senversa

Location Code								TP01			TP02				TP03				TP04		TP05	
Field ID								TP01_0.0-0.1	TP01_0.4-0.5	TP01_0.8-0.9	TP02_0.0-0.1	QC103	QC203	TP02_1.2-1.3	TP03_0.0-0.1	TP03_0.4-0.5	TP03_1.1-1.2	TP04_0.0-0.1	TP04_1.2-1.3	TP05_0.0-0.1	TP05_1.2-1.3
Date								29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024
Depth								0 - 0.1	0.4 - 0.5	0.8 - 0.9	0 - 0.1	0 - 0.1	0 - 0.1	1.2 - 1.3	0 - 0.1	0.4 - 0.5	1.1 - 1.2	0 - 0.1	1.2 - 1.3	0 - 0.1	1.2 - 1.3
Sample Type								Normal	Normal	Normal	Normal	Field_D	Interlab_D	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Lab Report No.								ES2417818	ES2417818	ES2417818	ES2417818	ES2417818	1103506	ES2417818	ES2417818	ES2417818	ES2417818	ES2417818	ES2417818	ES2417818	ES2417818
	Unit	LOR	**CRC CARE Direct Contact HSL-D Commercial / Industrial**	*NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)*	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 EILs for Commercial / Industrial <2m	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil															
Metals																					
Arsenic	mg/kg	2			3,000[#6]		160[#1]		<5	<5	<5	<5	<5	<2	<5	<5	<5	<5	5	<5	<5	<5
Cadmium	mg/kg	0.4			900				<1	<1	<1	<1	<1	<0.4	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	mg/kg	2					320[#2]		12	2	<2	11	10	14	4	13	12	<2	7	8	9	<2
Copper	mg/kg	5			240,000		95[#3]		12	<5	<5	10	8	9.6	<5	14	12	<5	20	6	6	<5
Lead	mg/kg	5			1,500[#7]		1,830[#4]		6	<5	<5	6	6	6.5	<5	8	7	<5	10	<5	<5	5
Mercury	mg/kg	0.1			730[#8]				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2			6,000		60[#3]		6	<2	<2	4	4	5.4	<2	7	6	<2	5	3	3	<2
Zinc	mg/kg	5			400,000		150[#3]		42	8	<5	35	31	44	14	36	37	<5	48	23	24	12
BTEX																						
Benzene	mg/kg	0.1	**430**			3		75	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.1	**99,000**			NL [#12]		135	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.1	**27,000**			NL [#12]		165	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	mg/kg	0.2							<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (o)	mg/kg	0.1							<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylene	mg/kg	0.3	**81,000**			230		180	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total BTEX	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total Petroleum Hydrocarbons																						
C6-C9 Fraction	mg/kg	10							<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10
C10-C14 Fraction	mg/kg	20							<50	<50	<50	<50	<50	<20	<50	<50	<50	<50	<50	<50	<50	<50
C15-C28 Fraction	mg/kg	50							<100	<100	<100	<100	<100	<50	<100	<100	<100	<100	<100	<100	<100	<100
C29-C36 Fraction	mg/kg	50							<100	<100	<100	<100	<100	<50	<100	<100	<100	<100	<100	<100	<100	<100
C10-C36 Fraction (Sum)	mg/kg	50							<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Recoverable Hydrocarbons																						
C6-C10 Fraction	mg/kg	10		*700*					<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10
C6-C10 Fraction minus BTEX (F1)	mg/kg	10	**10,000** [#15]			260		215[#13]	<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10
>C10-C16 Fraction	mg/kg	50		*1,000*					<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C10-C16 Fraction minus naphthalene (F2)	mg/kg	50	**10,000** [#15]			NL [#12]		170[#14]	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34 Fraction	mg/kg	100	**7,600** [#15]	*3,500*				1,700	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C34-C40 Fraction	mg/kg	100	**7,600** [#15]	*10,000*				3,300	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C40 Fraction (Sum)	mg/kg	50							<50	<50	<50	<50	<50	<100	<50	<50	<50	<50	<50	<50	<50	<50
PAHs																						
Acenaphthene	mg/kg	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
Acenaphthylene	mg/kg	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
Anthracene	mg/kg	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
Benz(a)anthracene	mg/kg	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
Benzo(a)pyrene	mg/kg	0.5						1.4	<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
Benzo(b+j)fluoranthene	mg/kg	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
Benzo(g,h,i)perylene	mg/kg	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
Benzo(k)fluoranthene	mg/kg	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
Chrysene	mg/kg	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
Dibenz(a,h)anthracene	mg/kg	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
Fluoranthene	mg/kg	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
Fluorene	mg/kg	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
Indeno(1,2,3-c,d)pyrene	mg/kg	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
Naphthalene	mg/kg	0.5	**11,000**			NL [#12]	370[#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
Phenanthrene	mg/kg	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
Pyrene	mg/kg	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
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.5			40[#9]				<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
Sum of Polycyclic aromatic hydrocarbons (PAH)	mg/kg	0.5			4,000[#10]				<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
Phenols																						
2-Methylphenol	mg/kg	0.2							<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Nitrophenol	mg/kg	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
2,4-Dimethylphenol	mg/kg	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
3-&4-Methylphenol (m&p-cresol)	mg/kg	0.4							<1	<1	<1	<1	<1	<0.4	<1	<1	<1	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol	mg/kg	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
Phenol	mg/kg	0.5			240,000				<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
Halogenated Phenols																						
2,4,5-Trichlorophenol	mg/kg	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
2,4,6-Trichlorophenol	mg/kg	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
2,4-Dichlorophenol	mg/kg	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
2,6-Dichlorophenol	mg/kg	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
2-Chlorophenol	mg/kg	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
Pentachlorophenol	mg/kg	1			660				<2	<2	<2	<2	<2	<1	<2	<2	<2	<2	<2	<2	<2	<2
Organophosphorus Pesticides																						
Azinophos Methyl	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	mg/kg	0.05			2,000				<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorvos	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dimethoate	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Malathion	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl parathion	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Monocrotophos	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Prothiofos	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Table 1 - Soil Analytical Results - Main CoPC Suite

Location Code									MW01								MW02				MW03		
Field ID									MW01_0.0-0.1	QC100	QC200	MW01_1.0-1.1	MW01_1.1-1.2	MW01_1.4-1.5	MW01_3.8-3.9	MW02_0.0-0.1	MW02_2.0-2.1	MW02_3.0-3.1	MW02_5.0-5.1	MW03_0.0-0.1	MW03_1.5-1.6	MW03_3.5-3.6
Date									20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024
Depth									0 - 0.1	0 - 0.1	0 - 0.1	1 - 1.1	1.1 - 1.2	1.4 - 1.5	3.8 - 3.9	0 - 0.1	2 - 2.1	3 - 3.1	5 - 5.1	0 - 0.1	1.5 - 1.6	3.5 - 3.6
Sample Type									Normal	Field_D	Interlab_D	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Lab Report No.									ES2417817	ES2417817	1103508	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817
	Unit	LOR	**CRC CARE Direct Contact HSL-D Commercial / Industrial**	*NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)*	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 EILs for Commercial / Industrial <2m	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil															
Pesticides																						
Fenamiphos	mg/kg	0.05							<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	mg/kg	0.05							<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Polychlorinated Biphenyls																						
PCBs (Sum of total)	mg/kg	0.1			7[#11]				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Organochlorine Pesticides																						
a-BHC	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
b-BHC	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
d-BHC	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
g-BHC (Lindane)	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin + Dieldrin	mg/kg	0.05			45				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane	mg/kg	0.05			530				<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
DDT	mg/kg	0.05					640[#5]		<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
4,4-DDE	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DDD	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DDT+DDE+DDD	mg/kg	0.05			3,600				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	mg/kg	0.05			100				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane (cis)	mg/kg	0.05							<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane (trans)	mg/kg	0.05							<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin ketone	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	mg/kg	0.05			50				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	mg/kg	0.05			2,500				<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan	mg/kg	0.05			2,000				<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fungicides																						
Hexachlorobenzene	mg/kg	0.05			80				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Comments

#1 NEPC (2013) EIL - Commercial and Industrial. Value applies to aged arsenic (contamination present in soil for at least two years). For fresh contamination refer Schedule B7 of the NEPM.
#2 NEPC (2013) EIL - Commercial and Industrial. Value is for chromium III. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded.
#3 NEPC (2013) EIL - Commercial and Industrial. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded.
#4 NEPC (2013) EIL - Commercial and Industrial. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded. Assumes ABC of 30 mg/kg
#5 NEPC (2013) EIL - Commercial and Industrial. Value applies to both fresh and aged contamination.
#6 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Shedule B7).
#7 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#8 Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#9 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#10 Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should meet relevant HSL)
#11 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#12 Derived soil HSL exceeds soil saturation concentration
#13 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#14 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#15 Friebel and Nadebaum (2011); lowest of derived values for all fractions within range.

Table 1 - Soil Analytical Results - Main CoPC Suite

Location Code									TP01			TP02					TP03				TP04		TP05	
Field ID									TP01_0.0-0.1	TP01_0.4-0.5	TP01_0.8-0.9	TP02_0.0-0.1	QC103	QC203	TP02_1.2-1.3	TP03_0.0-0.1	TP03_0.4-0.5	TP03_1.1-1.2	TP04_0.0-0.1	TP04_1.2-1.3	TP05_0.0-0.1	TP05_1.2-1.3
Date									29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024
Depth									0 - 0.1	0.4 - 0.5	0.8 - 0.9	0 - 0.1	0 - 0.1	0 - 0.1	1.2 - 1.3	0 - 0.1	0.4 - 0.5	1.1 - 1.2	0 - 0.1	1.2 - 1.3	0 - 0.1	1.2 - 1.3
Sample Type									Normal	Normal	Normal	Normal	Field_D	Interlab_D	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Lab Report No.									ES2417818	ES2417818	ES2417818	ES2417818	ES2417818	1103506	ES2417818	ES2417818	ES2417818	ES2417818	ES2417818	ES2417818	ES2417818	ES2417818
	Unit	LOR	**CRC CARE Direct Contact HSL-D Commercial / Industrial**	*NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)*	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand >=0m, <1m	NEPM 2013 EILs for Commercial / Industrial <2m	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																
Pesticides																						
Fenamiphos	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Polychlorinated Biphenyls																						
PCBs (Sum of total)	mg/kg	0.1			7[#11]				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Organochlorine Pesticides																						
a-BHC	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
b-BHC	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
d-BHC	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
g-BHC (Lindane)	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin + Dieldrin	mg/kg	0.05			45				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane	mg/kg	0.05			530				<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
DDT	mg/kg	0.05					640[#5]		<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
4,4-DDE	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DDD	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DDT+DDE+DDD	mg/kg	0.05			3,600				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	mg/kg	0.05			100				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane (cis)	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane (trans)	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin ketone	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	mg/kg	0.05			50				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	mg/kg	0.05			2,500				<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan	mg/kg	0.05			2,000				<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fungicides																						
Hexachlorobenzene	mg/kg	0.05			80				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Comments

#1 NEPC (2013) EIL - Commercial and Industrial. Value applies to aged arsenic (contamination present in soil for at least two years). For fresh contamination refer Schedule B7 of the NEPM.
#2 NEPC (2013) EIL - Commercial and Industrial. Value is for chromium III. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded.
#3 NEPC (2013) EIL - Commercial and Industrial. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded.
#4 NEPC (2013) EIL - Commercial and Industrial. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded. Assumes ABC of 30 mg/kg
#5 NEPC (2013) EIL - Commercial and Industrial. Value applies to both fresh and aged contamination.
#6 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Shedule B7).
#7 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#8 Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#9 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#10 Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should meet relevant HSL)
#11 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#12 Derived soil HSL exceeds soil saturation concentration
#13 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#14 To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#15 Friebel and Nadebaum (2011); lowest of derived values for all fractions within range.

Preliminary Site Investigation - PEW
BAE Systems Australia - Williamtown Facilities Expansion
Built
S20283

Table 2 - Soil Analytical Results - PFAS Suite

					Location Code	MW01							MW02				
					Field ID	MW01_0.0-0.1	QC100	QC200	MW01_1.0-1.1	MW01_1.1-1.2	MW01_1.4-1.5	MW01_3.8-3.9	MW02_0.0-0.1	MW02_2.0-2.1	MW02_3.0-3.1	MW02_5.0-5.1	MW03_0.0-0.1
					Date	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024	20/05/2024
					Depth	0 - 0.1	0 - 0.1	0 - 0.1	1 - 1.1	1.1 - 1.2	1.4 - 1.5	3.8 - 3.9	0 - 0.1	2 - 2.1	3 - 3.1	5 - 5.1	0 - 0.1
					Sample Type	Normal	Field_D	Interlab_D	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
					Lab Report No.	ES2417817	ES2417817	1103508	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817	ES2417817
	Unit	LOR	PFAS NEMP 2.0: Ecological, direct exposure	PFAS NEMP 2.0: Ecological, indirect exposure	**PFAS NEMP 2.0: Health, Industrial/commercial (HIL D)**												
(n:2) Fluorotelomer Sulfonic Acids																	
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005				<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005				<0.0005	<0.0005	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005				<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005				<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Perfluoroalkane Carboxylic Acids																	
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002				<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002				<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002				<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorobutanoic acid (PFBA)	mg/kg	0.001				<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorooctanoic acid (PFOA)	mg/kg	0.0002	10[#1]		**50[#1]**	<0.0002	<0.0002	<0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroalkane Sulfonic Acids																	
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002	1[#1]	0.01[#1]	**20[#1]**	<0.0002	<0.0002	<0.005	<0.0002	0.0044	0.0014	0.0050	0.0190	0.0011	0.0011	0.0006	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002			**20[#1]**	<0.0002	<0.0002	<0.005	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002				<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFHxS and PFOS	mg/kg	0.0002			**20[#1]**	<0.0002	<0.0002	<0.005	<0.0002	0.0044	0.0014	0.0054	0.0190	0.0011	0.0011	0.0006	<0.0002

Comments
#1 PFAS National Environmental Management Plan Version 2.0', Heads of EPA Australia and New Zealand 2020

Table 2 - Soil Analytical Results - PFAS Suite

					Location Code	MW03				TP01			TP02				TP03		
					Field ID	QC101	QC201	MW03_1.5-1.6	MW03_3.5-3.6	TP01_0.0-0.1	TP01_0.4-0.5	TP01_0.8-0.9	TP02_0.0-0.1	QC103	QC203	TP02_1.2-1.3	TP03_0.0-0.1	TP03_0.4-0.5	TP03_1.1-1.2
					Date	20/05/2024	20/05/2024	20/05/2024	20/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024
					Depth	0 - 0.1	0 - 0.1	1.5 - 1.6	3.5 - 3.6	0 - 0.1	0.4 - 0.5	0.8 - 0.9	0 - 0.1	0 - 0.1	0 - 0.1	1.2 - 1.3	0 - 0.1	0.4 - 0.5	1.1 - 1.2
					Sample Type	Field_D	Interlab_D	Normal	Normal	Normal	Normal	Normal	Normal	Field_D	Interlab_D	Normal	Normal	Normal	Normal
					Lab Report No.	ES2417817	1103508	ES2417817	ES2417817	ES2417818	ES2417818	ES2417818	ES2417818	ES2417818	1103506	ES2417818	ES2417818	ES2417818	ES2417818
	Unit	LOR	PFAS NEMP 2.0: Ecological, direct exposure	PFAS NEMP 2.0: Ecological, indirect exposure	**PFAS NEMP 2.0: Health, Industrial/commercial (HIL D)**														
(n:2) Fluorotelomer Sulfonic Acids																			
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005				<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005				<0.0005	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.01	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005				<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005				<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005
Perfluoroalkane Carboxylic Acids																			
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002				<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002				<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002				<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorobutanoic acid (PFBA)	mg/kg	0.001				<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001
Perfluorooctanoic acid (PFOA)	mg/kg	0.0002	10[#1]		**50[#1]**	<0.0002	<0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.005	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroalkane Sulfonic Acids																			
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002	1[#1]	0.01[#1]	**20[#1]**	<0.0002	<0.005	0.0020	0.0006	0.0002	0.0011	0.0059	<0.0002	<0.0002	<0.005	0.0013	0.0024	0.0003	0.0017
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002			**20[#1]**	<0.0002	<0.005	<0.0002	<0.0002	<0.0002	<0.0002	0.0010	<0.0002	<0.0002	<0.005	<0.0002	0.0003	<0.0002	0.0006
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002				<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFHxS and PFOS	mg/kg	0.0002			**20[#1]**	<0.0002	<0.005	0.0020	0.0006	0.0002	0.0011	0.0069	<0.0002	<0.0002	<0.005	0.0013	0.0027	0.0003	0.0023

Comments

#1 PFAS National Environmental Management Plan Version 2.0', Heads of EPA Australia and New Zealand 2020

Table 2 - Soil Analytical Results - PFAS Suite

					Location Code	TP04		TP05			
					Field ID	TP04_0.0-0.1	TP04_1.2-1.3	TP05_0.0-0.1	QC104	QC204	TP05_1.2-1.3
					Date	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024
					Depth	0 - 0.1	1.2 - 1.3	0 - 0.1	0 - 0.1	0 - 0.1	1.2 - 1.3
					Sample Type	Normal	Normal	Normal	Field_D	Interlab_D	Normal
					Lab Report No.	ES2417818	ES2417818	ES2417818	ES2417818	1103506	ES2417818
	Unit	LOR	PFAS NEMP 2.0: Ecological, direct exposure	PFAS NEMP 2.0: Ecological, indirect exposure	**PFAS NEMP 2.0: Health, Industrial/commercial (HIL D)**						
(n:2) Fluorotelomer Sulfonic Acids											
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005				<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005				<0.0005	<0.0005	<0.0005	<0.0005	<0.01	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005				<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005				<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005
Perfluoroalkane Carboxylic Acids											
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002				<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002				<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002				<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002
Perfluorobutanoic acid (PFBA)	mg/kg	0.001				<0.001	<0.001	<0.001	<0.001	-	<0.001
Perfluorooctanoic acid (PFOA)	mg/kg	0.0002	10[#1]		**50**[#1]	<0.0002	<0.0002	<0.0002	<0.0002	<0.005	<0.0002
Perfluoroalkane Sulfonic Acids											
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002	1[#1]	0.01[#1]	**20**[#1]	0.0018	0.0035	0.0082	0.0094	0.0065	0.0296
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002			**20**[#1]	0.0003	<0.0002	<0.0002	<0.0002	<0.005	0.0008
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002				<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002
Sum of PFHxS and PFOS	mg/kg	0.0002			**20**[#1]	0.0021	0.0035	0.0082	0.0094	0.0065	0.0304

Comments

#1 PFAS National Environmental Management Plan Version 2.0', Heads of EPA Australia and New Zealand 2020

Table 3 - Soil Analytical Results - Acid Sulfate Soils

				Location Code	MW01	MW02	MW03	TP01	TP02	TP03	TP04	TP05
				Field ID	MW01_4.5-4.6	MW02_2.4-2.5	MW03_1.9-2.0	TP01_1.3-1.4	TP02_1.3-1.4	TP03_1.1-1.2	TP04_1.3-1.4	TP05_1.2-1.3
				Date	20/05/2024	20/05/2024	20/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024
				Depth	4.5 - 4.6	2.4 - 2.5	1.9 - 2	1.3 - 1.4	1.3 - 1.4	1.1 - 1.2	1.3 - 1.4	1.2 - 1.3
				Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
				Lab Report No.	ES2417817	ES2417817	ES2417817	ES2417818	ES2417818	ES2417818	ES2417818	ES2417818
	Unit	LOR	ASSMAC (1998) Action Criteria <1,000 Tonnes (Coarse)	ASSMAC (1998) Action Criteria >1,000 Tonnes (Coarse)								
Actual Acidity												
pH (KCl)	pH Units	0.1			6.6	6.1	5.9	6.3	6.2	8.4	6.8	6.5
Titratable Actual Acidity	mole H+/t	2	18	18	<2	6	6	<2	<2	<2	<2	<2
Sulfidic - Titratable Actual Acidity	%S	0.02			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Potential Acidity												
Chromium Reducible Sulfur (Scr)	%S	0.005			0.010	0.012	0.008	0.014	0.012	0.013	0.012	0.009
a-Chromium Reducible Sulfur (Scr)	mole H+/t	10			<10	<10	<10	<10	<10	<10	<10	<10
Acid Neutralising Capacity												
Acid Neutralising Capacity	%CaCO3	0.01			0.38	-	-	-	-	0.62	0.59	0.36
Acid Neutralising Capacity (ANCBT)	mole H+/t	10			75	-	-	-	-	124	119	72
Sulfidic - Acid Neutralising Capacity	%S	0.01			0.12	-	-	-	-	0.20	0.19	0.12
Acid Base Accounting												
ANC Fineness Factor	-	0.5			1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Net Acidity (acidity units)	mole H+/t	10			<10	13	10	<10	<10	<10	<10	<10
Sulfidic - Net Acidity	%S	0.02	0.03		<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Liming Rate	kg CaCO3/t	1			<1	1	<1	<1	<1	<1	<1	<1
a-Net Acidity without ANCE	mole H+/t	10			<10	13	10	<10	<10	<10	<10	<10
s-Net Acidity without ANCE	%S	0.02			<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Liming rate without ANCE	kg CaCO3/t	1			<1	1	<1	<1	<1	<1	<1	<1

Preliminary Site Investigation - PEW
BAE Systems Australia - Williamtown Facilities Expansion
Built
S20283

Table 4 - Soil Analytical Results - Asbestos

		Location Code	MW01	MW02	MW03	TP01		TP02		TP03		TP04		TP05	
		Field ID	MW01_0.0-0.1	MW02_0.0-0.1	MW03_0.0-0.1	TP01_0.0-0.1	TP01_0.0-0.1	TP02_0.0-0.1	TP02_0.0-0.1	TP03_0.4-0.5	TP03_0.4-0.5	TP04_0.0-0.1	TP04_0.0-0.1	TP05_0.0-0.1	TP05_0.0-0.1
		Date	20/05/2024	20/05/2024	20/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024	29/05/2024
		Depth	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1	0.4 - 0.5	0.4 - 0.5	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1
		Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
		Lab Report No.	ES2417817	ES2417817	ES2417817	ES2417818	ES2421089	ES2417818	ES2421089	ES2417818	ES2421089	ES2417818	ES2421089	ES2417818	ES2421089
	Unit	LOR													
Asbestos															
Asbestos Detected	mg/kg	Yes/No	No	No	No	No	No	No	No	No	No	No	No	No	No
Asbestos (Trace)	-	Yes/No	No	No	No	No	No	No	No	No	No	No	No	No	No
Asbestos in soil (<7mm AF/FA)	g	0.0004	-	-	-	-	<0.0004	-	<0.0004	-	<0.0004	-	<0.0004	-	<0.0004
Asbestos in soil (>7mm ACM)	g	0.0004	-	-	-	-	<0.0004	-	<0.0004	-	<0.0004	-	<0.0004	-	<0.0004
Friable Asbestos (FA & AF)	% (w/w)	0.001	-	-	-	-	<0.001	-	<0.001	-	<0.001	-	<0.001	-	<0.001
Asbestos Containing Material (as 15% Asbestos in A	% (w/w)	0.01	-	-	-	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01
Asbestos Containing Material	g	0.1	-	-	-	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1
Organic Fibre	-	Yes/No	No	No	No	No	No	No	No	No	No	No	No	No	No
Synthetic Mineral Fibre	-	Yes/No	No	No	No	No	No	No	No	No	No	No	No	No	No
Weight of Sample	g	0.01	516	543	399	508	508	538	538	600	600	586	586	648	648
Weight Used for % Calculation	kg	0.0001	-	-	-	-	0.508	-	0.538	-	0.600	-	0.586	-	0.648

Table 5 - Asbestos Quantification

Assessment Criteria - Asbestos Concentration in Soils	
Category	Exceedance
Visible Surface Asbestos	**No visible ACM**
Bonded ACM in soils - HSL D	**0.05 % w/w**
FA and AF in soils	**0.001 % w/w**
Respirable Fibres	**NIL fibres**

Sample Information				Field Asbestos Quantification					Laboratory Analysis						
Sample ID	Fill Description	Date	Lab Report Number	Approx. Volume of Soil (L)	Soil Mass (g)	Mass ACM (g)	Mass Asbestos in ACM (g)	[Asbestos from ACM in soil] (%w/w)	Weight of Sample (g)	Asbestos in soil (<7mm AF/FA) (g)	Asbestos in soil (>7mm ACM) (g)	[Asbestos from FA & AF in soil] (%w/w)	[Asbestos from ACM in soil] (%w/w)	Asbestos Containing Material (g)	Comment
TP01_0.0-0.1	GRAVEL with sand	29/05/2024	ES2417818	10.00	16300	0	0.00	0.0000	508	<0.0004	<0.0004	<0.001	<0.01	<0.1	-
TP01_0.4-0.5	SAND	29/05/2024	-	10.00	16300	0	0.00	0.0000	-	-	-	-	-	-	-
TP02_0.0-0.1	GRAVEL with sand	29/05/2024	ES2417818	10.00	16300	0	0.00	0.0000	538	<0.0004	<0.0004	<0.001	<0.01	<0.1	-
TP02_0.4-0.5	GRAVEL with sand	29/05/2024	-	10.00	16300	0	0.00	0.0000	-	-	-	-	-	-	-
TP03_0.0-0.1	GRAVEL with sand	29/05/2024	-	10.00	16300	0	0.00	0.0000	-	-	-	-	-	-	-
TP03_0.4-0.5	GRAVEL with sand	29/05/2024	ES2417818	10.00	16300	0	0.00	0.0000	600	<0.0004	<0.0004	<0.001	<0.01	<0.1	-
TP04_0.0-0.1	GRAVEL with sand	29/05/2024	ES2417818	10.00	16300	0	0.00	0.0000	586	<0.0004	<0.0004	<0.001	<0.01	<0.1	-
TP04_0.4-0.5	GRAVEL with sand	29/05/2024	-	10.00	16300	0	0.00	0.0000	-	-	-	-	-	-	-
TP05_0.0-0.1	GRAVEL with sand	29/05/2024	ES2417818	10.00	16300	0	0.00	0.0000	648	<0.0004	<0.0004	<0.001	<0.01	<0.1	-
TP05_0.3-0.4	SAND	29/05/2024	-	10.00	16300	0	0.00	0.0000	-	-	-	-	-	-	-

Notes:
*Field observations not exceeding the criteria are displayed in **bold text**.
*Detections above limit of reporting are displayed in **bold text**.

1 of 1

Table 6: Groundwater Geochemical Parameters and Gauging Data

Well ID	Date	Depth to Water	Total Well Depth	Depth to Product	Dissolved Oxygen	Electrical Conductivity	pH	Temperature	Redox Potential	Notes
		m BTOC	m BTOC	m BTOC	mg/L	uS/cm	pH Units	° C	mV	
MW01	28/05/2024	0.743	6.86	N/A	0.1	337.2	5.64	22.1	-269.2	Yellow, moderate sulfur odour, no sheen, non-turbid.
MW02	28/05/2024	1.424	7.00	N/A	0.1	368.5	5.59	22.1	-314.5	Yellow, moderate sulfur odour, no sheen, non-turbid.
MW03	28/05/2024	1.433	7.04	N/A	0.12	70.9	5.25	22	-274.2	Yellow, moderate sulfur odour, no sheen, non-turbid.

Table 7 - Groundwater Analytical Results

							Location Code	MW01	MW02	MW02	MW02	MW03
							Field ID	MW01	MW02	QC102	QC202	MW03
							Date	28/05/2024	28/05/2024	28/05/2024	28/05/2024	28/05/2024
							Sample Type	Normal	Normal	Field_D	Interlab_D	Normal
							Lab Report No.	ES2417394	ES2417394	ES2417394	1102875	ES2417394
	Unit	LOR	PFAS NEMP 2.0: Ecological, 95% species protection	PFAS NEMP 2.0: Health, Recreational water quality guideline value	Groundwater HSLs - NEPM Setting 'D' - Commercial / Industrial - Default Screen	Aquatic ecosystems DGV - slightly to moderately disturbed (95%) - freshwater	Recreational Water - Health					
Metals												
Arsenic (filtered)	mg/L	0.001				0.013[#3]	0.1[#13]	<0.001	0.001	<0.001	<0.001	<0.001
Cadmium (filtered)	mg/L	0.0001				0.0002[#4]	0.02[#13]	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001
Chromium (filtered)	mg/L	0.001				0.001[#5]	0.5[#14]	0.003	0.007	0.007	0.006	0.001
Copper (filtered)	mg/L	0.001				0.0014[#6]	20[#13]	<0.001	<0.001	0.006	<0.001	<0.001
Lead (filtered)	mg/L	0.001				0.0034[#4]	0.1[#13]	<0.001	<0.001	<0.001	<0.001	<0.001
Mercury (filtered)	mg/L	0.0001				0.00006[#7]	0.01[#13]	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel (filtered)	mg/L	0.001				0.011[#4]	0.2[#13]	<0.001	0.005	0.005	0.006	<0.001
Zinc (filtered)	mg/L	0.005				0.008[#4]	60[#15]	<0.005	<0.005	<0.005	<0.005	<0.005
BTEX												
Benzene	µg/L	1			5,000[#1]	950[#6]	10[#13]	<1	<1	<1	<1	<1
Toluene	µg/L	1			NL [#1]	180[#6]	8,000[#13]	<2	<2	<2	<1	<2
Ethylbenzene	µg/L	1			NL [#1]	80[#6]	3,000[#13]	<2	4	4	6	<2
Xylene (m & p)	µg/L	2						<2	<2	<2	3	<2
Xylene (o)	µg/L	1				350[#6]		<2	<2	<2	<1	<2
Total Xylene	µg/L	2			NL [#1]		6,000[#13]	<2	<2	<2	<3	<2
Total BTEX	µg/L	1						<1	4	4	-	<1
Total Petroleum Hydrocarbons												
C6-C9 Fraction	µg/L	20						<20	<20	<20	30	<20
C10-C14 Fraction	µg/L	50						<50	<50	<50	<50	<50
C15-C28 Fraction	µg/L	100						<100	<100	<100	<100	<100
C29-C36 Fraction	µg/L	50						<50	<50	<50	<100	<50
C10-C36 Fraction (Sum)	µg/L	50						<50	<50	<50	<100	<50
Total Recoverable Hydrocarbons												
C6-C10 Fraction	µg/L	20						<20	<20	<20	40	<20
C6-C10 Fraction minus BTEX (F1)	µg/L	20			6,000[#1]	440[#8]	900[#16]	<20	<20	<20	30	<20
>C10-C16 Fraction	µg/L	50						<100	<100	<100	<50	<100
>C10-C16 Fraction minus naphthalene (F2)	µg/L	50			NL [#1]	440[#8]	900[#16]	<100	<100	<100	<50	<100
>C16-C34 Fraction	µg/L	100				640[#9]	900[#17]	<100	<100	<100	<100	<100
>C34-C40 Fraction	µg/L	100				640[#10]	900[#17]	<100	<100	<100	<100	<100
>C10-C40 Fraction (Sum)	µg/L	100						<100	<100	<100	<100	<100
PAHs												
Acenaphthene	µg/L	1					5,300[#15]	<1.0	<1.0	<1.0	<1	<1.0
Acenaphthylene	µg/L	1						<1.0	<1.0	<1.0	<1	<1.0
Anthracene	µg/L	1				0.01[#7]	18,000[#15]	<1.0	<1.0	<1.0	<1	<1.0
Benz(a)anthracene	µg/L	1						<1.0	<1.0	<1.0	<1	<1.0
Benzo(a)pyrene	µg/L	0.5				0.1[#7]	0.1[#13]	<0.5	<0.5	<0.5	<1	<0.5
Benzo(b+j)fluoranthene	µg/L	1						<1.0	<1.0	<1.0	<1	<1.0
Benzo(g,h,i)perylene	µg/L	1						<1.0	<1.0	<1.0	<1	<1.0
Benzo(k)fluoranthene	µg/L	1						<1.0	<1.0	<1.0	<1	<1.0
Chrysene	µg/L	1						<1.0	<1.0	<1.0	<1	<1.0
Dibenz(a,h)anthracene	µg/L	1						<1.0	<1.0	<1.0	<1	<1.0
Fluoranthene	µg/L	1				1[#7]	8,000[#15]	<1.0	<1.0	<1.0	<1	<1.0
Fluorene	µg/L	1					2,900[#15]	<1.0	<1.0	<1.0	<1	<1.0
Indeno(1,2,3-c,d)pyrene	µg/L	1						<1.0	<1.0	<1.0	<1	<1.0
Naphthalene	µg/L	1			NL [#1]	16[#6]	700[#18]	<1.0	3.4	3.1	4	<1.0
Phenanthrene	µg/L	1				0.6[#7]		<1.0	<1.0	<1.0	<1	<1.0
Pyrene	µg/L	1					1,200[#15]	<1.0	<1.0	<1.0	<1	<1.0
Benzo(a)pyrene TEQ (Zero)	µg/L	0.5					0.1[#19]	<0.5	<0.5	<0.5	-	<0.5
Sum of Polycyclic aromatic hydrocarbons (PAH)	µg/L	0.5						<0.5	3.4	3.1	4	<0.5
MAH												
1,2,4-Trimethylbenzene	µg/L	1					560[#15]	<5	6	6	9	<5
1,3,5-Trimethylbenzene	µg/L	1					600[#15]	<5	<5	<5	<1	<5
Isopropylbenzene	µg/L	1				30[#6]	4,500[#15]	<5	<5	<5	1	<5
n-Butylbenzene	µg/L	5					10,000[#15]	<5	<5	<5	-	<5
n-Propylbenzene	µg/L	5					6,600[#15]	<5	<5	<5	-	<5
p-Isopropyltoluene	µg/L	5						<5	<5	<5	-	<5
sec-Butylbenzene	µg/L	5					20,000[#15]	<5	<5	<5	-	<5
tert-Butylbenzene	µg/L	5					6,900[#15]	<5	<5	<5	-	<5
Styrene	µg/L	1					300[#13]	<5	<5	<5	<1	<5
Halogenated Benzenes												
1,2,3-Trichlorobenzene	µg/L	5				3[#7]	300[#20]	<5	<5	<5	-	<5
1,2-Dichlorobenzene	µg/L	1				160[#6]	15,000[#13]	<5	<5	<5	<1	<5
1,2,4-Trichlorobenzene	µg/L	5				85[#7]	300[#20]	<5	<5	<5	-	<5
1,3-Dichlorobenzene	µg/L	1				260[#6]		<5	<5	<5	<1	<5
2-Chlorotoluene	µg/L	5					2,400[#15]	<5	<5	<5	-	<5
1,4-Dichlorobenzene	µg/L	1				60[#6]	400[#13]	<5	<5	<5	<1	<5
4-Chlorotoluene	µg/L	1					2,500[#15]	<5	<5	<5	<1	<5
Bromobenzene	µg/L	1					620[#15]	<5	<5	<5	<1	<5
Chlorobenzene	µg/L	1				55[#6]	3,000[#13]	<5	<5	<5	<1	<5
Halogenated Hydrocarbons												
1,2-Dibromoethane	µg/L	1					10[#13]	<5	<5	<5	<1	<5
Bromomethane	µg/L	5					10[#13]	<50	<50	<50	<5	<50
Dichlorodifluoromethane	µg/L	5					2,000[#15]	<50	<50	<50	<5	<50
Iodomethane	µg/L	1						<5	<5	<5	<1	<5
Trichlorofluoromethane	µg/L	5					52,000[#15]	<50	<50	<50	<5	<50

Table 7 - Groundwater Analytical Results

							Location Code	MW01	MW02	MW02	MW02	MW03
							Field ID	MW01	MW02	QC102	QC202	MW03
							Date	28/05/2024	28/05/2024	28/05/2024	28/05/2024	28/05/2024
							Sample Type	Normal	Normal	Field_D	Interlab_D	Normal
							Lab Report No.	ES2417394	ES2417394	ES2417394	1102875	ES2417394
	Unit	LOR	PFAS NEMP 2.0: Ecological, 95% species protection	PFAS NEMP 2.0: Health, Recreational water quality guideline value	Groundwater HSLs - NEPM Setting 'D' - Commercial / Industrial - Default Screen	Aquatic ecosystems DGV - slightly to moderately disturbed (95%) - freshwater	Recreational Water - Health					
Chlorinated Hydrocarbons												
1,1-Dichloropropene	µg/L	5						<5	<5	<5	-	<5
1,1-Dichloroethane	µg/L	1					28[#15]	<5	<5	<5	<1	<5
1,1-Dichloroethene	µg/L	1				700[#6]	300[#13]	<5	<5	<5	<1	<5
1,1,1,2-Tetrachloroethane	µg/L	1					5.7[#15]	<5	<5	<5	<1	<5
1,1,1-Trichloroethane	µg/L	1				270[#6]	80,000[#15]	<5	<5	<5	<1	<5
1,2-Dibromo-3-chloropropane	µg/L	5					10[#21]	<5	<5	<5	-	<5
1,1,2-Trichloroethane	µg/L	1				6,500[#6]	2.8[#15]	<5	<5	<5	<1	<5
1,1,2,2-Tetrachloroethane	µg/L	1				400[#6]	0.76[#15]	<5	<5	<5	<1	<5
1,2,3-Trichloropropane	µg/L	1					0.0075[#15]	<5	<5	<5	<1	<5
1,2-Dichloroethane	µg/L	1				1,900[#6]	30[#13]	<5	<5	<5	<1	<5
1,3-Dichloropropane	µg/L	1				1,100[#6]	3,700[#15]	<5	<5	<5	<1	<5
1,2-Dichloropropane	µg/L	1				900[#6]	400[#22]	<5	<5	<5	<1	<5
2,2-Dichloropropane	µg/L	5						<5	<5	<5	-	<5
Bromodichloromethane	µg/L	1					600[#21]	<5	<5	<5	<1	<5
Bromoform	µg/L	1					1,000[#21]	<5	<5	<5	<1	<5
Carbon Tetrachloride	µg/L	1				240[#6]	30[#13]	<5	<5	<5	<1	<5
Chlorodibromomethane	µg/L	1					1,000[#21]	<5	<5	<5	<1	<5
Chloroethane	µg/L	5					83,000[#15]	<50	<50	<50	<5	<50
Chloroform	µg/L	5				370[#7]	3,000[#21]	<5	<5	<5	<5	<5
Chloromethane	µg/L	5					1,900[#15]	<50	<50	<50	<5	<50
cis-1,4-Dichloro-2-butene	µg/L	5					0.013[#15]	<5	<5	<5	-	<5
cis-1,2-Dichloroethene	µg/L	1					600[#23]	<5	<5	<5	4	<5
Dibromomethane	µg/L	1					83[#15]	<5	<5	<5	<1	<5
cis-1,3-Dichloropropene	µg/L	1						<5	<5	<5	<1	<5
Hexachlorobutadiene	µg/L	5					7[#13]	<5	<5	<5	-	<5
Pentachloroethane	µg/L	5				80[#6]	6.5[#15]	<5	<5	<5	-	<5
Tetrachloroethene	µg/L	1				70[#6]	500[#13]	<5	<5	<5	<1	<5
trans-1,4-Dichloro-2-butene	µg/L	5					0.013[#15]	<5	<5	<5	-	<5
trans-1,2-Dichloroethene	µg/L	1					600[#23]	<5	<5	<5	<1	<5
trans-1,3-Dichloropropene	µg/L	1						<5	<5	<5	<1	<5
Trichloroethene	µg/L	1				330[#6]	80[#21]	<5	<5	<5	<1	<5
Vinyl Chloride	µg/L	5				100[#6]	3[#13]	<50	<50	<50	<5	<50
Solvents												
Methyl Ethyl Ketone (MEK)	µg/L	5					56,000[#15]	<50	<50	<50	<5	<50
2-Hexanone (MBK)	µg/L	50					380[#15]	<50	<50	<50	-	<50
4-Methyl-2-pentanone	µg/L	5					63,000[#15]	<50	<50	<50	<5	<50
Carbon disulfide	µg/L	1				20[#11]	8,100[#15]	<5	<5	<5	<1	<5
Vinyl acetate	µg/L	50					4,100[#15]	<50	<50	<50	-	<50
Organophosphorus Pesticides												
Azinophos Methyl	µg/L	0.5				0.01[#7]	300[#13]	<0.5	<0.5	<0.5	<2	<0.5
Bromophos-ethyl	µg/L	0.5					100[#13]	<0.5	<0.5	<0.5	-	<0.5
Carbophenothion	µg/L	0.5					5[#13]	<0.5	<0.5	<0.5	-	<0.5
Chlorfenvinphos	µg/L	0.5					20[#13]	<0.5	<0.5	<0.5	<20	<0.5
Chlorpyrifos	µg/L	0.5				0.01[#6]	100[#13]	<0.5	<0.5	<0.5	<2	<0.5
Chlorpyrifos-methyl	µg/L	0.5					1,200[#15]	<0.5	<0.5	<0.5	<2	<0.5
Demeton-S-methyl	µg/L	0.5						<0.5	<0.5	<0.5	-	<0.5
Diazinon	µg/L	0.5				0.01[#6]	40[#13]	<0.5	<0.5	<0.5	<2	<0.5
Dichlorvos	µg/L	0.5					50[#13]	<0.5	<0.5	<0.5	<2	<0.5
Dimethoate	µg/L	0.5				0.15[#6]	70[#13]	<0.5	<0.5	<0.5	<2	<0.5
Ethion	µg/L	0.5					40[#13]	<0.5	<0.5	<0.5	<2	<0.5
Fenthion	µg/L	0.5					70[#13]	<0.5	<0.5	<0.5	<2	<0.5
Malathion	µg/L	0.5				0.05[#6]	700[#13]	<0.5	<0.5	<0.5	<2	<0.5
Methyl parathion	µg/L	2					7[#13]	<2.0	<2.0	<2.0	<2	<2.0
Monocrotophos	µg/L	2					20[#13]	<2.0	<2.0	<2.0	<2	<2.0
Prothiofos	µg/L	0.5						<0.5	<0.5	<0.5	-	<0.5
Pesticides												
Fenamiphos	µg/L	0.5					5[#13]	<0.5	<0.5	<0.5	-	<0.5
Parathion	µg/L	2				0.004[#6]	200[#13]	<2.0	<2.0	<2.0	<2	<2.0
Pirimphos-ethyl	µg/L	0.5					5[#13]	<0.5	<0.5	<0.5	-	<0.5
Polychlorinated Biphenyls												
PCBs (Sum of total)	µg/L	1						<1	<1	<1	<5	<1
Organochlorine Pesticides												
a-BHC	µg/L	0.2					0.072[#15]	<0.5	<0.5	<0.5	<0.2	<0.5
b-BHC	µg/L	0.2					0.25[#15]	<0.5	<0.5	<0.5	<0.2	<0.5
d-BHC	µg/L	0.2						<0.5	<0.5	<0.5	<0.2	<0.5
Dieldrin	µg/L	0.2				0.01[#11]	3[#24]	<0.5	<0.5	<0.5	<0.2	<0.5
g-BHC (Lindane)	µg/L	0.2				0.2[#6]	100[#13]	<0.5	<0.5	<0.5	<0.2	<0.5
Aldrin	µg/L	0.2				0.001[#11]	3[#24]	<0.5	<0.5	<0.5	<0.2	<0.5
Aldrin + Dieldrin	µg/L	0.2					3[#13]	<0.5	<0.5	<0.5	<0.2	<0.5
Chlordane	µg/L	0.5				0.03[#7]	20[#13]	<0.5	<0.5	<0.5	<2	<0.5
DDT	µg/L	0.2				0.006[#7]	90[#13]	<2.0	<2.0	<2.0	<0.2	<2.0
4,4-DDE	µg/L	0.2					0.46[#15]	<0.5	<0.5	<0.5	<0.2	<0.5
DDD	µg/L	0.2					0.32[#15]	<0.5	<0.5	<0.5	<0.2	<0.5
DDT+DDE+DDD	µg/L	0.2						<0.5	<0.5	<0.5	<0.2	<0.5
Endosulfan I	µg/L	0.2						<0.5	<0.5	<0.5	<0.2	<0.5

Table 7 - Groundwater Analytical Results

							Location Code	MW01	MW02	MW02	MW02	MW03
							Field ID	MW01	MW02	QC102	QC202	MW03
							Date	28/05/2024	28/05/2024	28/05/2024	28/05/2024	28/05/2024
							Sample Type	Normal	Normal	Field_D	Interlab_D	Normal
							Lab Report No.	ES2417394	ES2417394	ES2417394	1102875	ES2417394
	Unit	LOR	PFAS NEMP 2.0: Ecological, 95% species protection	PFAS NEMP 2.0: Health, Recreational water quality guideline value	Groundwater HSLs - NEPM Setting 'D' - Commercial / Industrial - Default Screen	Aquatic ecosystems DGV - slightly to moderately disturbed (95%) - freshwater	Recreational Water - Health					
Endosulfan II	µg/L	0.2						<0.5	<0.5	<0.5	<0.2	<0.5
Endosulfan sulfate	µg/L	0.2					1,100[#15]	<0.5	<0.5	<0.5	<0.2	<0.5
Endrin	µg/L	0.2				0.01[#7]	6[#21]	<0.5	<0.5	<0.5	<0.2	<0.5
Chlordane (cis)	µg/L	0.5					36[#15]	<0.5	<0.5	<0.5	-	<0.5
Chlordane (trans)	µg/L	0.5					100[#15]	<0.5	<0.5	<0.5	-	<0.5
Endrin aldehyde	µg/L	0.2						<0.5	<0.5	<0.5	<0.2	<0.5
Endrin ketone	µg/L	0.2						<0.5	<0.5	<0.5	<0.2	<0.5
Heptachlor	µg/L	0.2				0.01[#7]	3[#13]	<0.5	<0.5	<0.5	<0.2	<0.5
Heptachlor epoxide	µg/L	0.2					0.014[#15]	<0.5	<0.5	<0.5	<0.2	<0.5
Methoxychlor	µg/L	0.2				0.005[#11]	3,000[#13]	<2.0	<2.0	<2.0	<0.2	<2.0
Fungicides												
Hexachlorobenzene	µg/L	0.2				0.05[#7]	0.098[#15]	<0.5	<0.5	<0.5	<0.2	<0.5
(n:2) Fluorotelomer Sulfonic Acids												
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01						<0.05	<0.05	<0.05	<0.01	<0.05
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05						0.09	0.82	0.62	0.65	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.01						<0.05	<0.05	<0.05	<0.01	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01						<0.05	<0.05	<0.05	<0.01	<0.05
Perfluoroalkane Carboxylic Acids												
Perfluorohexanoic acid (PFHxA)	µg/L	0.01						0.22	0.22	0.23	0.22	0.13
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01						<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.01						0.02	<0.02	<0.02	0.02	<0.02
Perfluoropentanoic acid (PFPeA)	µg/L	0.01						0.16	0.24	0.25	0.23	0.04
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01						<0.05	<0.05	<0.05	<0.01	<0.05
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01						0.06	0.10	0.10	0.10	0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.05						<0.1	<0.1	<0.1	0.08	<0.1
Perfluorodecanoic acid (PFDA)	µg/L	0.01						<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01						<0.02	<0.02	<0.02	<0.01	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01						<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorooctanoic acid (PFOA)	µg/L	0.01	220[#2]	10[#2]				0.11	0.12	0.12	0.14	0.07
Perfluoroalkane Sulfonic Acids												
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.01	0.13[#2]	2[#2]				9.82	3.36	3.23	3.3	4.35
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01						0.07	0.04	0.04	0.04	0.03
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01		2[#2]				1.13	0.56	0.57	0.66	0.39
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01						0.09	0.05	0.05	0.06	0.04
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.01						<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01						0.04	0.03	0.02	0.03	0.03
Sum of PFHxS and PFOS	µg/L	0.01		2[#2]				11.0	3.92	3.80	3.96	4.74
Perfluoroalkyl Sulfonamides												
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05						<0.05	<0.05	<0.05	<0.05	<0.05
N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	µg/L	0.02						<0.02	<0.02	<0.02	<0.05	<0.02
N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	µg/L	0.02						<0.02	<0.02	<0.02	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05						<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05						<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05						<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02						<0.02	<0.02	<0.02	<0.05	<0.02
PFAS												
Sum of PFAS	µg/L	0.01						11.9	5.59	5.27	5.58	5.15

Comments

#1 Value for shallow (2-4 m bgl) sand aquifer adopted for initial screening.
#2 PFAS National Environmental Management Plan Version 2.0', Heads of EPA Australia and New Zealand 2020
#3 ANZG (2018). The more conservative value (Arsenic AsV) out of the available arsenic species was adopted for initial screening purposes.
#4 ANZG (2018). Adjust DGVs for site-specific hardness using the hardness-dependent algorithm in Warne et al. (2018)
#5 ANZG (2018). The more conservative value (Chromium CrVI) out of the available chromium species was adopted for initial screening purposes.
#6 ANZG (2018)
#7 ANZG (2018). Higher species protection level adopted as recommended
#8 CRWB (2019). Lowest of values for gasoline (C4-C12) and diesel (C8-C21) range hydrocarbons.
#9 CRWB (2019). Value for diesel (C8-C21) mixture.
#10 CRWB (2019). Value for diesel (C8-C21) mixture. No value derived for TPH >C21 as not considered soluble; diesel value used for screening.
#11 ANZG (2018). Unknown species protection level
#12 PFAS National Environmental Management Plan (HEPA 2020). Higher species protection level adopted as recommended
#13 NHMRC (2011) - Health. Multiplied by a factor of x10
#14 NHMRC (2011) - Health. Guideline for Cr (VI) conservatively adopted for comparision to total chromium. Speciated analysis should be undertaken where guideline is exceeded. Multiplied by a factor of x10
#15 USEPA Tap Water RSL (TR=1E-06; THQ=0.1) - May 2024. Multiplied by a factor of x10
#16 WHO (2008). Lowest derived value for aliphatic and aromatic fractions in this range. Multiplied by a factor of x10
#17 Lowest derived value for aliphatic and aromatic fractions in this range (90 ug/L). Multiplied by a factor of x10
#18 NHMRC (2011) - Health. Derived as per NHMRC (2011) based on TDI used for NEPM HSL derivation. Multiplied by a factor of x10
#19 NHMRC (2011) - Health. Value is for BaP but applies to TEQ. Multiplied by a factor of x10
#20 NHMRC (2011) - Health. Value is for total TCBs but applies to individual isomers also. Multiplied by a factor of x10
#21 WHO Guidelines for drinking-water quality. Multiplied by a factor of x10
#22 WHO Guidelines for drinking-water quality. Provisional guideline due to uncertainties in the health database. Multiplied by a factor of x10
#23 NHMRC (2011) - Health. Value is for total 1,2-DCE but also applied to individual isomers. Multiplied by a factor of x10
#24 NHMRC (2011) - Health. Value is for Aldrin + Dieldrin. Multiplied by a factor of x10
#25 NHMRC (2019) Guidance on PFAS in Recreational Waters

Appendix A: LotSearch Report

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 28 Jun 2024 08:45:02

Reference: LS058005 EP

Address: Jeffries Circuit, Williamtown, NSW 2318

Disclaimer:
The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features.
You should obtain independent advice before you make any decision based on the information within the report.
The detailed terms applicable to use of this report are set out at the end of this report.

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	17/04/2024	17/04/2024	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	21/05/2024	21/05/2024	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority NSW	25/06/2024	12/06/2024	Monthly	1000m	1	1	1
Contaminated Land Records of Notice	Environment Protection Authority NSW	25/06/2024	25/06/2024	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority NSW	28/04/2024	14/07/2021	Quarterly	1000m	0	0	0
Notices under the POEO Act 1997	Environment Protection Authority NSW	15/05/2024	15/05/2024	Monthly	1000m	0	0	2
National Waste Management Facilities Database	Geoscience Australia	29/04/2024	29/11/2022	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	20/09/2023	07/09/2020	Annually	1000m	0	0	1
EPA PFAS Investigation Program	Environment Protection Authority NSW	17/06/2024	14/06/2024	Monthly	2000m	1	1	1
Defence PFAS Investigation & Management Program - Investigation Sites	Australian Department of Defence	17/06/2024	29/02/2024	Monthly	2000m	1	1	1
Defence PFAS Investigation & Management Program - Management Sites	Australian Department of Defence	17/06/2024	29/02/2024	Monthly	2000m	1	1	1
Airservices Australia National PFAS Management Program	Airservices Australia	17/06/2024	17/06/2024	Monthly	2000m	0	0	0
Defence Controlled Areas	Australian Department of Defence	15/04/2024	15/04/2024	Quarterly	2000m	0	1	1
Defence 3 Year Regional Contamination Investigation Program	Australian Department of Defence	30/04/2024	02/09/2022	Quarterly	2000m	1	1	1
National Unexploded Ordnance (UXO)	Australian Department of Defence	15/04/2024	15/04/2024	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority NSW	13/11/2023	15/12/2022	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	0	0	1
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	0	0	4
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	3	3
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	1	11
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	06/05/2024	06/05/2024	Quarterly	1000m	0	0	1
State Forest	Forestry Corporation of NSW	12/12/2023	11/12/2023	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Geoscience Australia	17/04/2024	19/08/2019	Annually	1000m	1	1	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Climate Change, Energy, the Environment and Water	28/05/2024	23/02/2018	Quarterly	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	28/05/2024	20/06/2023	Annually	2000m	0	0	22
NSW Seamless Geology Single Layer: Rock Units	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	1	1	4
NSW Seamless Geology Single Layer: Trendlines	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	0	0	0
NSW Seamless Geology Single Layer: Geological Boundaries and Faults	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Department of Regional NSW	26/04/2024	14/03/2024	Annually	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	12/01/2024	17/02/2011	Annually	1000m	1	1	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Climate Change, Energy, the Environment and Water	12/12/2023	27/07/2020	Annually	1000m	1	2	4
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Housing and Infrastructure	04/06/2024	03/05/2024	Monthly	500m	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	12/01/2024	21/02/2013	Annually	1000m	1	1	2
Dryland Salinity - National Assessment	Australian Bureau of Agricultural and Resource Economics and Sciences	03/06/2024	24/05/2024	Annually	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service	03/05/2024	03/05/2024	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	8	9	11
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Housing and Infrastructure	04/06/2024	08/09/2023	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Housing and Infrastructure	04/06/2024	10/05/2024	Monthly	1000m	3	4	15
Commonwealth Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	20/10/2023	13/04/2022	Annually	1000m	0	0	1
National Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	20/10/2023	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	26/04/2024	08/03/2024	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Housing and Infrastructure	04/06/2024	10/05/2024	Monthly	1000m	0	0	1
Bush Fire Prone Land	NSW Rural Fire Service	18/06/2024	12/03/2024	Monthly	1000m	2	2	4
NSW Native Vegetation Type Map	NSW Department of Climate Change, Energy, the Environment and Water	28/05/2024	30/11/2023	Quarterly	1000m	2	3	79
Ramsar Wetlands of Australia	Australian Department of Climate Change, Energy, the Environment and Water	16/05/2024	11/04/2024	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Terrestrial	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Marine	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	0	0	2
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	0	0	7
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	29/11/2023	29/11/2023	Monthly	10000m	-	-	-

Site Diagram

Jeffries Circuit, Williamtown, NSW 2318



Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 11448m²

Total Perimeter: 691m

Scale: 0 25 50 Meters

Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

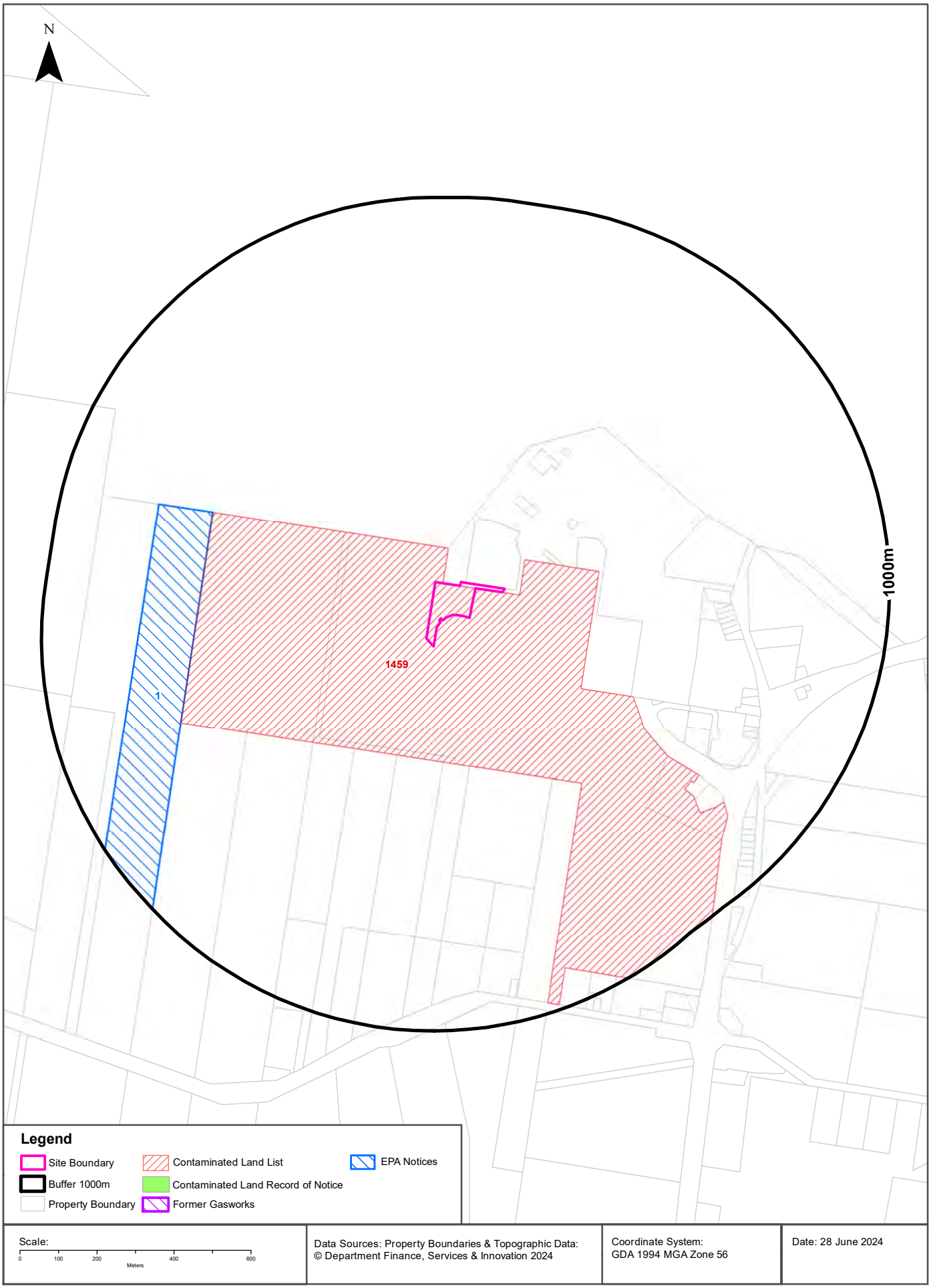
Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27 June 2024

Contaminated Land

Jeffries Circuit, Williamtown, NSW 2318



Contaminated Land

Jeffries Circuit, Williamtown, NSW 2318

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
1459	Hunter Land Effluent Pond	38 Cabbage Tree Road	Williamtown	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	0m	On-site

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
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 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 of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
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 of Notices.
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.
Regulation under the 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.
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. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Contaminated Land

Jeffries Circuit, Williamtown, NSW 2318

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Contaminated Land

Jeffries Circuit, Williamtown, NSW 2318

EPA Notices

Penalty Notices, s.91 & s.92 Clean up Notices and s.96 Prevention Notices within the dataset buffer:

Map ID	Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
1	1079424	s.91 Clean Up Notice	TERRACE EARTHMOVING PTY. LIMITED		Issued	15/11/2007				Premise Match	598m	West
	1095778	s.91 Clean Up Notice	TERRACE EARTHMOVING PTY. LIMITED		Issued	06/02/2009				Premise Match	598m	West

NSW EPA Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Waste Management & Liquid Fuel Facilities

Jeffries Circuit, Williamtown, NSW 2318



Legend

- Site Boundary
- Buffer 1000m
- Property Boundary
- Waste Management Facilities
- National Liquid Fuel Facilities

Scale:	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024	Coordinate System: GDA 1994 MGA Zone 56	Date: 28 June 2024

Scale: 0 100 200 400 600 Meters

Waste Management & Liquid Fuel Facilities

Jeffries Circuit, Williamtown, NSW 2318

National Waste Management Facilities Database

Sites on the National Waste Management Facilities Database within the dataset buffer:

Map ID	Owner	Name	Address	Management Type	Facility Type	Status	Loc Conf	Dist	Dir
N/A	No records in buffer								

Source: Waste Management Facilities Database
Creative Commons 4.0 © Commonwealth of Australia (Geoscience Australia) 2022

National Liquid Fuel Facilities

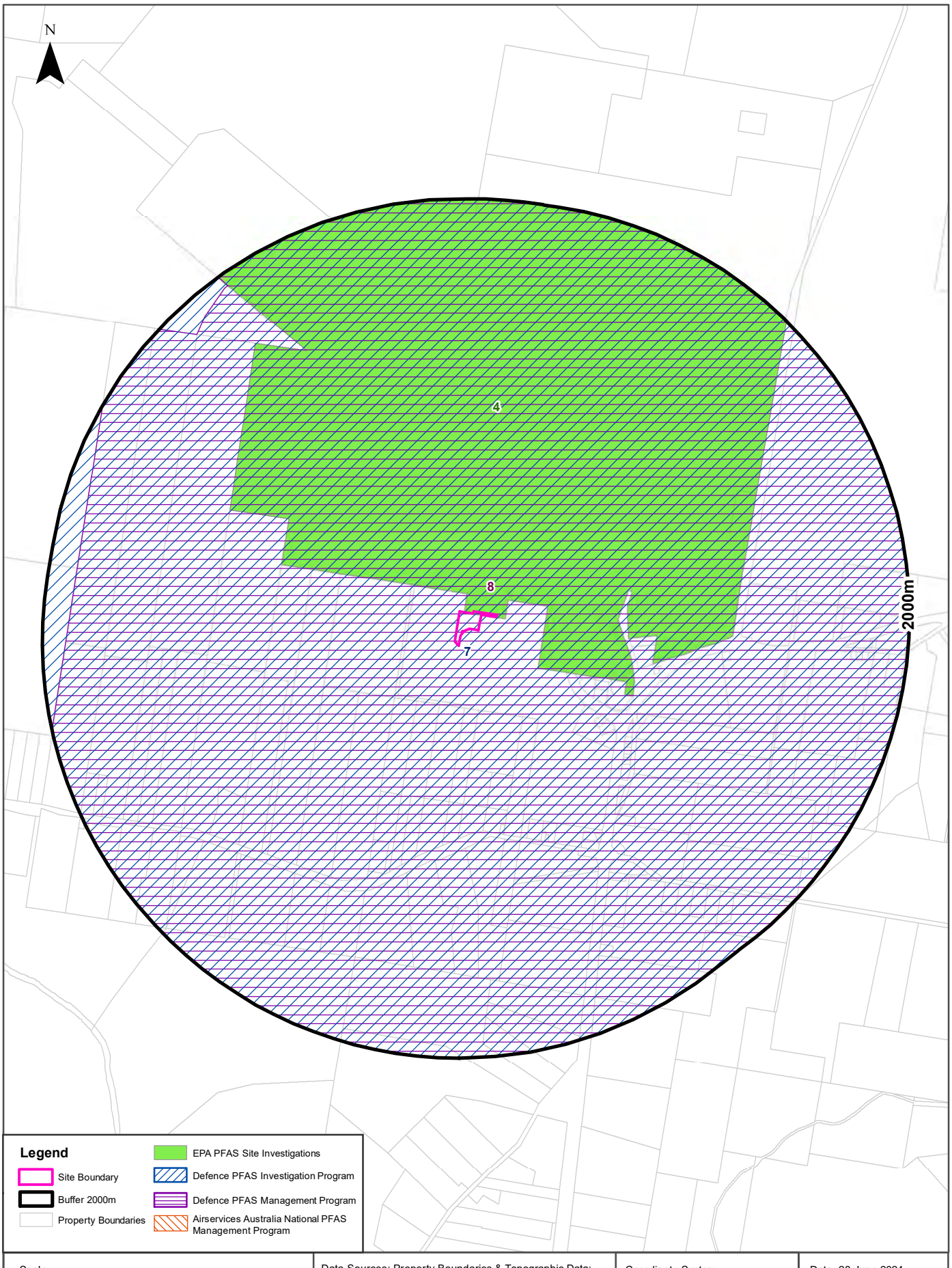
National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
6647	METRO FUEL	METRO FUEL WILLIAMTOWN	3 WILLIAMTOWN DRIVE	WILLIAMTOWN	PETROL STATION	OPERATIONAL			Premise Match	729m	South East

National Liquid Fuel Facilities Data Source: Geoscience Australia
Creative Commons 4.0 © Commonwealth of Australia

PFAS Investigation & Management Programs

Jeffries Circuit, Williamtown, NSW 2318



PFAS Investigation & Management Programs

Jeffries Circuit, Williamtown, NSW 2318

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Map ID	Site	Address	Loc Conf	Dist	Dir
4	Williamtown RAAF Base	49 Medowie Road, Williamtown, 2314	Premise Match	0m	On-site

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
7	RAAF Base Williamtown	Williamtown, New South Wales	Premise Match	0m	On-site

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
8	RAAF Base Williamtown	Williamtown, New South Wales	Premise Match	0m	On-site

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

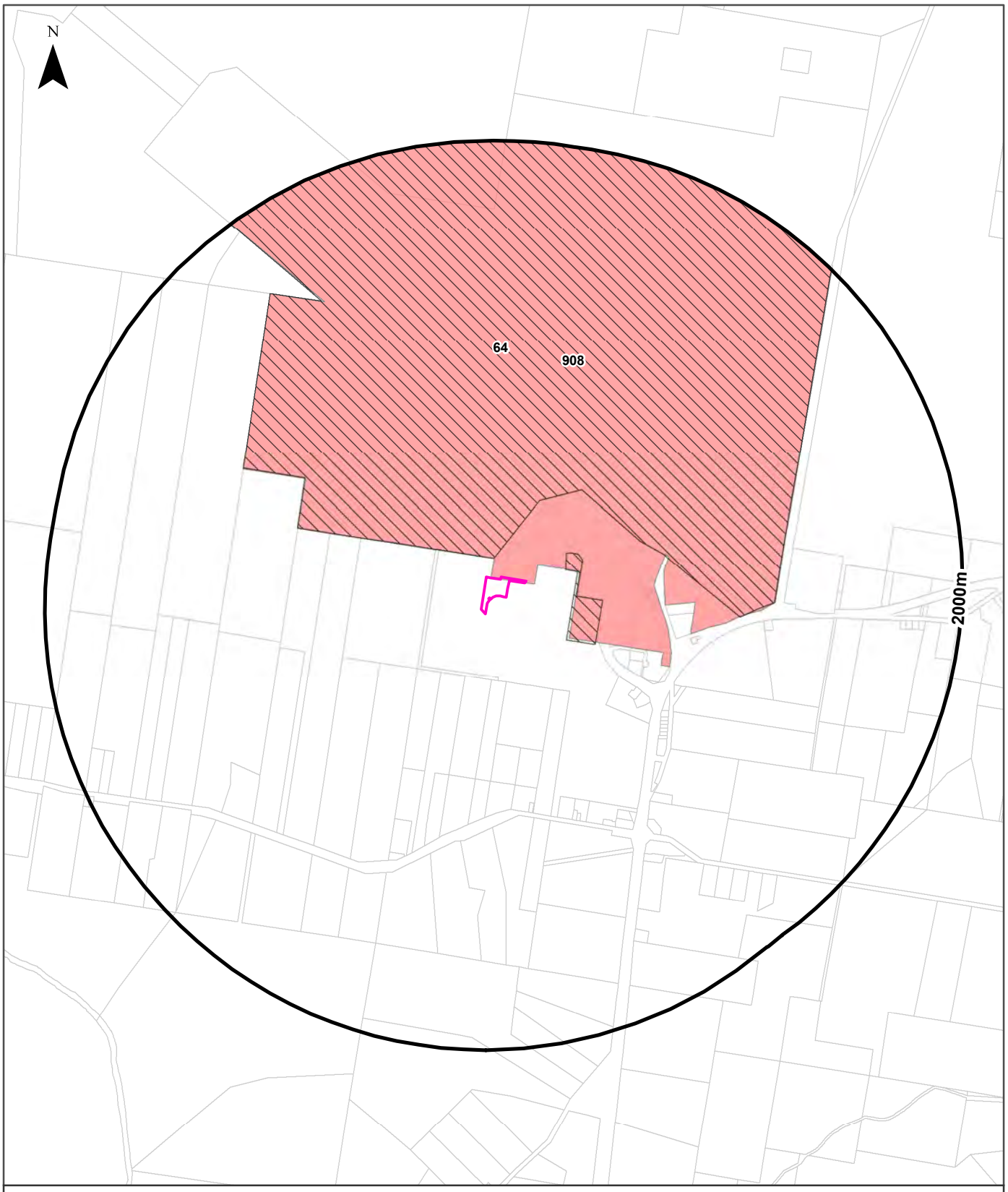
Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites and Unexploded Ordnance

Jeffries Circuit, Williamtown, NSW 2318



Legend

Site Boundary
Buffer 2000m
Property Boundaries

DCA
Defence Controlled Area

Defence 3 Year RCIP
Known Contamination
No Known Contamination

UXO
Substantial Potential
Slight Potential
Remote Potential
Sea Dumping of Depth Charges

Information
Other
Other Sea Dumping Sites

Scale: 0 200 400 800 1,200 Meters	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024	Coordinate System: GDA 1994 MGA Zone 56	Date: 28 June 2024

Defence Sites and Unexploded Ordnance

Jeffries Circuit, Williamtown, NSW 2318

Defence Controlled Areas (DCA)

Defence Controlled Areas provided by the Department of Defence within the dataset buffer:

Site ID	Location Name	Loc Conf	Dist	Dir
64	RAAF Base Williamtown	As Supplied	92m	North

Defence Controlled Areas, Data Custodian: Department of Defence, Australian Government

Defence 3 Year Regional Contamination Investigation Program (RCIP)

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
908	RAAF Base Williamtown	Williamtown, New South Wales	YES	Premise Match	0m	On-site

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

National Unexploded Ordnance (UXO)

Sites which have been assessed by the Department of Defence for the potential presence of unexploded ordnance within the dataset buffer:

Site ID	Location Name	Category	Area Description	Additional Information	Commonwealth	Loc Conf	Dist	Dir
N/A	No records in buffer							

National Unexploded Ordnance (UXO), Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

Jeffries Circuit, Williamtown, NSW 2318

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

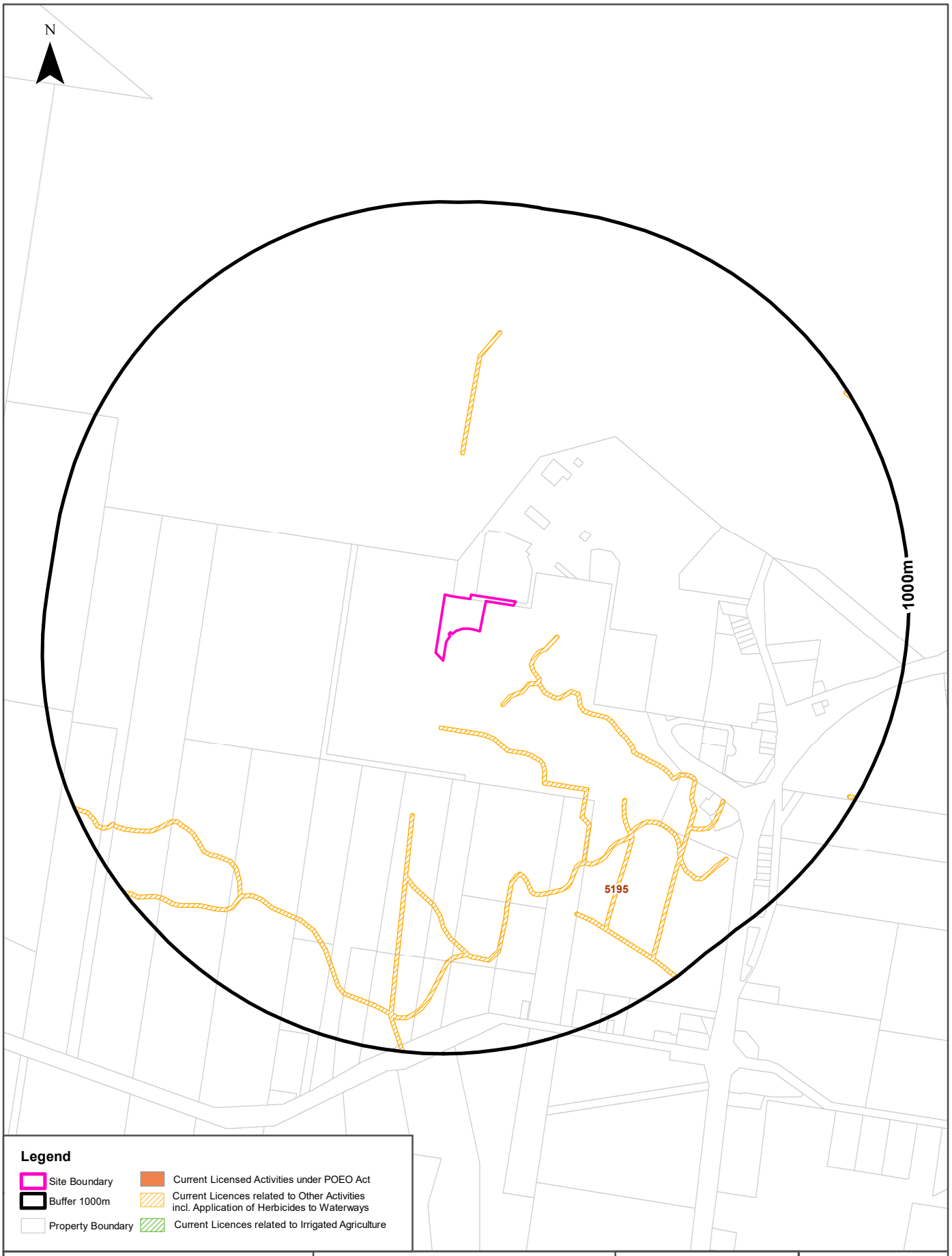
Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Current EPA Licensed Activities

Jeffries Circuit, Williamtown, NSW 2318



EPA Activities

Jeffries Circuit, Williamtown, NSW 2318

Licensed Activities under the POEO Act 1997

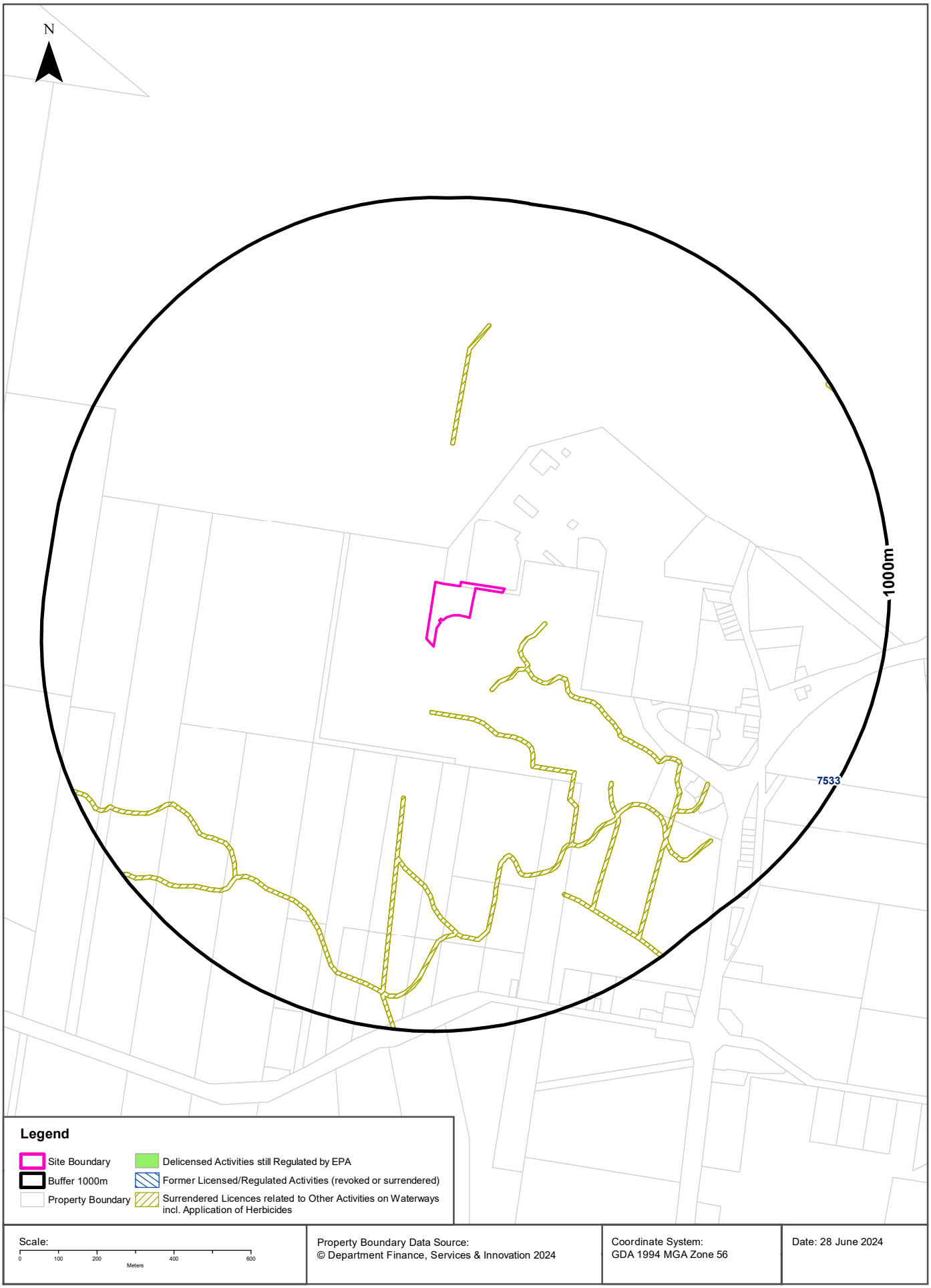
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
5195	PORT STEPHENS COUNCIL	WATERWAYS OF PORT STEPHENS LOCAL GOVERNMENT AREA EXCLUDING THE WATERS AND WETLANDS	RAYMOND TERRACE, NSW 2324	RAYMOND TERRACE	Other activities	Network of Features	130m	South

POEO Licence Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

Jeffries Circuit, Williamtown, NSW 2318



EPA Activities

Jeffries Circuit, Williamtown, NSW 2318

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

Delicensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

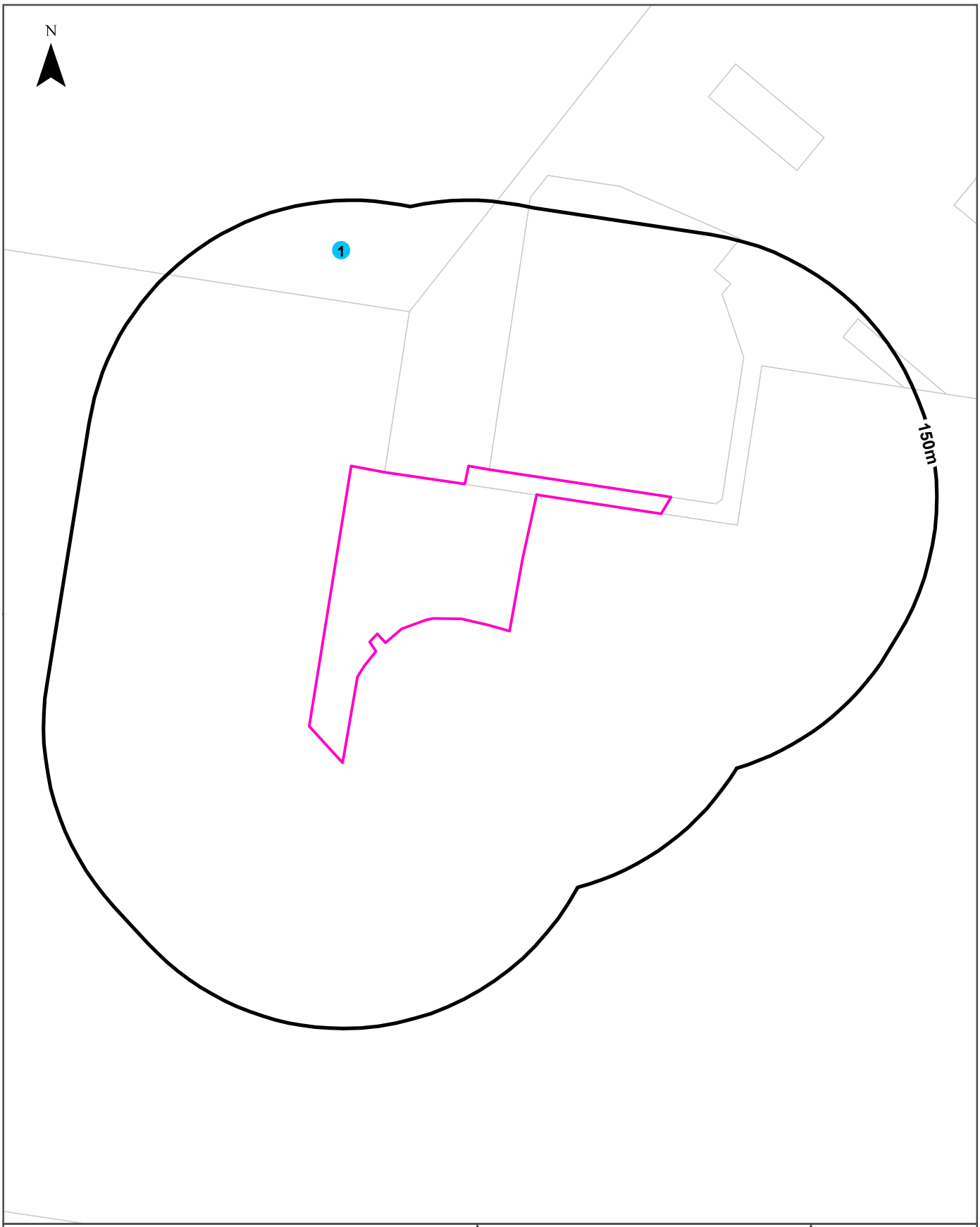
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	130m	South
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	130m	South
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	130m	South
7533	WILLIAM WALTER REDRIFF	TO TILLIGERRY CREEK AND FULLERTON COVE WITHIN THE BOUNDARY OF RMB 2456, STEELE STREET, , WILLIAMTOWN, NSW 2318	Surrendered	28/08/2000	Other activities; SPRAY DRAINS WITH ROUND-UP BIOACTIVE TO KILL ALLIGATOR WEED	Premise Match	975m	South East

Former Licensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Historical Business Directories

Jeffries Circuit, Williamtown, NSW 2318



Legend

- Site Boundary
- Buffer 150m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 40 80 120 160 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 June 2024

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018
Property Boundaries © NSW Department Finance, Services & Innovation 2024

Historical Business Directories

Jeffries Circuit, Williamtown, NSW 2318

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Potentially contaminative business activities extracted from Universal Business Directories from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	NOT LISTED	Williamtown Aerodrome Williamtown 2301	182115	1982	Premise Match	91m	North
	AERODROMES	Williamtown Aerodrome, Williamtown 2301	636112	1970	Premise Match	91m	North
	AERODROMES	Williamtown Aerodrome, Williamtown	177367	1961	Premise Match	91m	North

Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Business Directory Records 1950-1991
Road or Area Matches

Potentially contaminative business activities extracted from Universal Business Directories from years 1991, 1982, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Historical Business Directories

Jeffries Circuit, Williamtown, NSW 2318

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Aerial Imagery 2021

Jeffries Circuit, Williamtown, NSW 2318



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 27 June 2024
0 30 60 90 120 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2018

Jeffries Circuit, Williamtown, NSW 2318



Aerial Imagery 2015

Jeffries Circuit, Williamtown, NSW 2318



Aerial Imagery 2010

Jeffries Circuit, Williamtown, NSW 2318



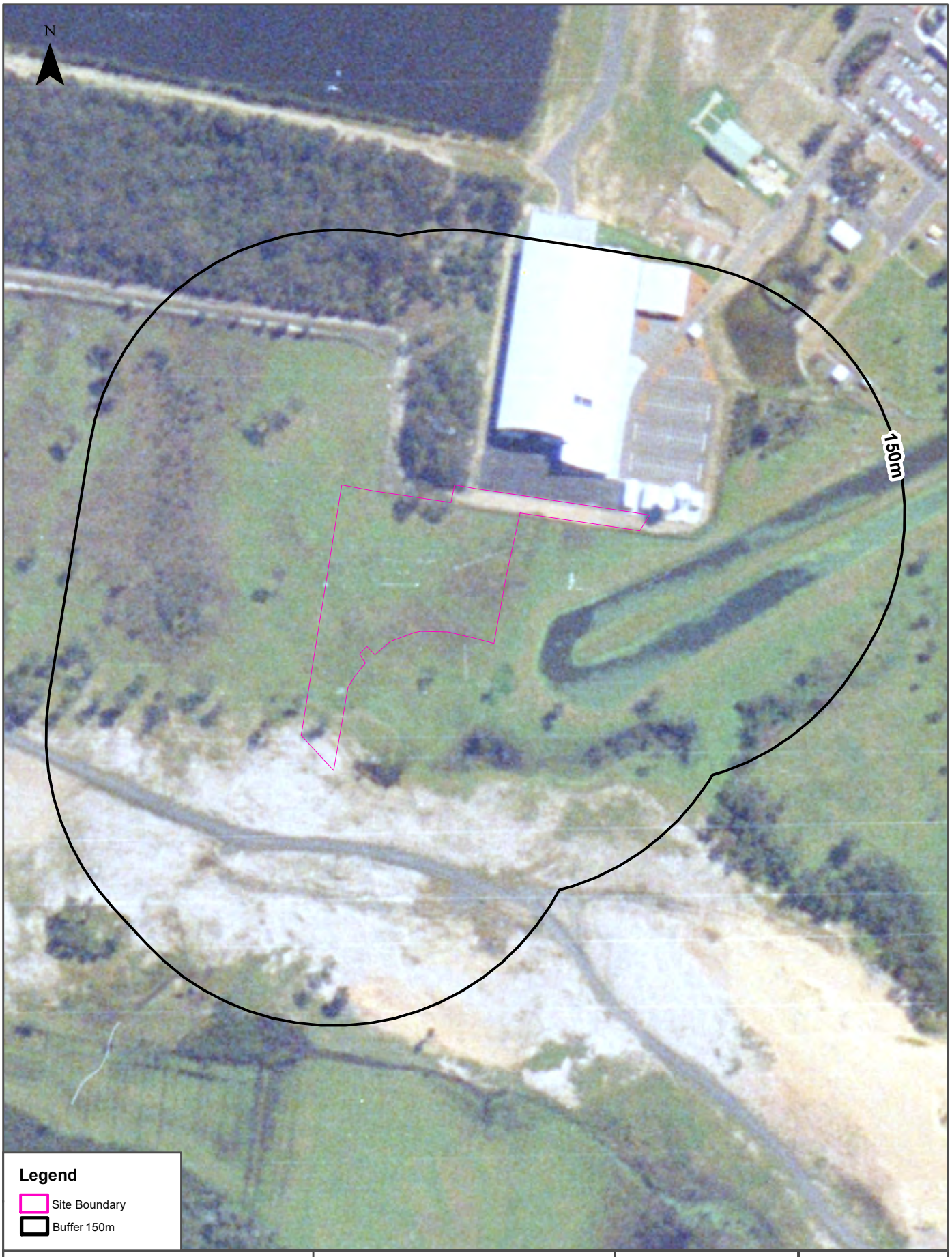
Aerial Imagery 2007

Jeffries Circuit, Williamtown, NSW 2318



Aerial Imagery 1998

Jeffries Circuit, Williamtown, NSW 2318



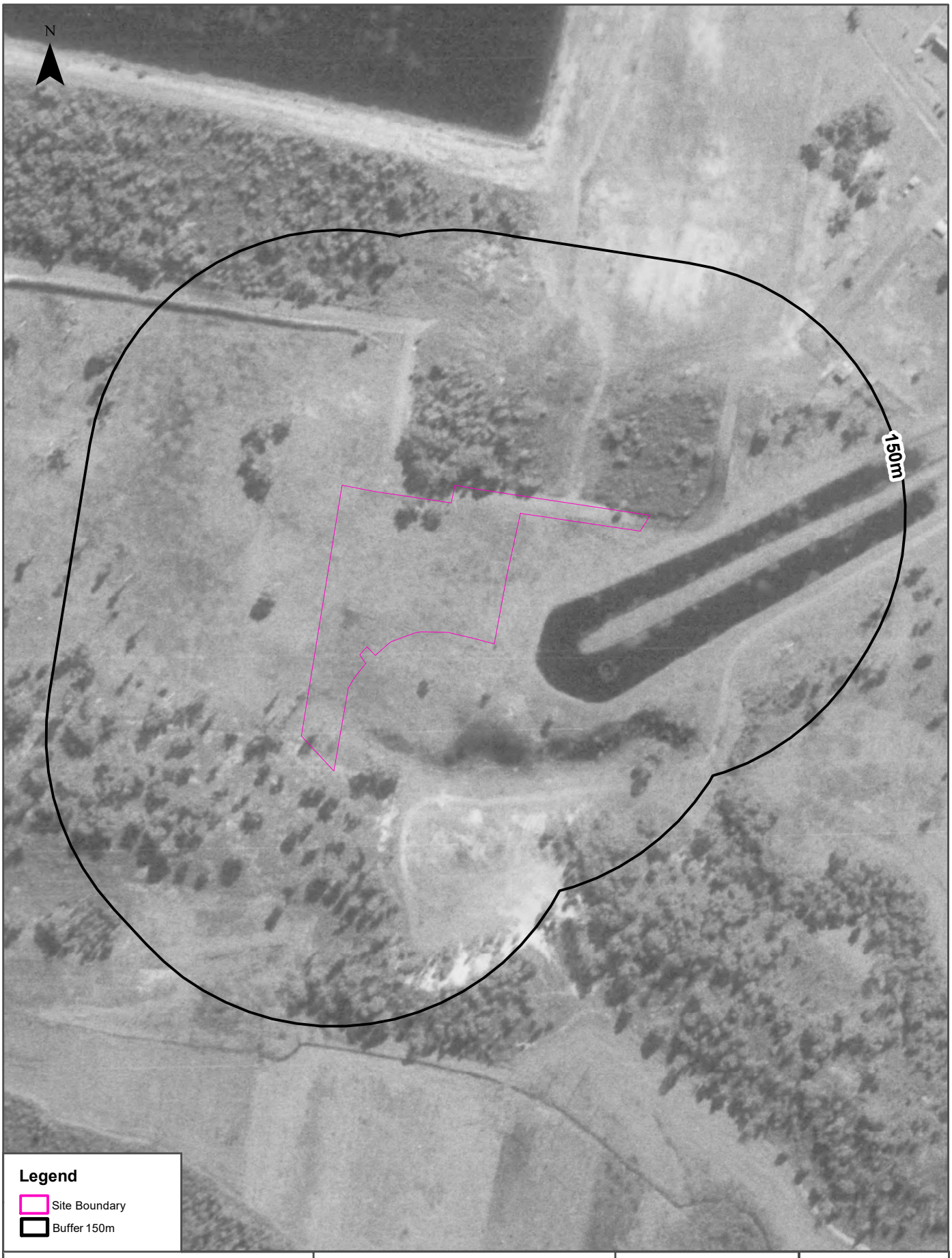
Aerial Imagery 1993

Jeffries Circuit, Williamtown, NSW 2318



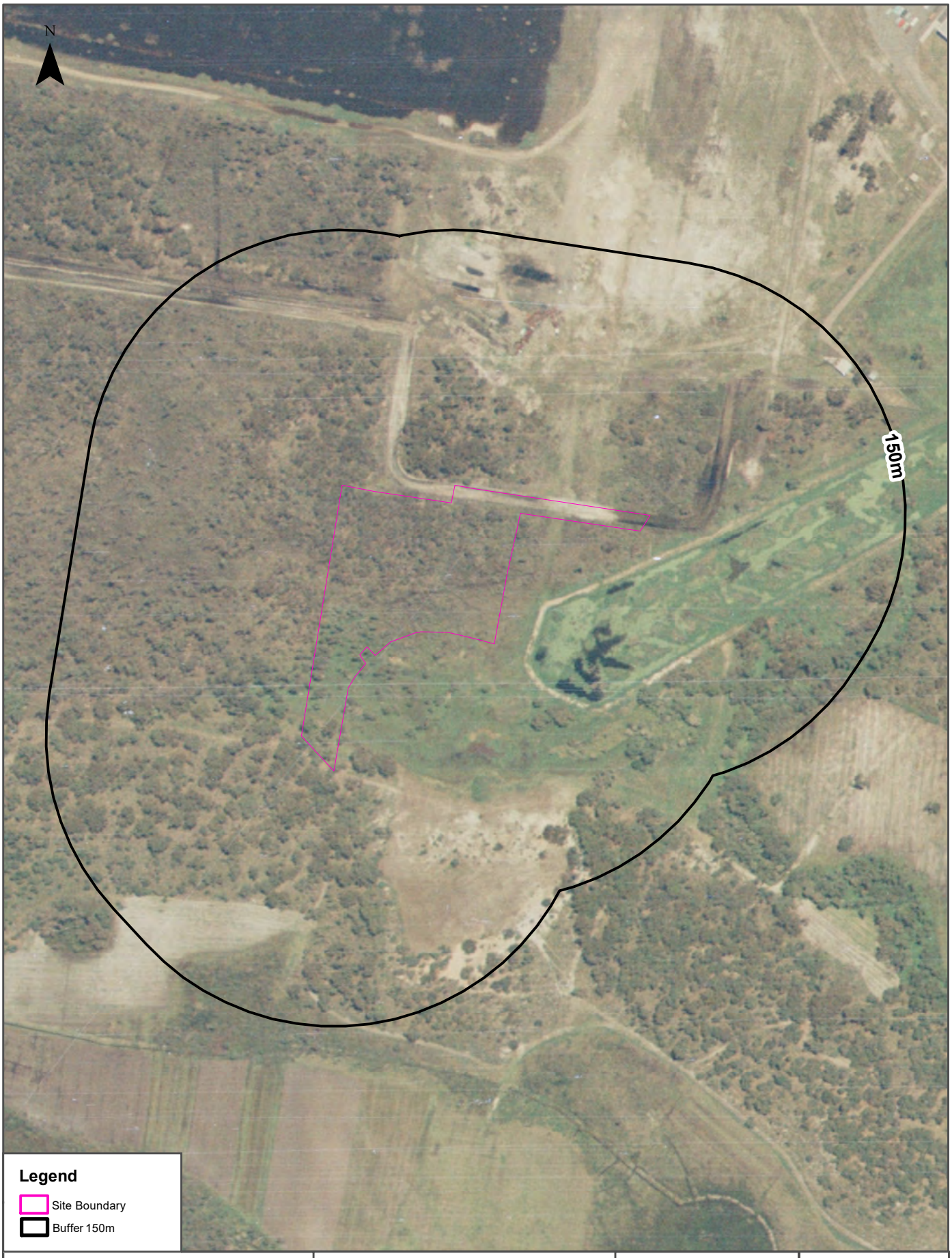
Aerial Imagery 1984

Jeffries Circuit, Williamtown, NSW 2318



Aerial Imagery 1976

Jeffries Circuit, Williamtown, NSW 2318



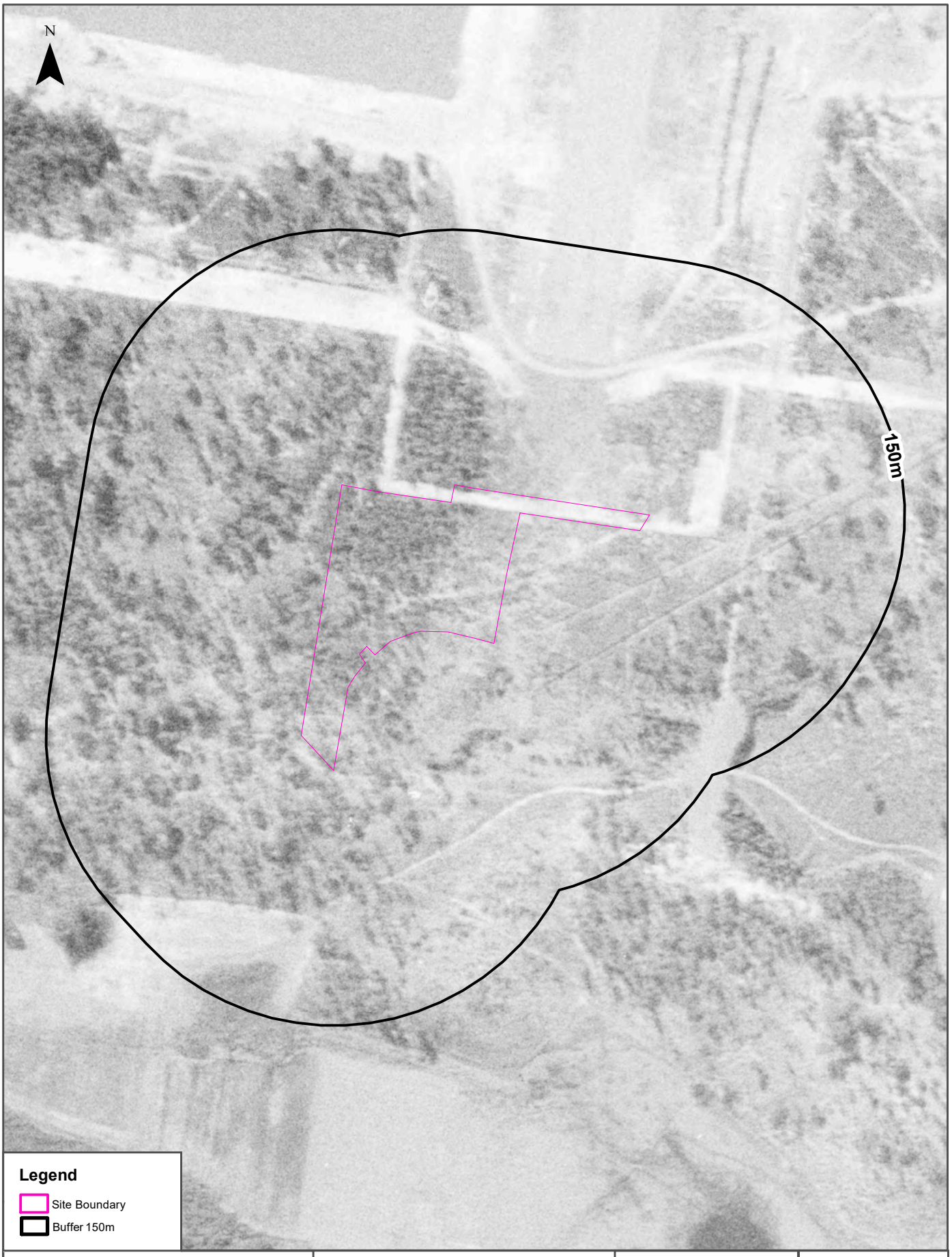
Aerial Imagery 1966

Jeffries Circuit, Williamtown, NSW 2318



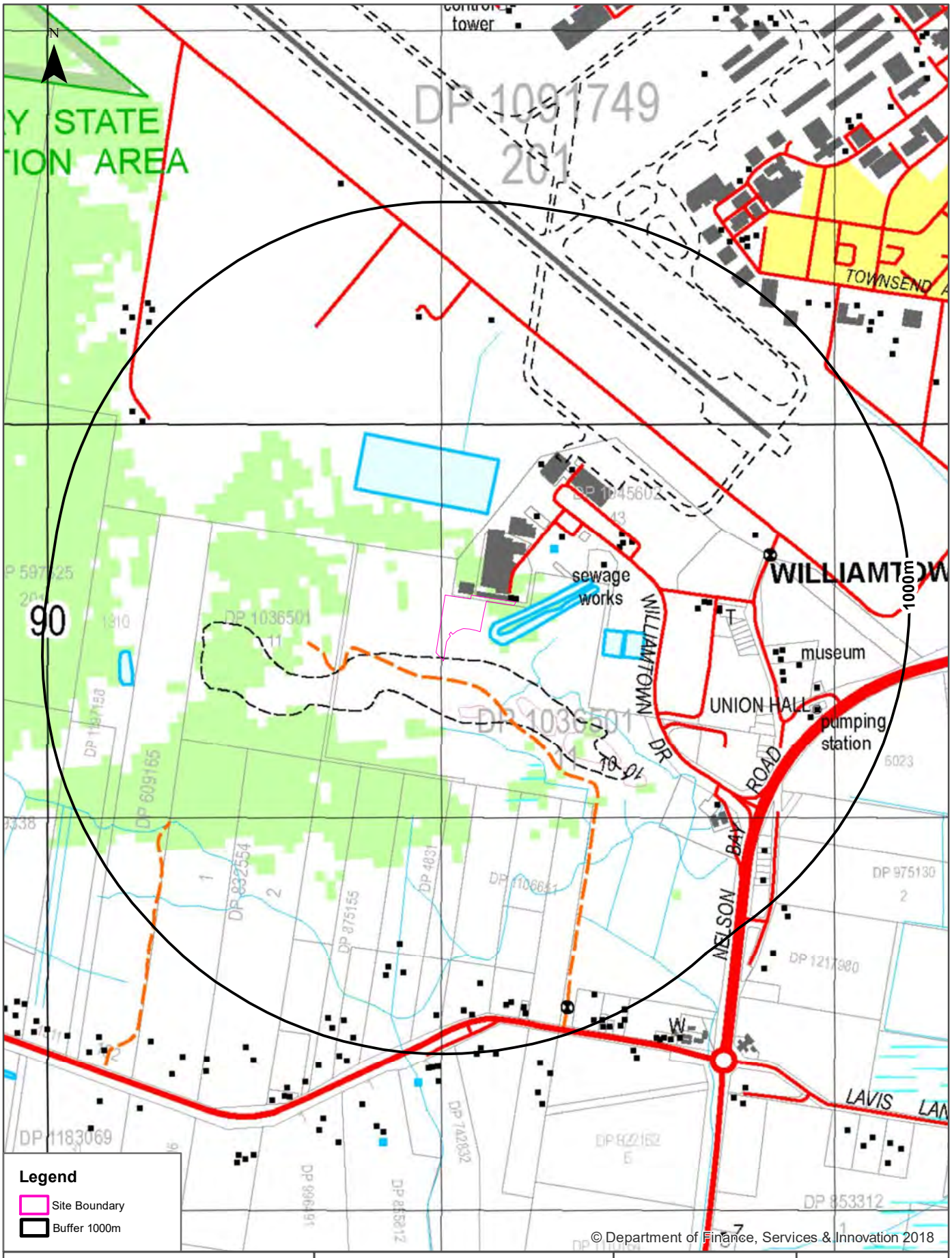
Aerial Imagery 1954

Jeffries Circuit, Williamtown, NSW 2318



Topographic Map 2015

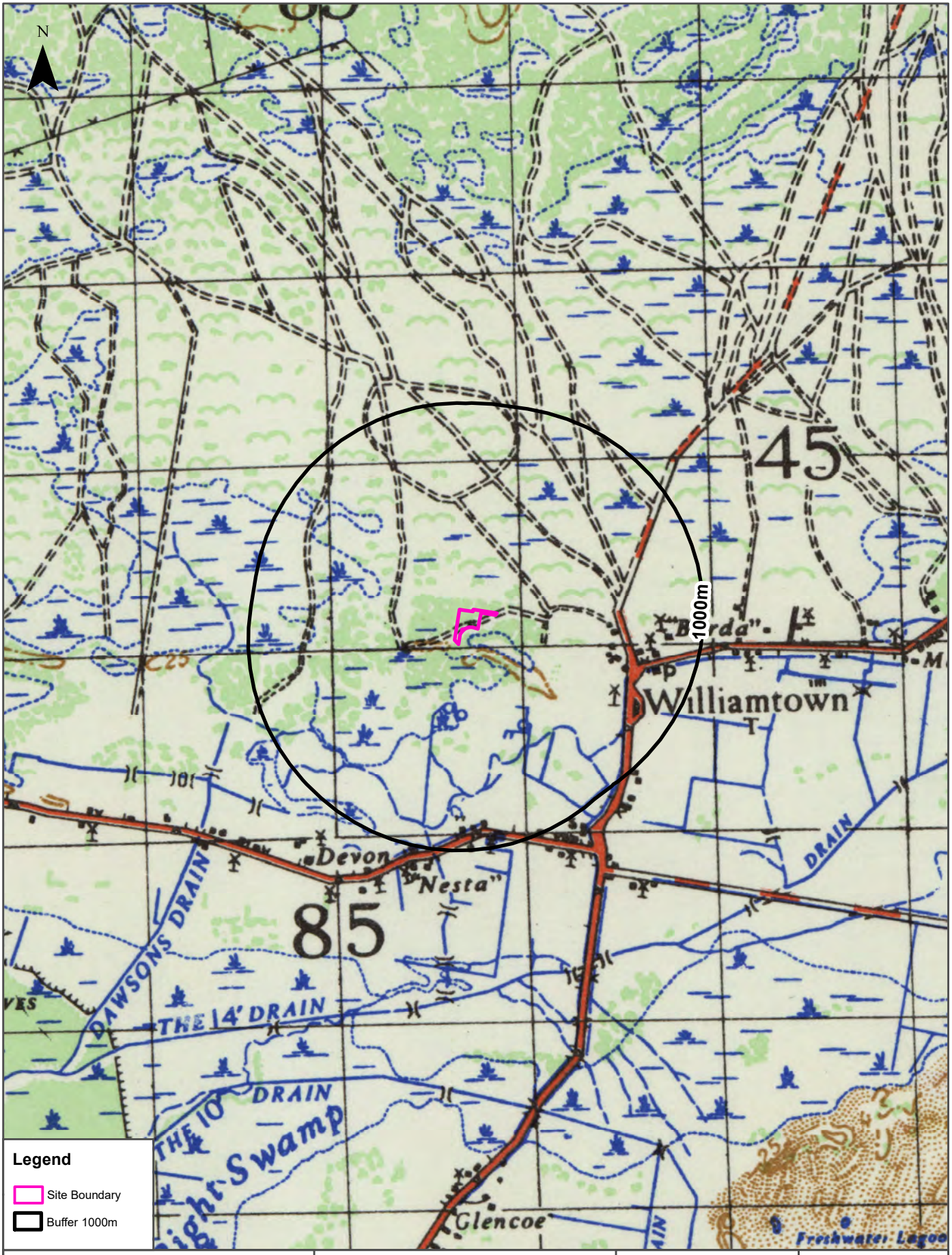
Jeffries Circuit, Williamtown, NSW 2318



Scale: 0 150 300 Meters 450 600	Data Sources: Topographic Map Data © NSW Land and Property Information	Coordinate System: GDA 1994 MGA Zone 56	Date: 28 June 2024

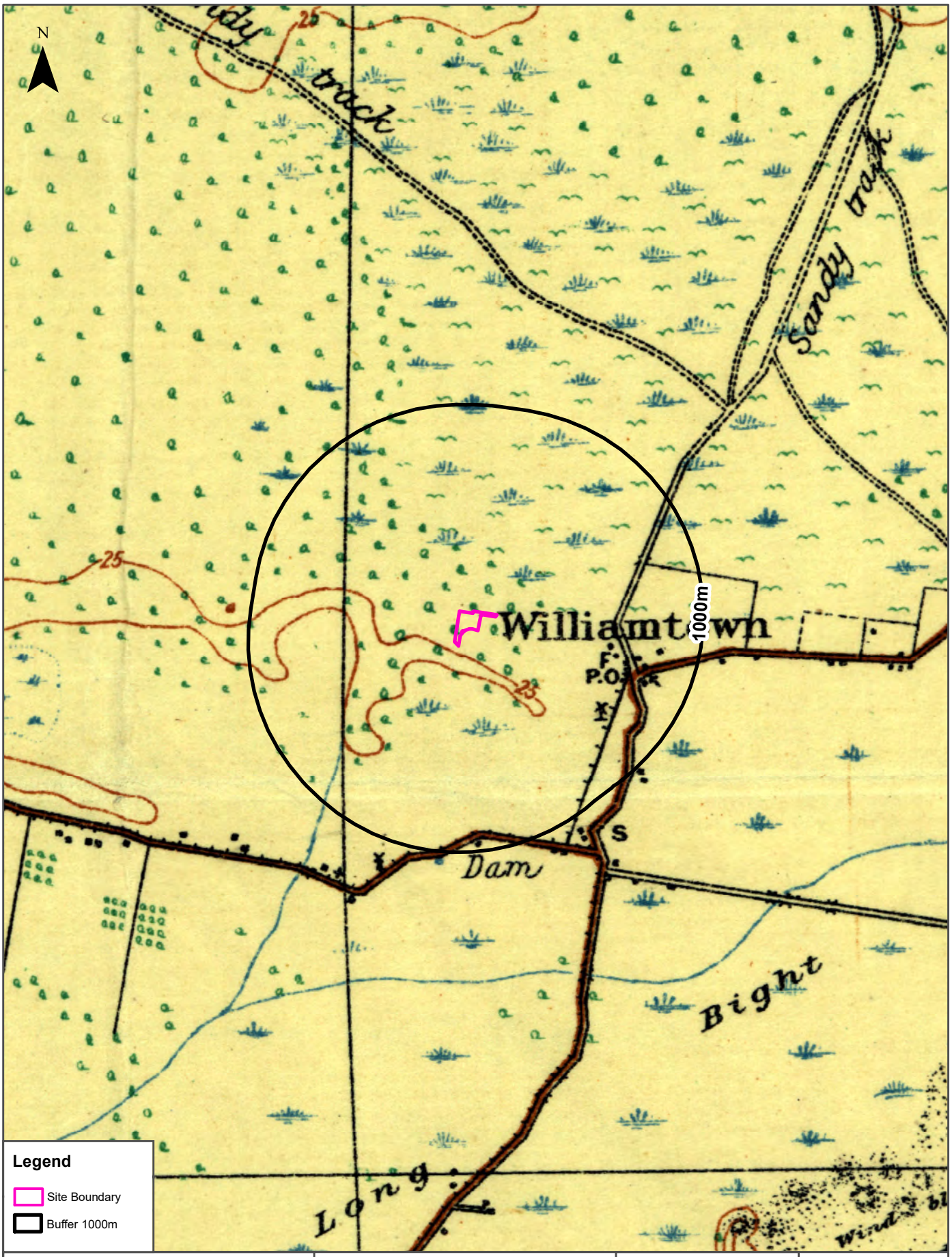
Historical Map c.1941

Jeffries Circuit, Williamtown, NSW 2318



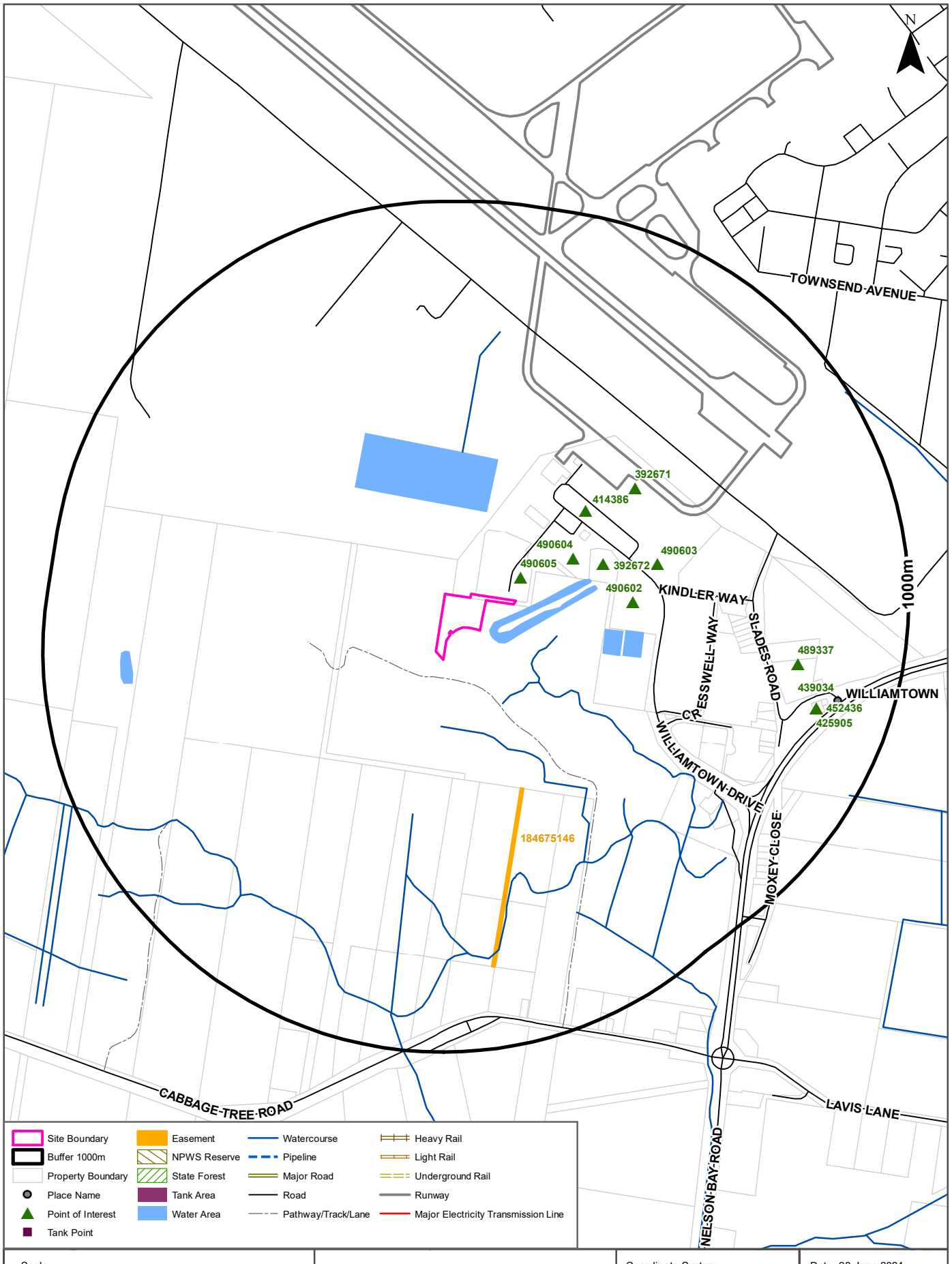
Historical Map c.1913

Jeffries Circuit, Williamtown, NSW 2318



Topographic Features

Jeffries Circuit, Williamtown, NSW 2318



Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 June 2024

Topographic Features

Jeffries Circuit, Williamtown, NSW 2318

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
490605	Parking Area	Parking Area	60m	North East
490604	Parking Area	Parking Area	180m	North East
392672	Sewage Works	Sewage Works	241m	East
414386	Parking Area	Parking Area	291m	North East
490602	Parking Area	Parking Area	298m	East
490603	Parking Area	Parking Area	372m	East
392671	Airport	WILLIAMTOWN AIRPORT	417m	North East
489337	Museum	MONARCH HISTORICAL MUSEUM	735m	East
425905	Pumping Station	WILLIAMTOWN BOOSTER	812m	East
452436	Community Facility	UNION HALL	812m	East
439034	Village	WILLIAMTOWN	860m	East

Topographic Data Source: © Land and Property Information (2015)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Topographic Features

Jeffries Circuit, Williamtown, NSW 2318

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Tanks Data Source: © Land and Property Information (2015)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Major Easements

What Major Easements exist within the dataset buffer?
Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
184675146	Primary	Right of way	8	382m	South

Easements Data Source: © Land and Property Information (2015)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Topographic Features

Jeffries Circuit, Williamtown, NSW 2318

State Forest

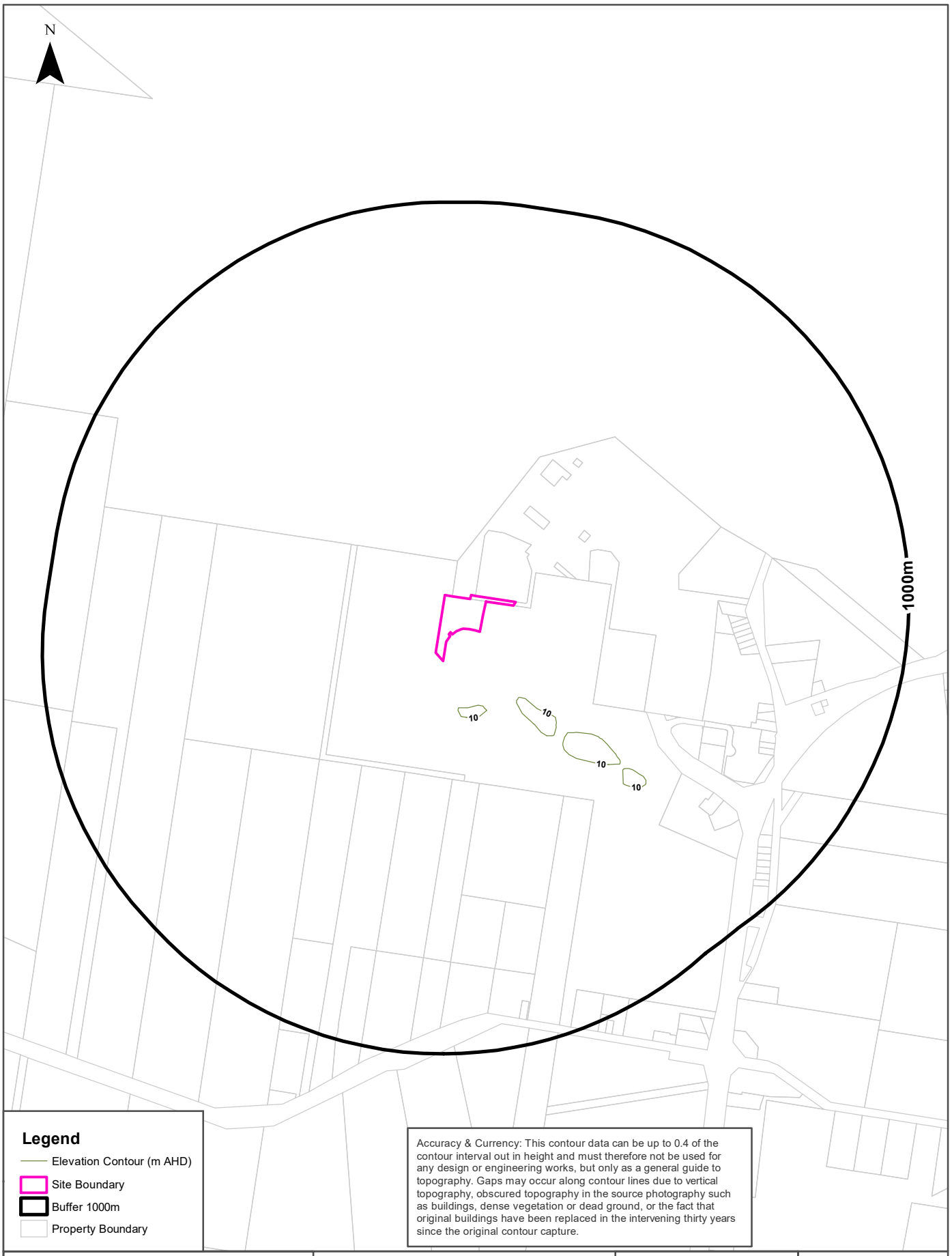
What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Elevation Contours (m AHD)

Jeffries Circuit, Williamtown, NSW 2318



Legend

- Elevation Contour (m AHD)
- Site Boundary
- Buffer 1000m
- Property Boundary

Accuracy & Currency: This contour data can be up to 0.4 of the contour interval out in height and must therefore not be used for any design or engineering works, but only as a general guide to topography. Gaps may occur along contour lines due to vertical topography, obscured topography in the source photography such as buildings, dense vegetation or dead ground, or the fact that original buildings have been replaced in the intervening thirty years since the original contour capture.

Scale: 0 100 200 400 Meters	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024	Coordinate System: GDA 1994 MGA Zone 56	Date: 28 June 2024

Hydrogeology & Groundwater

Jeffries Circuit, Williamtown, NSW 2318

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive highly productive aquifers	0m	On-site

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

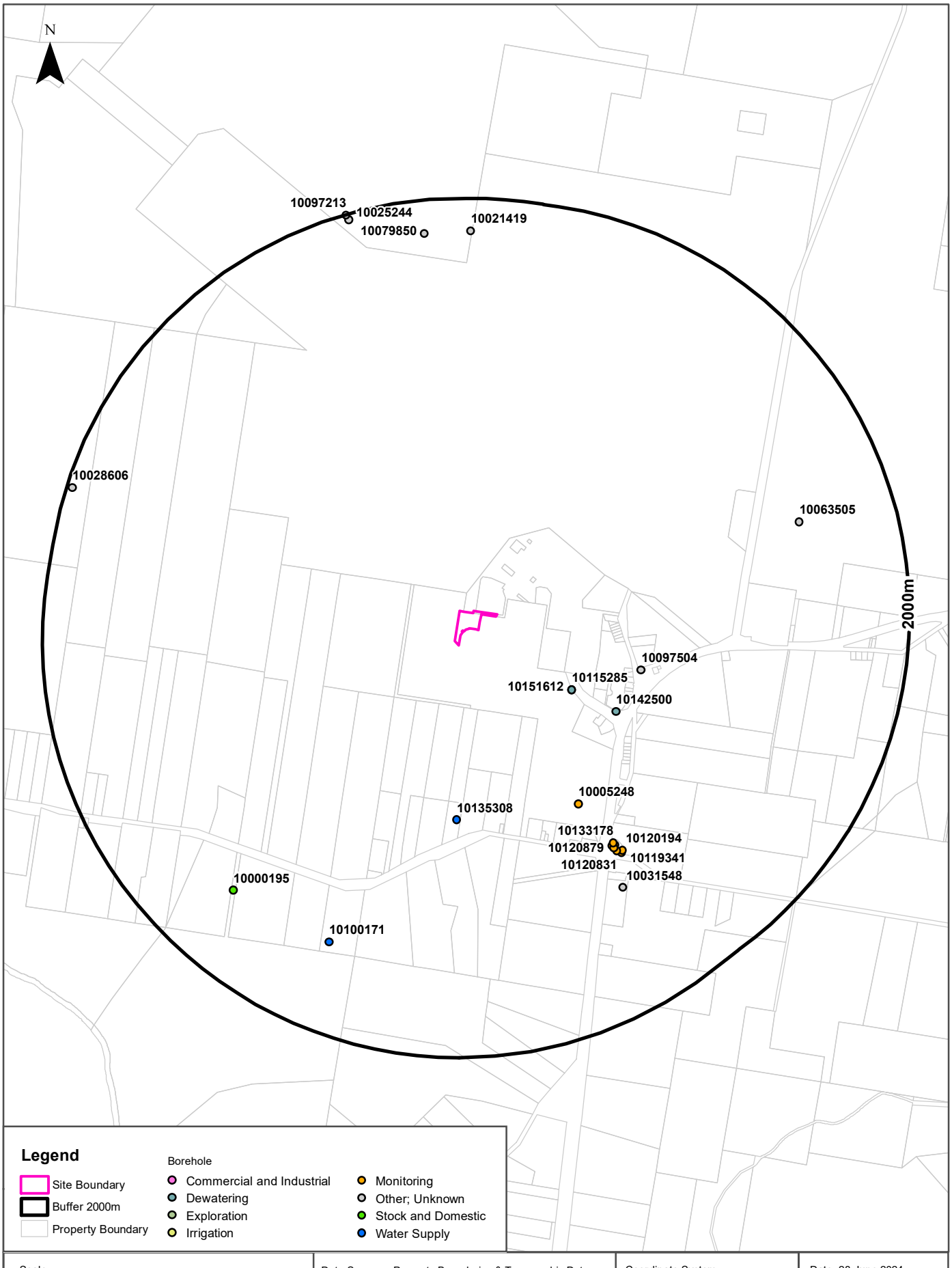
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

Prohibition Area No.	Prohibition	Distance	Direction
N/A	No records in buffer		

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

Jeffries Circuit, Williamtown, NSW 2318



Hydrogeology & Groundwater

Jeffries Circuit, Williamtown, NSW 2318

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10151612	GW203251	Dewatering	Functioning	30/06/2014	4.80		AHD		0.500	0.60	512m	South East
10115285	GW203979	Dewatering	Unknown	30/06/2014	4.80		AHD			0.60	513m	South East
10142500	GW203978	Dewatering	Proposed	30/06/2014	4.80		AHD			0.60	744m	South East
10097504	GW079557	Unknown	Unknown				AHD				750m	East
10135308	GW067175	Water Supply	Functioning		11.00	15.00	AHD		5.620	1.50	847m	South
10005248	GW080079	Monitoring	Unknown	16/07/2002	8.57	2.65	AHD	269	0.160	1.10	964m	South East
10133178	GW202292	Monitoring	Functional	13/10/2010	3.00		AHD				1217m	South East
10120879	GW202291	Monitoring	Functional	13/10/2010	3.00		AHD			2.10	1224m	South East
10122937	GW202295	Monitoring	Functional	14/10/2010	3.00		AHD			1.30	1230m	South East
10123082	GW202290	Monitoring	Functional	13/10/2010	3.00		AHD			1.10	1240m	South East
10120831	GW202289	Monitoring	Functional	13/10/2010	3.00		AHD			1.10	1258m	South East
10120194	GW202293	Monitoring	Functional	13/10/2010	3.00		AHD			1.30	1272m	South East
10119341	GW202294	Monitoring	Functional	14/10/2010	3.00		AHD			1.30	1280m	South East
10031548	GW079373	Unknown	Unknown				AHD				1419m	South East
10063505	GW079630	Unknown	Unknown				AHD				1533m	East
10100171	GW078012	Water Supply	Unknown	24/11/1992	7.00		AHD				1570m	South West
10000195	GW203311	Stock and Domestic	Functioning	11/03/2015	7.30		AHD		2.000	0.95	1614m	South West
10079850	GW079531	Unknown	Unknown				AHD				1836m	North
10021419	GW079495	Unknown	Unknown				AHD				1841m	North
10025244	GW079494	Unknown	Unknown				AHD				1970m	North
10028606	GW079491	Unknown	Unknown				AHD				1971m	West
10097213	GW079420	Unknown	Unknown				AHD				1995m	North

Borehole Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Hydrogeology & Groundwater

Jeffries Circuit, Williamtown, NSW 2318

Driller's Logs

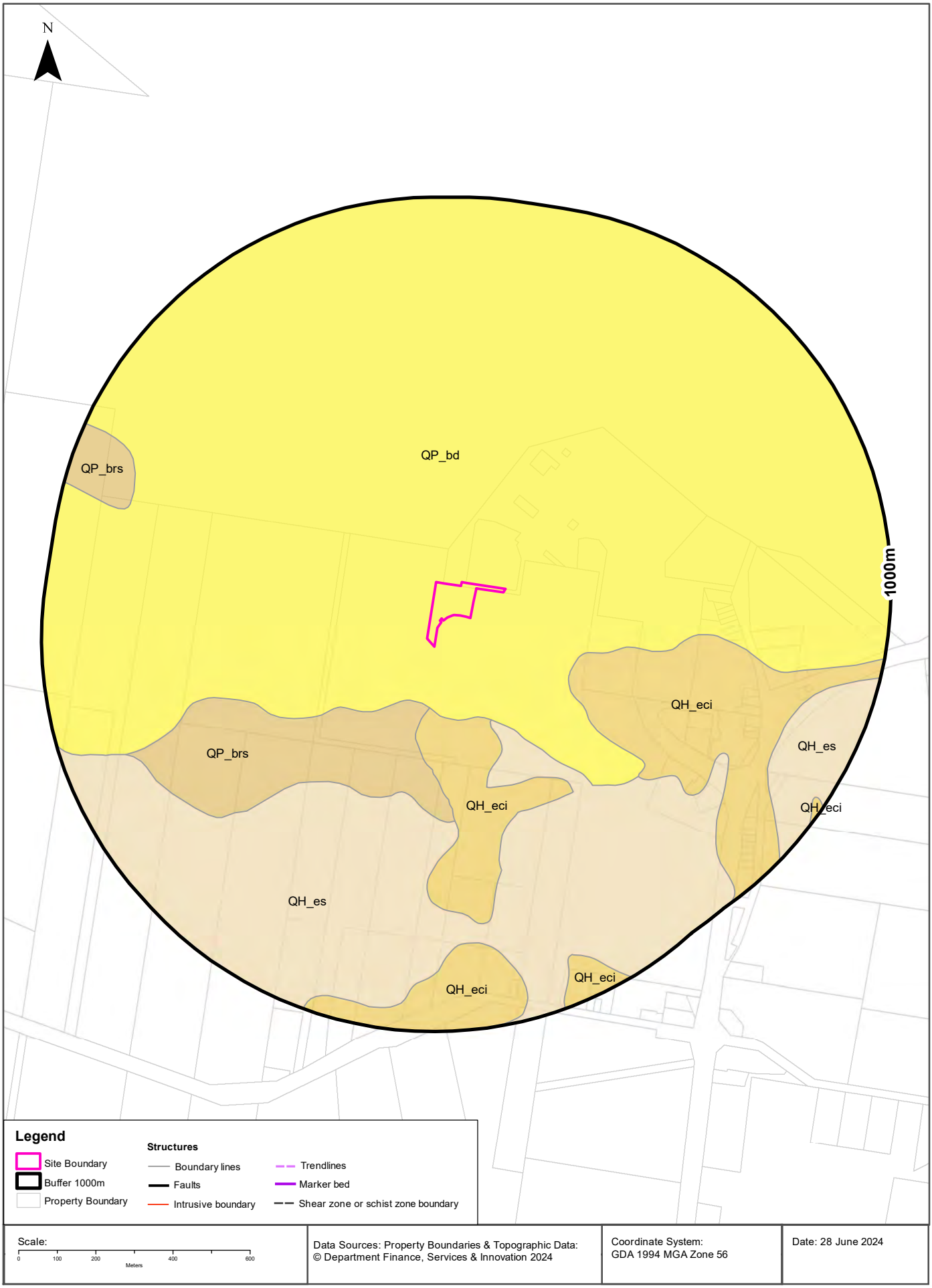
Drill log data relevant to the boreholes within the dataset buffer:

NGIS Bore ID	Drillers Log	Distance	Direction
10151612	0.00m-4.80m Sand; light grey, fine	512m	South East
10005248	0.00m-0.40m Top soil 0.40m-7.00m Sand - grey 7.00m-7.50m Rock - coffee 7.50m-8.40m Sand 8.40m-8.57m Rock	964m	South East
10133178	0.00m-0.50m Sand; medium to coarse grained, dark brown, with silt, dry 0.50m-2.00m Sand; medium to coarse grained, yellow/grey, moist 2.00m-3.00m Clayey Sand; fine to coarse grained, dark grey, wet	1217m	South East
10120879	0.00m-1.70m Sand; medium to coarse grained, yellow becoming grey with depth, dry 1.70m-3.00m Clayey sand; medium to coarse grained, dark grey, wet	1224m	South East
10122937	0.00m-0.20m Fill; Concrete 0.20m-0.50m Gravel, clayey 0.50m-2.50m Sand; medium to coarse grained, grey, no odour, moist, wet @1.2m 2.50m-3.00m Clayey Sand; medium to coarse grained, dark grey, no odour	1230m	South East
10123082	0.00m-1.50m Sand; medium to coarse grained, yellow becoming grey with depth, moist. West @ 1.1m - HC odour observed 1.50m-3.00m Sandy Silty Clay; medium plasticity, dark grey, with shells	1240m	South East
10120831	0.00m-1.30m Sand; medium to coarse grained, yellow, becoming grey with depth, moist 1.30m-1.70m Silty Sandy Clay; medium plasticity, dark grey 1.70m-3.00m Clayey Sand; medium to coarse grained, grey to slightly yellow, wet	1258m	South East
10120194	0.00m-0.15m Fill; Concrete 0.15m-1.70m Sand; medium to coarse grained, yellow, no odour, moist 1.70m-2.00m Clay; dark grey, wet 2.00m-2.50m Sand; medium to coarse grained, dark grey, silt, wet 2.50m-3.00m Sandy Clay; medium to high plasticity, dark grey, no odour	1272m	South East
10119341	0.00m-0.17m Fill; Concrete 0.17m-0.40m Gravel, Clayey; moist 0.40m-1.60m Sand; medium to coarse grained, grey, no odour, moist, wet @1m 1.60m-2.50m Sandy Clay; dark grey, no odour 2.50m-3.00m Silty Clay; grey, sand present, no odour, organic matter present	1280m	South East
10100171	0.00m-0.50m Topsoil 0.50m-1.50m Sand 1.50m-7.00m	1570m	South West
10000195	0.00m-0.10m Topsoil, black, loamy 0.10m-0.95m Clay, stiff, grey, mottley brown 0.95m-1.40m Clay, grey, soft 1.40m-6.00m Sand, amber, with some organic material, medium grained 6.00m-7.30m Sand, sharp, angular, white, coarse grained	1614m	South West

Drill Log Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Geology

Jeffries Circuit, Williamtown, NSW 2318



Geology

Jeffries Circuit, Williamtown, NSW 2318

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
QP_bd	Coastal deposits - dune facies	Marine-deposited and aeolian-reworked coastal sand dunes; partially consolidated.	\Coastal deposits\ \Coastal deposits - dune facies\\	Quaternary (base) to Now (top)	Sand	0m
QP_brs	Coastal deposits - beach-ridge swale and dune-deflation hollow	Fine- to medium-grained quartz-lithic-carbonate (marine-deposited) sand, organic-rich mud, peat.	\Coastal deposits\ \Coastal deposits - beach ridge\Coastal deposits - beach-ridge swale and dune-deflation hollow\	Pleistocene (base) to Now (top)	Sand	150m
QH_eci	Estuarine in-channel bar and beach deposits	Fine- to medium-grained lithic-carbonate-quartz sand (marine-deposited), silt, clay, shell, gravel.	\Estuarine deposits\ \Estuarine channel deposits\Estuarine in-channel bar and beach deposits\	Holocene (base) to Now (top)	Clastic sediment	160m
QH_es	Estuarine swamp	Organic-rich mud, peat, clay, silt, very fine- to fine-grained sand (marine-deposited), fine- to medium-grained sand (fluvially deposited).	\Estuarine deposits\ \Estuarine swamp\\	Holocene (base) to Now (top)	Organic rich sediment	241m

Linear Geological Structures

What are the Dyke, Sill, Fracture, Lineament and Vein trendlines within the dataset buffer?

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

What are the Faults, Shear zones or Schist zones, Intrusive boundaries & Marker beds within the dataset buffer?

Map ID	Boundary Type	Description	Map Sheet Name	Distance
No Features				

Geological Data Source: Statewide Seamless Geology v2.1, Department of Regional NSW

Creative Commons 4.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/4.0/au/deed.en

Naturally Occurring Asbestos Potential

Jeffries Circuit, Williamtown, NSW 2318

Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Naturally Occurring Asbestos Potential Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Atlas of Australian Soils

Jeffries Circuit, Williamtown, NSW 2318



Soils

Jeffries Circuit, Williamtown, NSW 2318

Atlas of Australian Soils

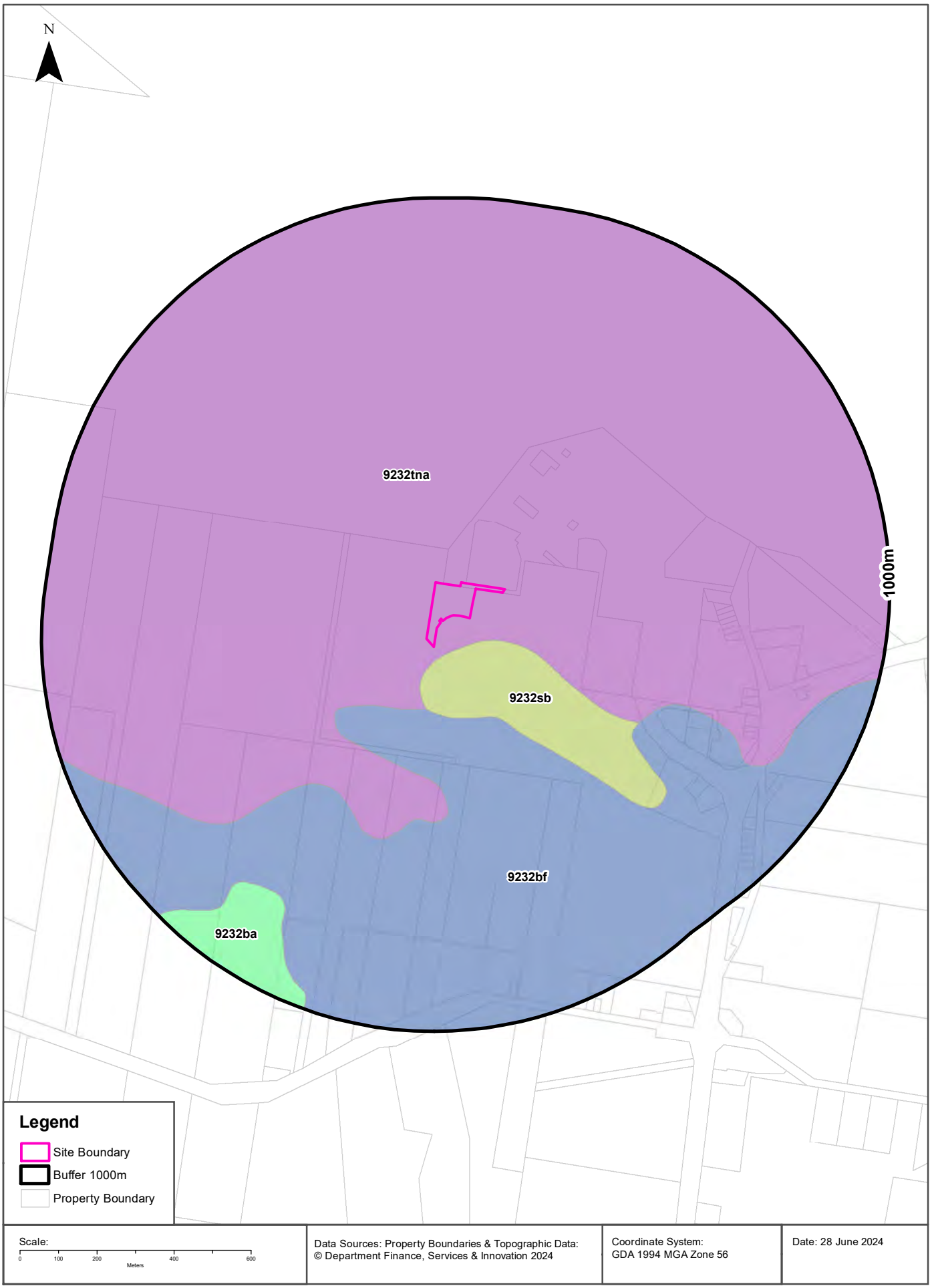
Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Gb10	Dermosol	River terraces, levees, flood-plains, coastal swamps, and tidal flats: this unit contains the same land forms and soils as unit Gb9, but in addition has (i) swamps and levees of the lower river flood-plain of (Uf6.6), (Ug5), and other undescribed soils; (ii) estuarine flats of peaty or organic soils over acid clays; and (iii) tidal mud flats. The soils of these areas are not well known but probably have similarities with the soils of units J3, Mc4, NY1, and NN1. The smaller areas mapped as unit Gb10 consist mainly of areas of (i) and/or (iii) above.	0m	On-site
Cb28	Podosol	Undulating coastal plains (ridge and swale sand plains with swampy hollows), tracts of dunes: chief soils are various leached sands (Uc2.3) including (Uc2.33). Associated are tracts of relatively stable dunes of leached sand (Uc2.2); swampy hollows of various acid peats (0) and (Uc2) soils with peaty surfaces; and relatively unstable dunes of calcareous sands (Uc1.l) and/or siliceous sands (Uc1.2) bordering the coast. Compare unit A9. As mapped, low hills of undescribed soils projecting through the sand plain, e.g. Nelson's Bay area, and some coastal swampy areas are included.	976m	North

Atlas of Australian Soils Data Source: CSIRO
Creative Commons 4.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/4.0/au/deed.en

Soil Landscapes of Central and Eastern NSW

Jeffries Circuit, Williamtown, NSW 2318



Soils

Jeffries Circuit, Williamtown, NSW 2318

Soil Landscapes of Central and Eastern NSW

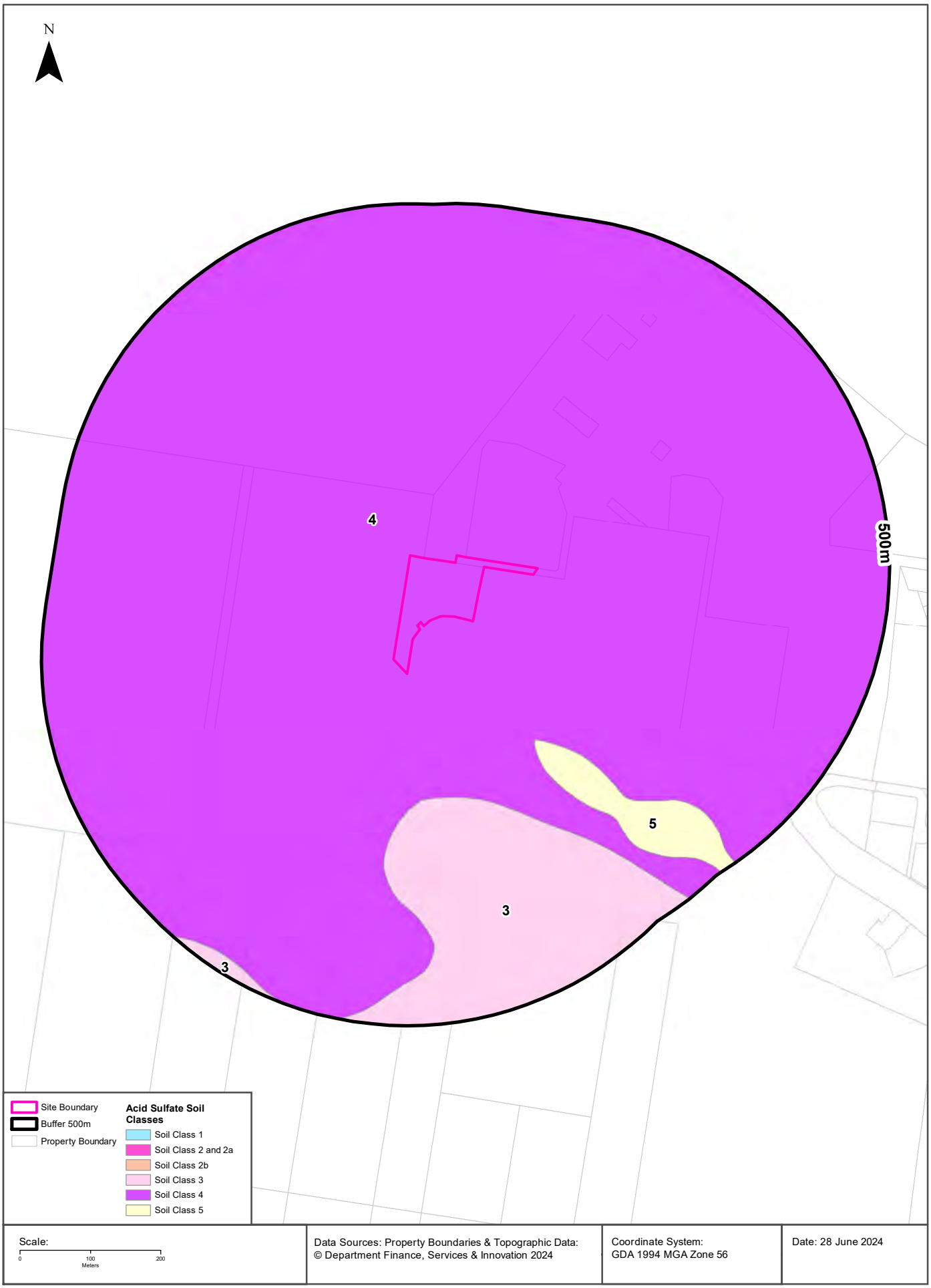
Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
9232tna	Tea Gardens variant a	0m	On-site
9232sb	Shoal Bay	31m	South East
9232bf	Bobs Farm	164m	South
9232ba	Blind Harrys Swamp	759m	South West

Soil Landscapes of Central and Eastern NSW: NSW Department of Planning, Industry and Environment
Creative Commons 4.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/4.0/au/deed.en

Acid Sulfate Soils

Jeffries Circuit, Williamtown, NSW 2318



Acid Sulfate Soils

Jeffries Circuit, Williamtown, NSW 2318

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

Soil Class	Description	EPI Name
4	Works more than 2 metres below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered more than 2 metres below natural ground surface, present an environmental risk	Port Stephens Local Environmental Plan 2013

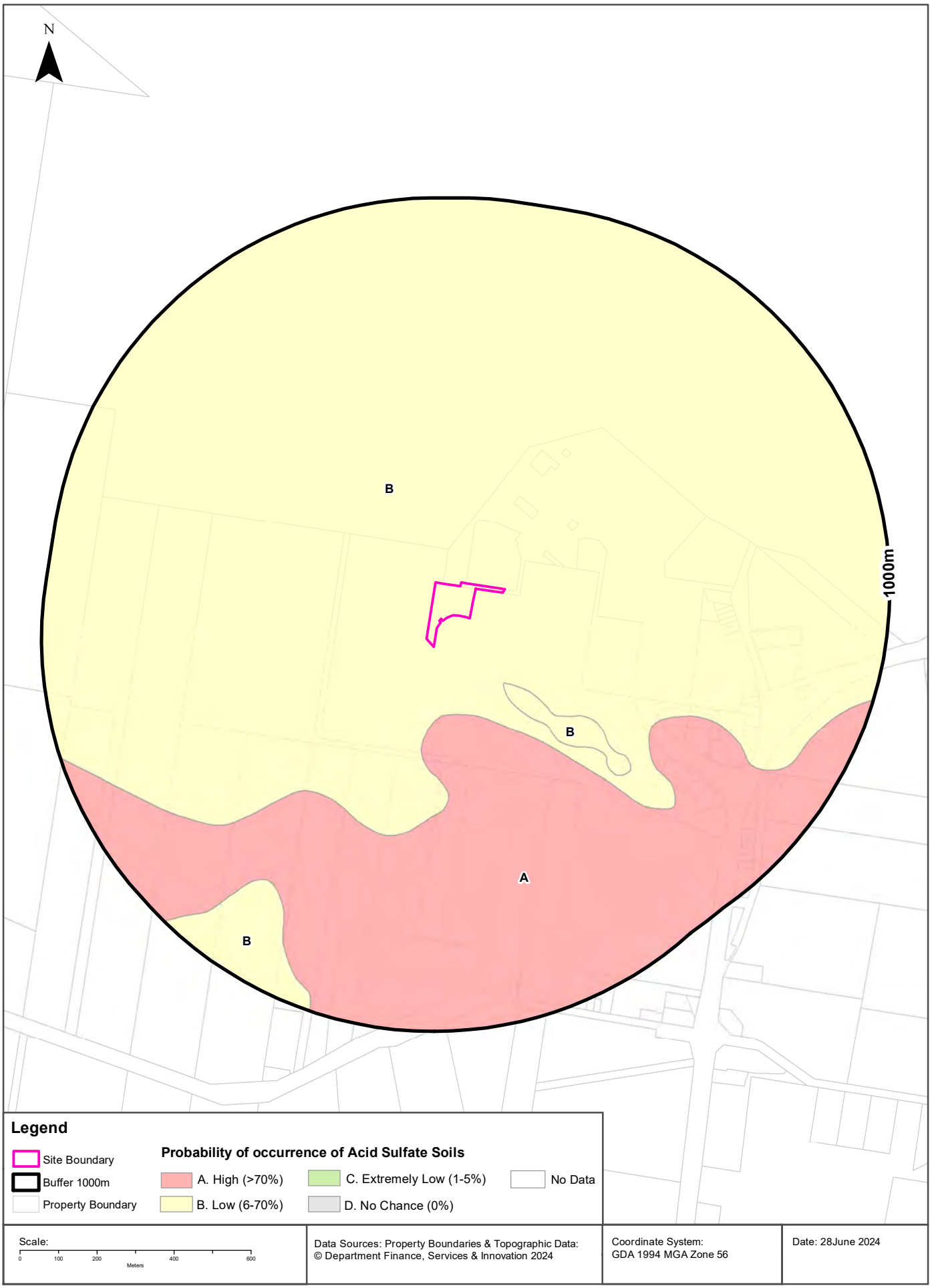
If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

NSW Crown Copyright - Planning and Environment
Creative Commons 4.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/4.0/

Atlas of Australian Acid Sulfate Soils

Jeffries Circuit, Williamtown, NSW 2318



Acid Sulfate Soils

Jeffries Circuit, Williamtown, NSW 2318

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance	Direction
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	180m	South

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Dryland Salinity

Jeffries Circuit, Williamtown, NSW 2318

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

Is there Dryland Salinity - National Assessment data within the dataset buffer?

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A		

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining

Jeffries Circuit, Williamtown, NSW 2318

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining Subsidence District Data Source: © Land and Property Information (2016)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Mining & Exploration Titles

Jeffries Circuit, Williamtown, NSW 2318



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 June 2024

Mining

Jeffries Circuit, Williamtown, NSW 2318

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer								

Current Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

Jeffries Circuit, Williamtown, NSW 2318

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL267	AGL UPSTREAM INVESTMENTS PTY LIMITED	19930413	19991205	MINERALS		0m	On-site
PEL0174	NSW OIL AND GAS COMPANY NL			PETROLEUM	Petroleum	0m	On-site
PEL0458	HUNTER GAS PTY LTD	20080606	20160606	PETROLEUM	Petroleum	0m	On-site
PEL0267	SYDNEY OIL CO (NSW) PTY LTD, MANVANE PTY LTD AUSTRALIA NL, BASE RESOURCES LTD, SEAHAWK OIL AUSTRALIA NL, READING & BATES	19850801	20150607	PETROLEUM	Petroleum	0m	On-site
PEL0088	PLANET EXPLORATION COMPANY PTY LTD			PETROLEUM	Petroleum	0m	On-site
PEL0230	GIRVAN OIL AND GAS PTY LTD (PHOENIX OIL AND GAS NL)			PETROLEUM	Petroleum	0m	On-site
PEL458	HUNTER GAS PTY LTD	20130215	30000101	MINERALS		0m	On-site
PSPAUTH18	MACQUARIE ENERGY PTY LTD	20070803	20080703	PETROLEUM	Petroleum	0m	On-site
EL2683	RUTILE & ZIRCON MINES (NEWCASTLE) LTD	19861001	19951001	MINERALS	Heavy mineral sands	93m	West
EL8119	ACI INDUSTRIAL MINERALS PTY LTD	20130701	20150701	MINERALS	Heavy mineral sands	211m	West
AUTH0203	DEPARTMENT OF MINERAL RESOURCES	19800424	19930424	COAL	Coal	367m	West

Historical Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

State Environmental Planning Policy

Jeffries Circuit, Williamtown, NSW 2318

State Significant Precincts

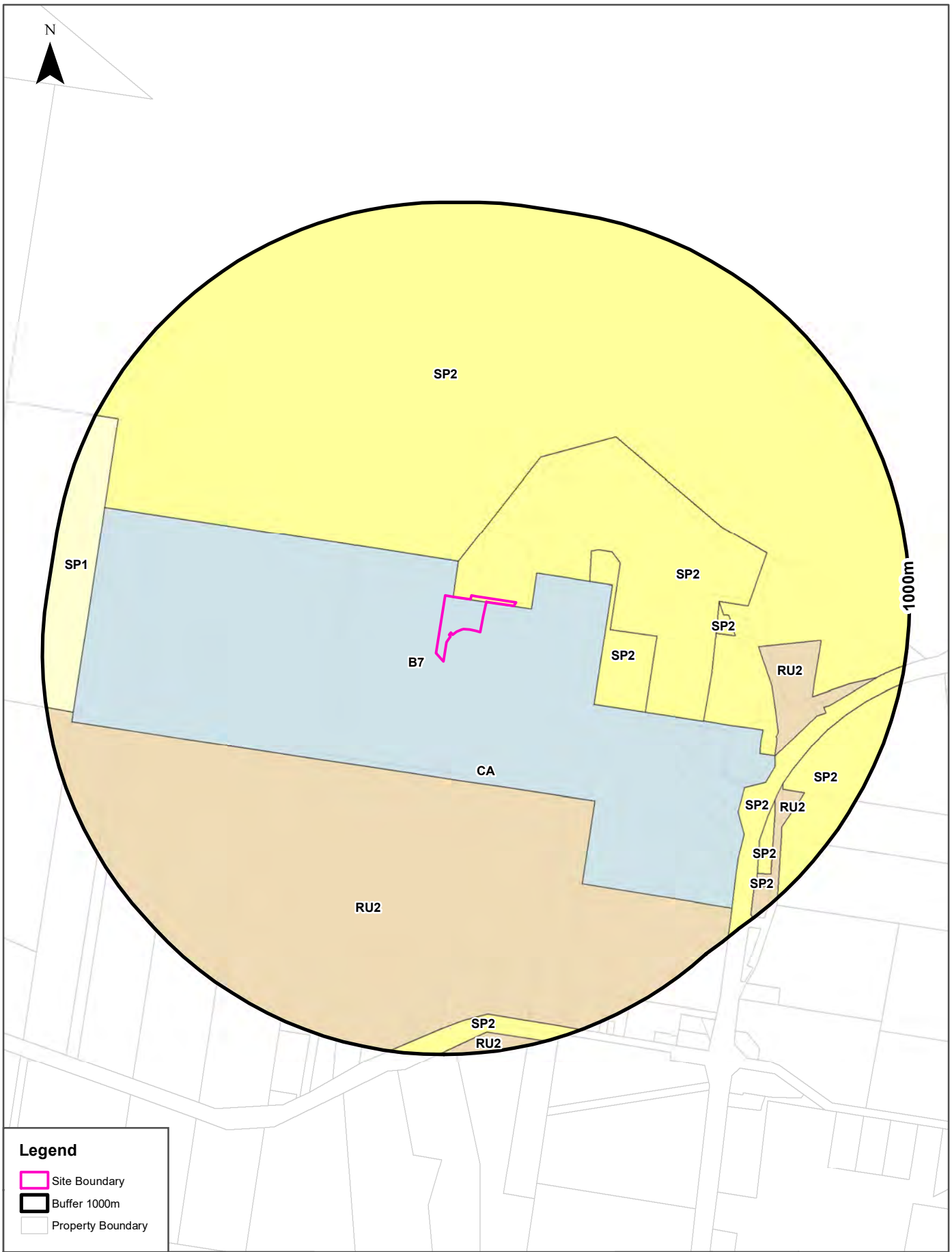
What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No records in buffer							

State Environment Planning Policy Data Source: NSW Crown Copyright - Planning & Environment
Creative Commons 4.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/4.0/

EPI Planning Zones

Jeffries Circuit, Williamtown, NSW 2318



Environmental Planning Instrument

Jeffries Circuit, Williamtown, NSW 2318

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
SP2	Infrastructure	Defence/ Air Transport Facility	Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	0m	On-site
CA	Complex Area		Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	0m	On-site
B7	Business Park		Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	0m	On-site
SP2	Infrastructure	Defence	Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	91m	North
SP2	Infrastructure	Defence	Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	192m	East
RU2	Rural Landscape		Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	294m	South
SP2	Infrastructure	Public Utility Undertaking	Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	511m	East
RU2	Rural Landscape		Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	625m	East
SP2	Infrastructure	Classified Road	Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	745m	South East
SP2	Infrastructure	Defence	Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	818m	South East
RU2	Rural Landscape		Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	818m	South East
SP2	Infrastructure	Defence	Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	825m	South East
SP1	Special Activities	Hunter Water Corporation	Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	889m	West
SP2	Infrastructure	Defence	Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	926m	South East
RU2	Rural Landscape		Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	22/03/2024	Map Amendment No 5	948m	South

Environmental Planning Instrument Data Source: NSW Crown Copyright - Planning & Environment
Creative Commons 4.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/4.0/

Heritage Items

Jeffries Circuit, Williamtown, NSW 2318



Heritage

Jeffries Circuit, Williamtown, NSW 2318

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
105639	Williamtown RAAF Base Group	Nelson Bay Rd, Williamtown RAAF NSW	1/09/064/0028	Historic	Listed place	22/06/2004	691m	North East

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
Creative Commons 3.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/3.0/au/deed.en

National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
Creative Commons 3.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/3.0/au/deed.en

State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
Creative Commons 4.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/4.0/

Environmental Planning Instrument - Heritage

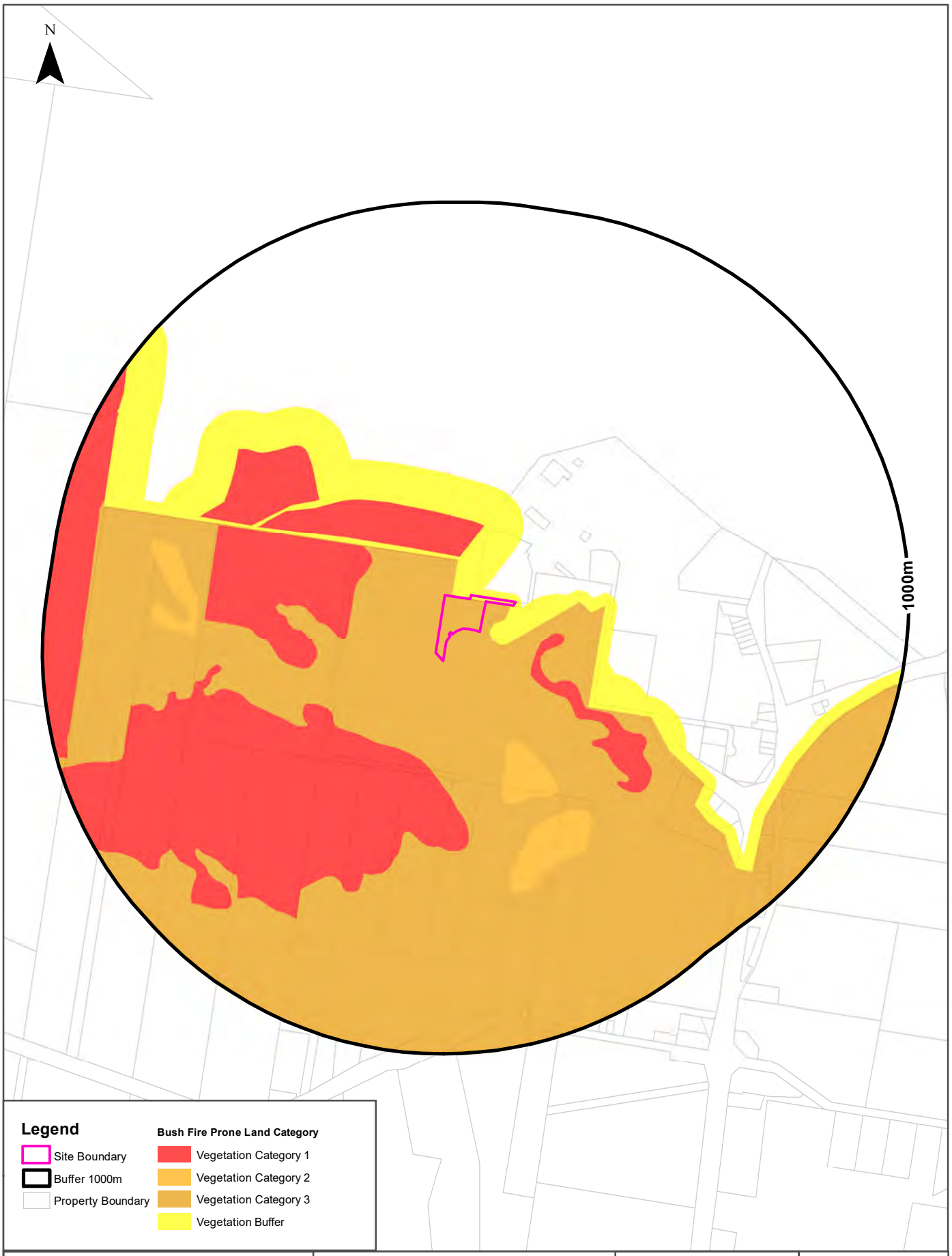
What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I109	Devon House, including former Moxeys slab cottage, dairy, hay shed and slab barn	Item - General	Local	Port Stephens Local Environmental Plan 2013	12/05/2023	12/05/2023	12/05/2023	527m	South West

Heritage Data Source: NSW Crown Copyright - Planning & Environment
Creative Commons 4.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/4.0/

Natural Hazards - Bush Fire Prone Land

Jeffries Circuit, Williamtown, NSW 2318



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2024. Property Boundaries: © Department Finance, Services & Innovation 2024

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 June 2024

Natural Hazards

Jeffries Circuit, Williamtown, NSW 2318

Bush Fire Prone Land

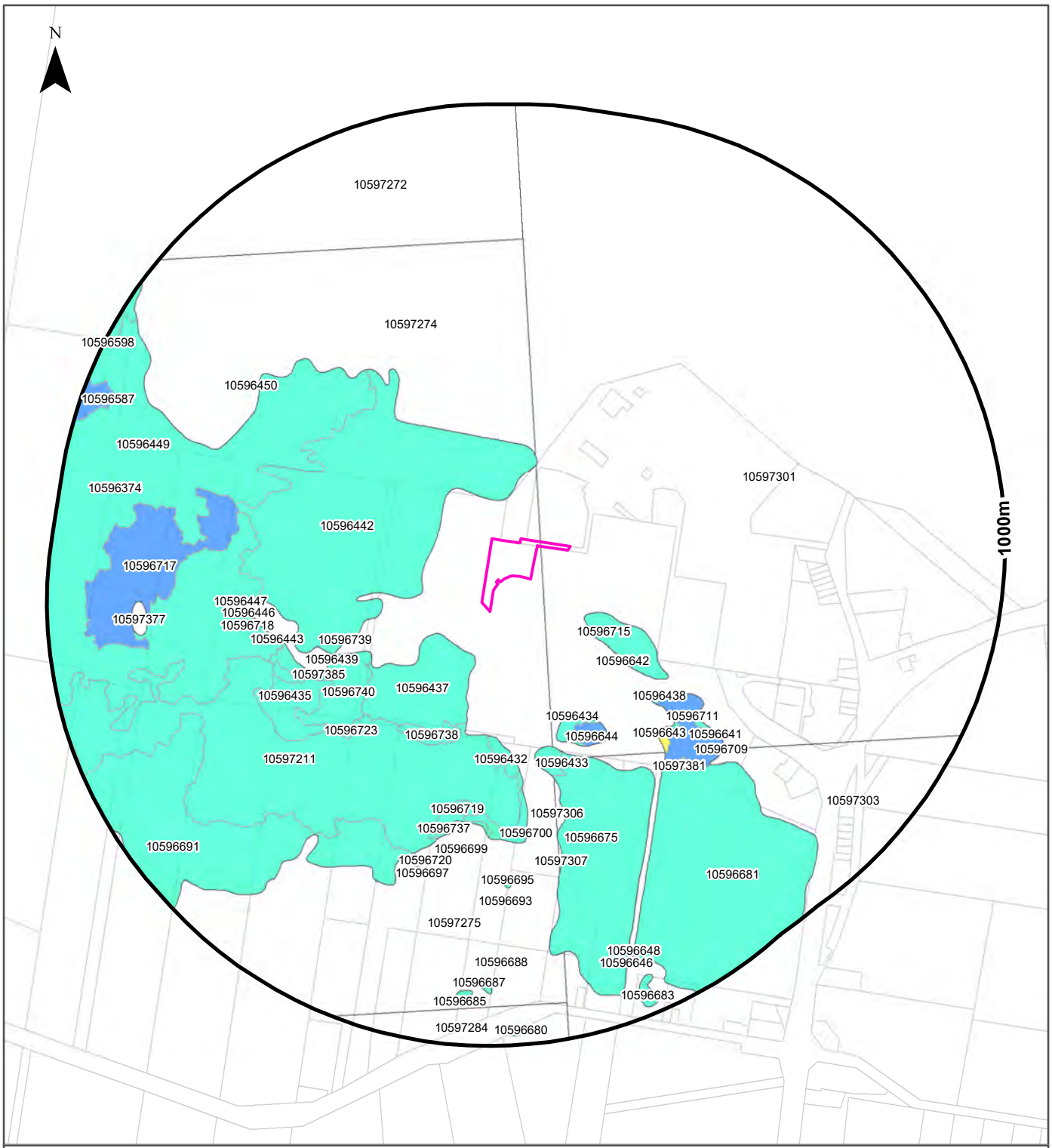
What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 3	0m	On-site
Vegetation Buffer	0m	On-site
Vegetation Category 1	101m	North West
Vegetation Category 2	267m	South

NSW Bush Fire Prone Land - © NSW Rural Fire Service under Creative Commons 4.0 International Licence

Ecological Constraints - Vegetation & Ramsar Wetlands

Jeffries Circuit, Williamtown, NSW 2318



- Site Boundary
- ReportBuffer
- Property Boundary
- Ramsar Wetland

Native Vegetation

- Alpine Complex
- Arid Shrublands (Acacia sub-formation)
- Arid Shrublands (Chenopod sub-formation)
- Dry Sclerophyll Forests (Shrub/grass sub-formation)
- Dry Sclerophyll Forests (Shrubby sub-formation)
- Forested Wetlands
- Freshwater Wetlands
- Grasslands
- Grassy Woodlands
- Heathlands
- Rainforests
- Saline Wetlands
- Semi-arid Woodlands (Grassy sub-formation)
- Semi-arid Woodlands (Shrubby sub-formation)
- Wet Sclerophyll Forests (Grassy sub-formation)
- Wet Sclerophyll Forests (Shrubby sub-formation)
- Non vegetated
- Unattributed
- Not classified
- Other

Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 June 2024

Ecological Constraints

Jeffries Circuit, Williamtown, NSW 2318

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10597275	Not classified	(Not classified) Not classified	Not classified	0m	On-site
10597301	Not classified	(Not classified) Not classified	Not classified	0m	On-site
10596442	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	87m	West
10596437	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	106m	South West
10596715	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	151m	South East
10597274	Not classified	(Not classified) Not classified	Not classified	194m	North West
10596642	Freshwater Wetlands	(Freshwater Wetlands) Lower North Sands Swamp Scrub	Coastal Heath Swamps	255m	South East
10597211	Forested Wetlands	(Forested Wetlands) Estuarine Sea Rush Swamp Oak Forest	Coastal Floodplain Wetlands	259m	South West
10596738	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	272m	South West
10596440	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	280m	South West
10596740	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	280m	South West
10596432	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	286m	South
10596434	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	296m	South
10596739	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	311m	South West
10596644	Freshwater Wetlands	(Freshwater Wetlands) Southern Lower Floodplain Freshwater Wetland	Coastal Freshwater Lagoons	327m	South East
10596743	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	333m	South West
10596433	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	336m	South
10596742	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	340m	South West
10596710	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	344m	South
10596741	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	358m	South West
10596675	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	359m	South
10596441	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	361m	South West
10597385	Not classified	(Not classified) Not classified	Not classified	361m	West
10596439	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	367m	South West
10596700	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	370m	South
10596438	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	380m	South East
10596714	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	381m	South East
10596435	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	385m	South West

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10596723	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	389m	South West
10596641	Freshwater Wetlands	(Freshwater Wetlands) Lower North Sands Swamp Scrub	Coastal Heath Swamps	398m	South East
10596713	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	400m	South East
10597303	Not classified	(Not classified) Not classified	Not classified	401m	South East
10596449	Forested Wetlands	(Forested Wetlands) Coastal Sands Swamp Mahogany Rush Forest	Coastal Swamp Forests	404m	West
10597306	Not classified	(Not classified) Not classified	Not classified	410m	South
10596719	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	437m	South
10596733	Forested Wetlands	(Forested Wetlands) Coastal Sands Swamp Mahogany Rush Forest	Coastal Swamp Forests	444m	South West
10596436	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	457m	South East
10596643	Heathlands	(Heathlands) Lower North Sandplain Wallum Heath	Wallum Sand Heaths	457m	South East
10596712	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	474m	South East
10596711	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	475m	South East
10596443	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	476m	West
10596444	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	489m	West
10596737	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	498m	South
10596681	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	517m	South East
10596718	Forested Wetlands	(Forested Wetlands) Estuarine Sea Rush Swamp Oak Forest	Coastal Floodplain Wetlands	522m	West
10596445	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	523m	West
10597381	Not classified	(Not classified) Not classified	Not classified	535m	South East
10596446	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	536m	West
10596705	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	538m	South East
10596447	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	539m	West
10596691	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	543m	South West
10596699	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	543m	South
10596721	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	543m	South
10597307	Not classified	(Not classified) Not classified	Not classified	546m	South
10596709	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	574m	South East
10596717	Freshwater Wetlands	(Freshwater Wetlands) Lower North Sands Swamp Scrub	Coastal Heath Swamps	578m	West
10596708	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	581m	South East
10596720	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	582m	South
10596707	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	587m	South East
10596706	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	588m	South East
10596697	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	611m	South
10596695	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	614m	South

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10596696	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	625m	South
10596450	Forested Wetlands	(Forested Wetlands) Coastal Sands Swamp Mahogany Rush Forest	Coastal Swamp Forests	650m	North West
10596693	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	654m	South
10597272	Not classified	(Not classified) Not classified	Not classified	683m	North
10597377	Not classified	(Not classified) Not classified	Not classified	772m	West
10596688	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	803m	South
10596648	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	845m	South
10596647	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	846m	South
10596687	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	849m	South
10596646	Forested Wetlands	(Forested Wetlands) Coastal Creekflat Layered Grass-Sedge Swamp Forest	Coastal Floodplain Wetlands	858m	South
10596374	Freshwater Wetlands	(Freshwater Wetlands) Lower North Sands Swamp Scrub	Coastal Heath Swamps	864m	West
10596685	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	874m	South
10597284	Not classified	(Not classified) Not classified	Not classified	908m	South
10596683	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	911m	South
10596587	Freshwater Wetlands	(Freshwater Wetlands) Northern Lowland Clay Wet Heath	Coastal Heath Swamps	931m	West
10596680	Forested Wetlands	(Forested Wetlands) Northern Melaleuca quinquenervia Swamp Forest	Coastal Swamp Forests	959m	South
10596598	Forested Wetlands	(Forested Wetlands) Tomago Drooping Red Gum Swamp Woodland	Coastal Swamp Forests	961m	North West

Native Vegetation Type Map : NSW Department of Planning and Environment 2022
Creative Commons Attributions 4.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/4.0/

Ecological Constraints

Jeffries Circuit, Williamtown, NSW 2318

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

Map ID	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Agriculture, Water and the Environment

Ecological Constraints

Jeffries Circuit, Williamtown, NSW 2318

Collaborative Australian Protected Areas Database - Terrestrial

Protected areas in terrestrial environments identified by the CAPAD within the dataset buffer:

Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Collaborative Australian Protected Areas Database - Marine

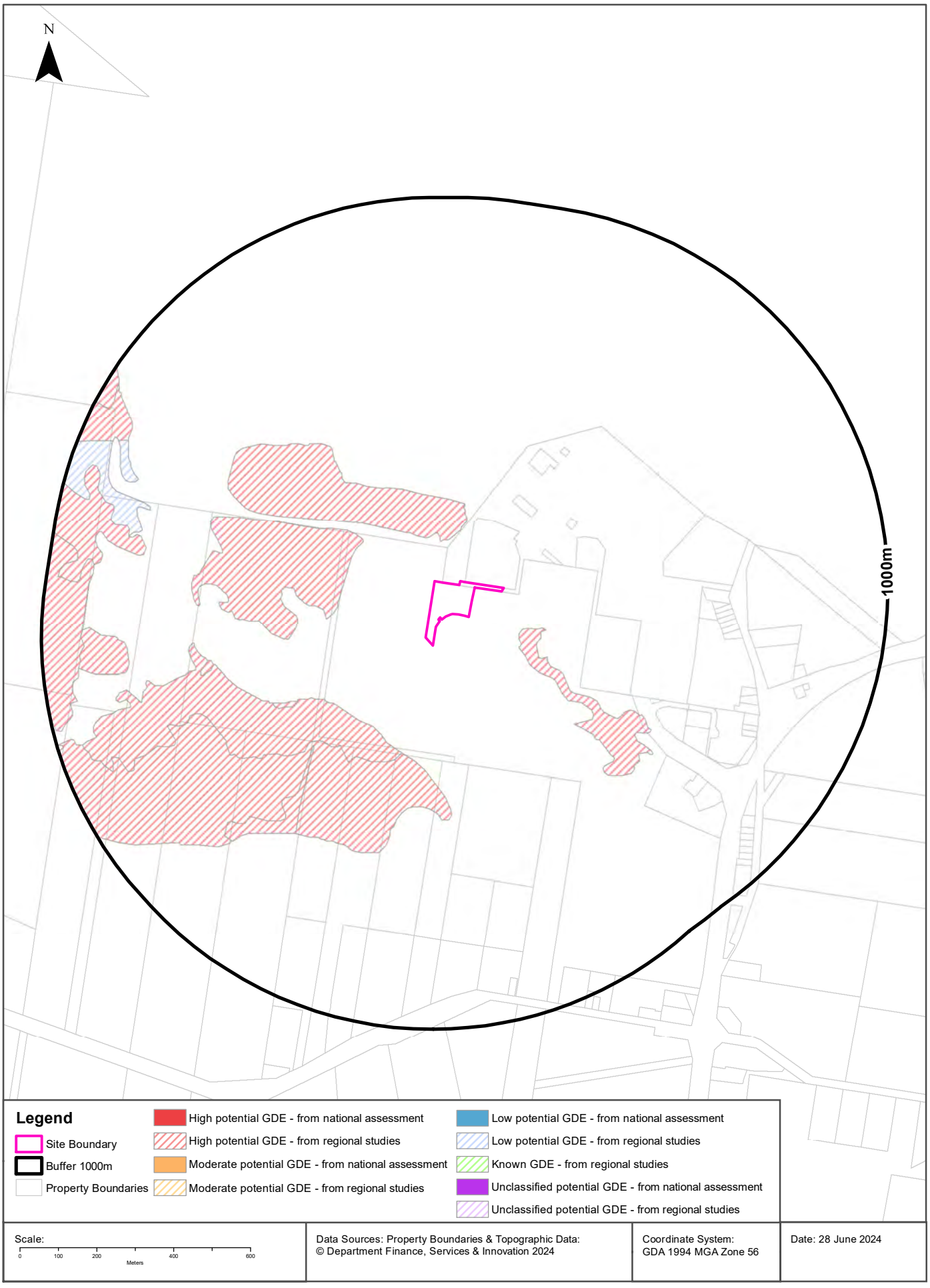
Protected areas in marine environments identified by the CAPAD within the dataset buffer:

Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Source: Collaborative Australian Protected Areas Database (CAPAD) 2022
Creative Commons 4.0 © Commonwealth of Australia 2023

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

Jeffries Circuit, Williamtown, NSW 2318



Ecological Constraints

Jeffries Circuit, Williamtown, NSW 2318

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	High potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		103m	North West
Terrestrial	Low potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		763m	West

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

Jeffries Circuit, Williamtown, NSW 2318



Ecological Constraints

Jeffries Circuit, Williamtown, NSW 2318

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	8	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		103m	North West
Terrestrial	1	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		112m	South East
Terrestrial	7	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		262m	South West
Terrestrial	6	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		292m	South West
Terrestrial	4	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		372m	South West
Terrestrial	5	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		776m	West
Terrestrial	10	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		996m	North West

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Ecological Constraints

Jeffries Circuit, Williamtown, NSW 2318

NSW BioNet Species Sightings

Species on the NSW BioNet Species Sightings that have a state or federal conservation status, a sensitivity status are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Crinia tinnula	Wallum Froglet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	Uperoleia mahonyi	Mahony's Toadlet	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Anous stolidus	Common Noddy	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Category 2	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris alba	Sanderling	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris canutus	Red Knot	Not Listed	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris melanotos	Pectoral Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris subminuta	Long-toed Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris tenuirostris	Great Knot	Vulnerable	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	Charadrius leschenaultii	Greater Sand-plover	Vulnerable	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Charadrius mongolus	Lesser Sand-plover	Vulnerable	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Charadrius veredus	Oriental Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Chlidonias leucopterus	White-winged Black Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Cuculus optatus	Oriental Cuckoo	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Dromaius novaehollandiae	Emu	Endangered Population	Not Sensitive	Not Listed	
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Esacus magnirostris	Beach Stone-curlew	Critically Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Gelochelidon nilotica	Gull-billed Tern	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus fuliginosus	Sooty Oystercatcher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus longirostris	Pied Oystercatcher	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Leipoa ocellata	Malleefowl	Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Limicola falcinellus	Broad-billed Sandpiper	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Limnodromus semipalmatus	Asian Dowitcher	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Limosa limosa	Black-tailed Godwit	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius minutus	Little Curlew	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Pluvialis fulva	Pacific Golden Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus magnificus	Wompoo Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rhipidura fuliginosa	New Zealand Fantail (Lord Howe Is. subsp.)	Extinct	Not Sensitive	Extinct	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Strepera graculina crissalis	Pied Currawong (Lord Howe Is. subsp.)	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Thalassarche cauta	Shy Albatross	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Thalassarche cauta steadi	White-capped Albatross	Not Listed	Not Sensitive	Vulnerable	
Animalia	Aves	Thalassarche chrysostoma	Grey-headed Albatross	Not Listed	Not Sensitive	Endangered	
Animalia	Aves	Thalassarche melanophris	Black-browed Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Thalasseus bergii	Crested Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Thinornis cucullatus cucullatus	Eastern Hooded Dotterel	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Tringa brevipes	Grey-tailed Tattler	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa glareola	Wood Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa incana	Wandering Tattler	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto longimembris	Eastern Grass Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Xenus cinereus	Terek Sandpiper	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Mammalia	Arctocephalus forsteri	New Zealand Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus pusillus doriferus	Australian Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus corbeni	Corben's Long-eared Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascogale tapoatafa	Brush-tailed Phascogale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Planigale maculata	Common Planigale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Potorous tridactylus	Long-nosed Potoroo	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pseudomys novaehollandiae	New Holland Mouse	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Eretmochelys imbricata	Hawksbill Turtle	Not Listed	Not Sensitive	Vulnerable	
Plantae	Flora	Angophora inopina	Charmhaven Apple	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Caladenia porphyrea		Not Listed	Category 2	Not Listed	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Commersonia prostrata	Dwarf Kerrawang	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Corybas dowlingii	Red Helmet Orchid	Endangered	Category 2	Not Listed	
Plantae	Flora	Diuris arenaria	Sand Doubletail	Endangered	Category 2	Not Listed	
Plantae	Flora	Diuris bracteata		Endangered	Category 2	Extinct	
Plantae	Flora	Diuris praecox	Rough Doubletail	Vulnerable	Category 2	Vulnerable	
Plantae	Flora	Eucalyptus camfieldii	Camfield's Stringybark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus parramattensis subsp. decadens		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Not Listed	Category 3	Extinct	
Plantae	Flora	Lindernia alsinoides	Noah's False Chickweed	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Maundia triglochinoides		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Melaleuca biconvexa	Biconvex Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Persicaria elatior	Tall Knotweed	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Senecio spathulatus	Coast Groundsel	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	

Data does not include NSW category 1 sensitive species.

NSW BioNet: © State of NSW and Office of Environment and Heritage

Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise Match	Georeferenced to the site location / premise or part of site
Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

USE OF REPORT - APPLICABLE TERMS

The following terms apply to any person (End User) who is given the Report by the person who purchased the Report from Lotsearch Pty Ltd (ABN: 89 600 168 018) (Lotsearch) or who otherwise has access to the Report (Terms). The contract terms that apply between Lotsearch and the purchaser of the Report are specified in the order form pursuant to which the Report was ordered and the terms set out below are of no effect as between Lotsearch and the purchaser of the Report.

1. End User acknowledges and agrees that:
   (a) the Report is compiled from or using content (**Third Party Content**) which is comprised of:
      (i) content provided to Lotsearch by third party content suppliers with whom Lotsearch has contractual arrangements or content which is freely available or methodologies licensed to Lotsearch by third parties with whom Lotsearch has contractual arrangements (**Third Party Content Suppliers**); and
      (ii) content which is derived from content described in paragraph (i);
   (b) Neither Lotsearch nor Third Party Content Suppliers takes any responsibility for or give any warranty in relation to the accuracy or completeness of any Third Party Content included in the Report including any contaminated land assessment or other assessment included as part of a Report;
   (c) the Third Party Content Suppliers do not constitute an exhaustive set of all repositories or sources of information available in relation to the property which is the subject of the Report (**Property**) and accordingly neither Lotsearch nor Third Party Content Suppliers gives any warranty in relation to the accuracy or completeness of the Third Party Content incorporated into the report including any contaminated land assessment or other assessment included as part of a Report;
   (d) Reports are generated at a point in time (as specified by the date/time stamp appearing on the Report) and accordingly the Report is based on the information available at that point in time and Lotsearch is not obliged to undertake any additional reporting to take into consideration any information that may become available between the point in time specified by the date/time stamp and the date on which the Report was provided by Lotsearch to the purchaser of the Report;
   (e) Reports must be used or reproduced in their entirety and End User must not reproduce or make available to other persons only parts of the Report;
   (f) Lotsearch has not undertaken any physical inspection of the property;
   (g) neither Lotsearch nor Third Party Content Suppliers warrants that all land uses or features whether past or current are identified in the Report;
   (h) the Report does not include any information relating to the actual state or condition of the Property;
   (i) the Report should not be used or taken to indicate or exclude actual fitness or unfitness of Land or Property for any particular purpose
   (j) the Report should not be relied upon for determining saleability or value or making any other decisions in relation to the Property and in particular should not be taken to be a rating or assessment of the desirability or market value of the property or its features; and
   (k) the End User should undertake its own inspections of the Land or Property to satisfy itself that there are no defects or failures
2. The End User may not make the Report or any copies or extracts of the report or any part of it available to any other person. If End User wishes to provide the Report to any other person or make extracts or copies of the Report, it must contact the purchaser of the Report before doing so to ensure the proposed use is consistent with the contract terms between Lotsearch and the purchaser.
3. Neither Lotsearch (nor any of its officers, employees or agents) nor any of its Third Party Content Suppliers will have any liability to End User or any person to whom End User provides the Report and End User must not represent that Lotsearch or any of its Third Party Content Suppliers accepts liability to any such person or make any other representation to any such person on behalf of Lotsearch or any Third Party Content Supplier.
4. The End User hereby to the maximum extent permitted by law:
   (a) acknowledges that the Lotsearch (nor any of its officers, employees or agents), nor any of its Third Party Content Supplier have any liability to it under or in connection with the

Report or these Terms;

(b) waives any right it may have to claim against Third Party Content Supplier in connection with the Report, or the negotiation of, entry into, performance of, or termination of these Terms; and

(c) releases each Third Party Content Supplier from any claim it may have otherwise had in connection with the Report, or the negotiation of, entry into, performance of, or termination of these Terms.

5. The End User acknowledges that any Third Party Supplier shall be entitled to plead the benefits conferred on it under clause 4, despite not being a party to these terms.
6. End User must not remove any copyright notices, trade marks, digital rights management information, other embedded information, disclaimers or limitations from the Report or authorise any person to do so.
7. End User acknowledges and agrees that Lotsearch and Third Party Content Suppliers retain ownership of all copyright, patent, design right (registered or unregistered), trade marks (registered or unregistered), database right or other data right, moral right or know how or any other intellectual property right in any Report or any other item, information or data included in or provided as part of a Report.
8. To the extent permitted by law and subject to paragraph 9, all implied terms, representations and warranties whether statutory or otherwise relating to the subject matter of these Terms other than as expressly set out in these Terms are excluded.
9. Subject to paragraph 6, Lotsearch excludes liability to End User for loss or damage of any kind, however caused, due to Lotsearch's negligence, breach of contract, breach of any law, in equity, under indemnities or otherwise, arising out of all acts, omissions and events whenever occurring.
10. Lotsearch acknowledges that if, under applicable State, Territory or Commonwealth law, End User is a consumer certain rights may be conferred on End User which cannot be excluded, restricted or modified. If so, and if that law applies to Lotsearch, then, Lotsearch's liability is limited to the greater of an amount equal to the cost of resupplying the Report and the maximum extent permitted under applicable laws.
11. Subject to paragraph 9, neither Lotsearch nor the End User is liable to the other for:
    (a) any indirect, incidental, consequential, special or exemplary damages arising out of or in relation to the Report or these Terms; or
    (b) any loss of profit, loss of revenue, loss of interest, loss of data, loss of goodwill or loss of business opportunities, business interruption arising directly or indirectly out of or in relation to the Report or these Terms,

    irrespective of how that liability arises including in contract or tort, liability under indemnity or for any other common law, equitable or statutory cause of action or otherwise.
12. These Terms are subject to New South Wales law.

Appendix B: Historical Titles

N

North Hangar

Admin

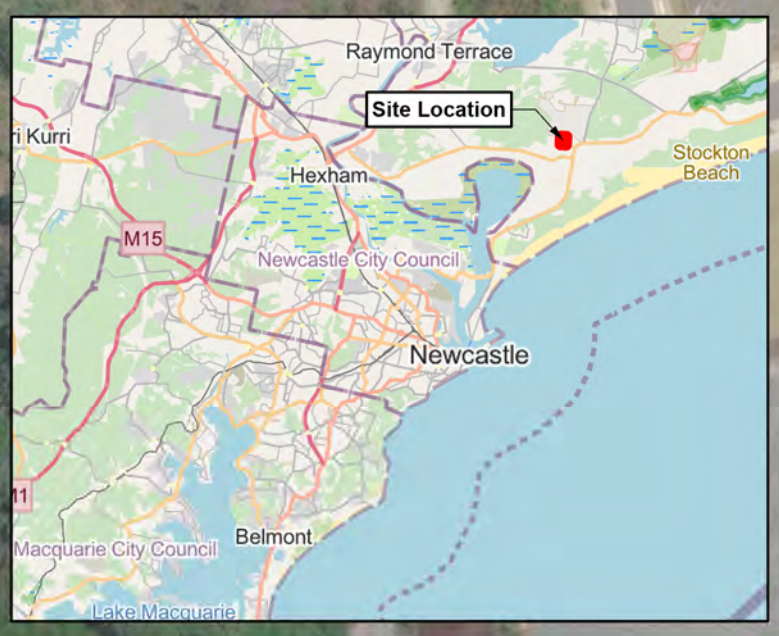
South Hangar

Warehouse

Storage

GSE Storage

Fire Tanks



Legend

- Existing Building
- Lot Boundary
- BAE Systems Australia Facility Boundary
- Site Boundary

Aerial Imagery © ESRI World Imagery

Created:	E. Marha	Date:	25/06/2024
Reviewed:	M. Ferguson	Revision:	0
Approved:		Scale:	1:1,500 (A3)
File:	S20283_013_F001 Site Location and Layout		

0 5 10 20 30 40 Metres

Coordinate System: GDA2020 MGA Zone 56

Figure No:	**1**
Title:	**Site Location and Layout PEW Facility**
Project:	Detailed Site Investigation
Location:	Williamtown Drive, Williamtown, NSW 2318
Client:	Built

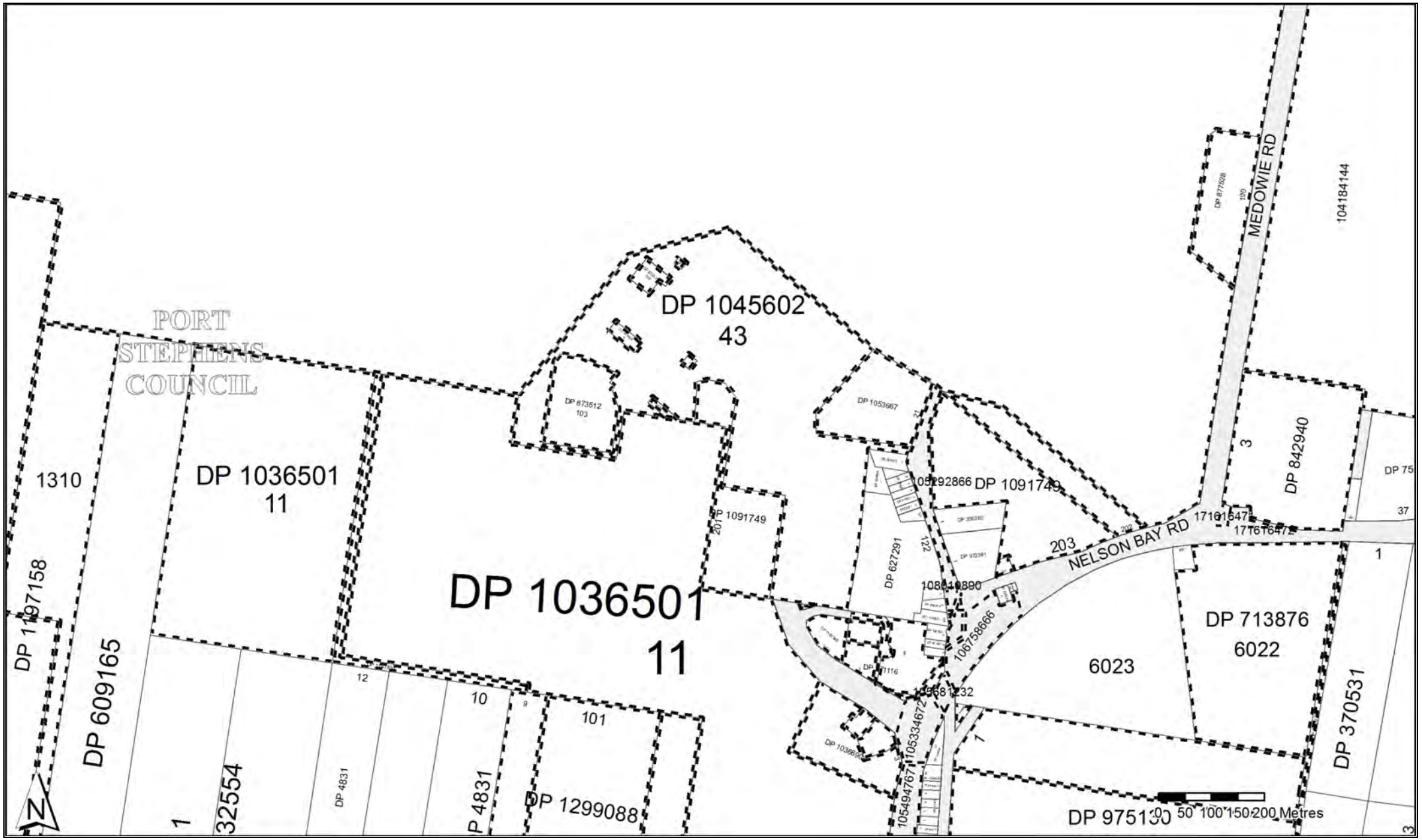
Path: S:\01_Jobs\1.NSW_Jobs\S20283_BUILT_BAESA_WILLIAMTOWN\APRX\S20283_013.aprx

© Senversa 2024

Cadastral Records Enquiry Report : Lot 43 DP 1045602

Ref : Jeffries Circuit, Williamtown

Locality : WILLIAMTOWN
Parish : STOWELL
LGA : PORT STEPHENS
County : GLOUCESTER



Copyright © Crown in right of New South Wales, 2017

This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

PLANFORM 2

Plan Drawing only to appear in this space.

*OFFICE USE ONLY

SIGNATURES AND SEALS ONLY

SIGNED FOR AND ON BEHALF OF THE COMMONWEALTH OF AUSTRALIA BY A DELEGATE OF THE MINISTER FOR ADMINISTRATIVE SERVICES

Director Property Services

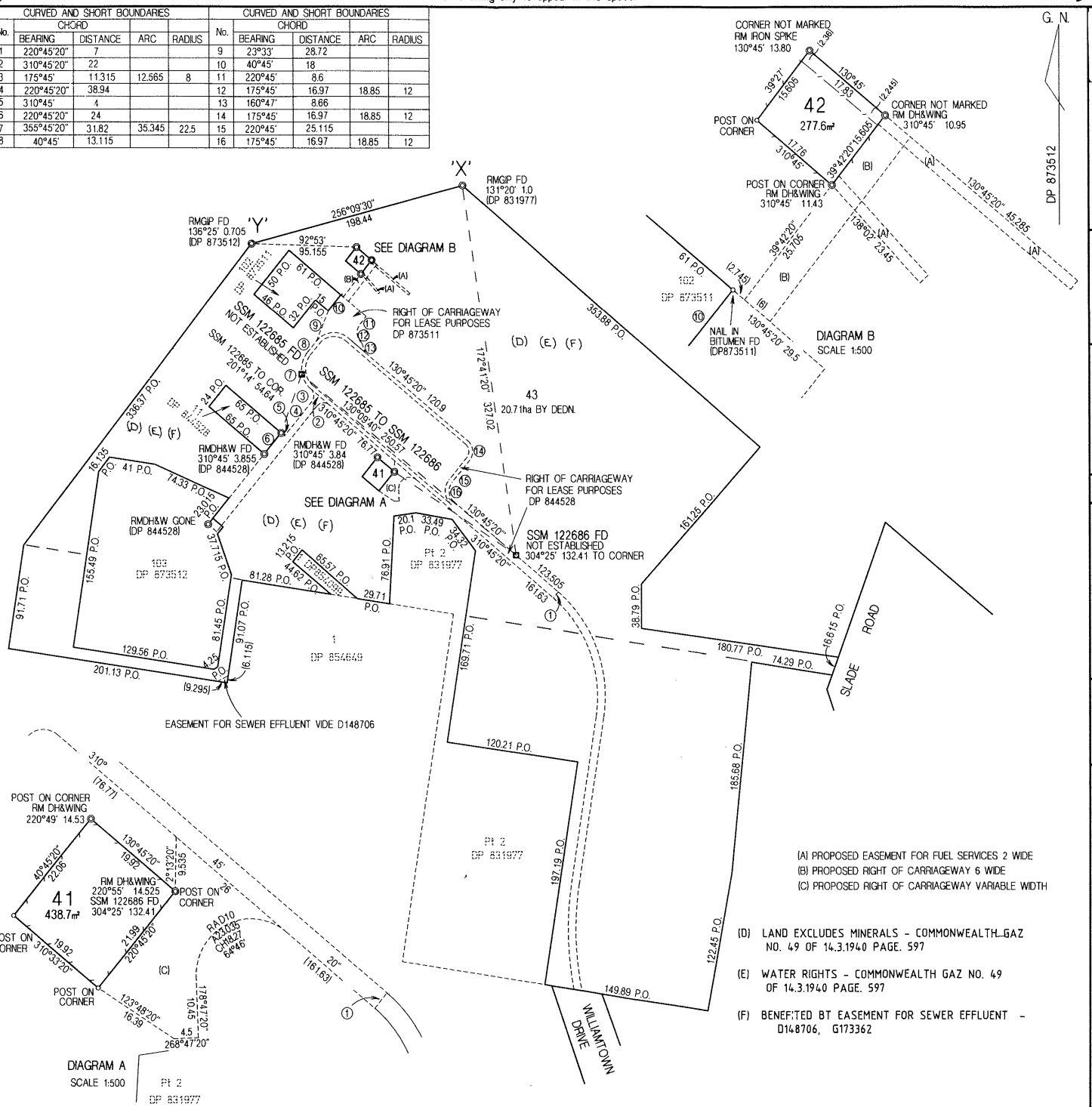
SIGNED FOR AND ON BEHALF OF PORT STEPHENS COUNCIL UNDER DELEGATED AUTHORITY:

PAUL DOUGLASS
ACTING GENERAL MANAGER
PORT STEPHENS COUNCIL

SIGNED FOR AND ON BEHALF OF NEWCASTLE CITY COUNCIL UNDER DELEGATED AUTHORITY.

JANET JORE
GENERAL MANAGER

CURVED AND SHORT BOUNDARIES					CURVED AND SHORT BOUNDARIES				
No.	CHORD BEARING	CHORD DISTANCE	ARC	RADIUS	No.	CHORD BEARING	CHORD DISTANCE	ARC	RADIUS
1	220°45'20"	7			9	23°33'	28.72		
2	310°45'20"	22			10	40°45'	18		
3	175°45'	11.315	12.565	8	11	220°45'	8.6		
4	220°45'20"	38.94			12	175°45'	16.97	18.85	12
5	310°45'	4			13	160°47'	8.66		
6	220°45'20"	24			14	175°45'	16.97	18.85	12
7	355°45'20"	31.82	35.345	22.5	15	220°45'	25.115		
8	40°45'	13.115			16	175°45'	16.97	18.85	12



Crown Lands Office Approval

LAN APPROVED —
Authorised Officer
and District
aper No
ield Book pages

Subdivision Certificate

I certify that the provisions of s.109J of the Environmental Planning nd Assessment Act 1979 have been satisfied in relation to the roposed Subdivision set out herein
* (Insert 'subdivision' or 'new road')
* Authorised Person/General Manager/Accredited Certifier
Consent Authority : Port Stephens Council
Date of endorsment : 17-9-2002
Accreditation no.
Subdivision Certificate no. : 2002-119
File No 16-2002-1017-1

Note :
When the plan is to be lodged electronically in the Land Titles Office should include a signature in an electronic or digital format approved by the Registrar-General

Delete if inapplicable

DP1045602

Registered: 20/11/2003

Title System: TORRENS

Purpose: LEASE

Ref. Map: PORT STEPHENS SH A #

Last Plan: DP 873512

PLAN OF LOT 104 IN DP 873512 AND PROPOSED RIGHT OF CARRIAGEWAY FOR LEASE PURPOSES

Lengths are in metres. Reduction Ratio 1: 2500

L.G.A PORT STEPHENS

Suburb/Locality: WILLIAMTOWN

Parish: STOWELL

County: GLOUCESTER

This is sheet 1 of my plan in sheets (Delete if inapplicable)

Surveyors (Practice) Regulation 2001

I, DAVID JOHN ENGLAND

of PULVER COOPER & BLACKLEY, NEWCASTLE

a surveyor registered under the Surveyors Act 1929, hereby certify that the survey represented in this plan is accurate and has been made in accordance with the Surveyors (Practice) Regulation 2001 and was completed on 4th SEPTEMBER 2002

The survey relates to LOTS 41 AND 42 LOT 43 COMPILED RESIDUE
(here specify the land actually surveyed, or specify any land shown in the plan that is not the subject of the survey)

Datum Line: X-Y

Zone: Suburban/Country — Surveyor registered under the Surveyors Act 1929 — Dated: 12.9.02

Plans used in preparation of survey/compilation.

DP 873512
DP 873511
DP 844528

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

InfoTrack
Req:R680294 /Doc:DP 1045602 P /Rev:25-Nov-2003 /NSW LRS /Pgs:ALL /Prt:03-Jul-2024 17:42 /Seq:1 of 1
Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

© SURVEYOR'S REFERENCE: 02/103 - "Exemption No. 02/104 - CLAUSE 30(2)"

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

DRAWING: F:\02_103\DWGDPLEA

PLAN FORM 2

Plan Drawing only to appear in this space

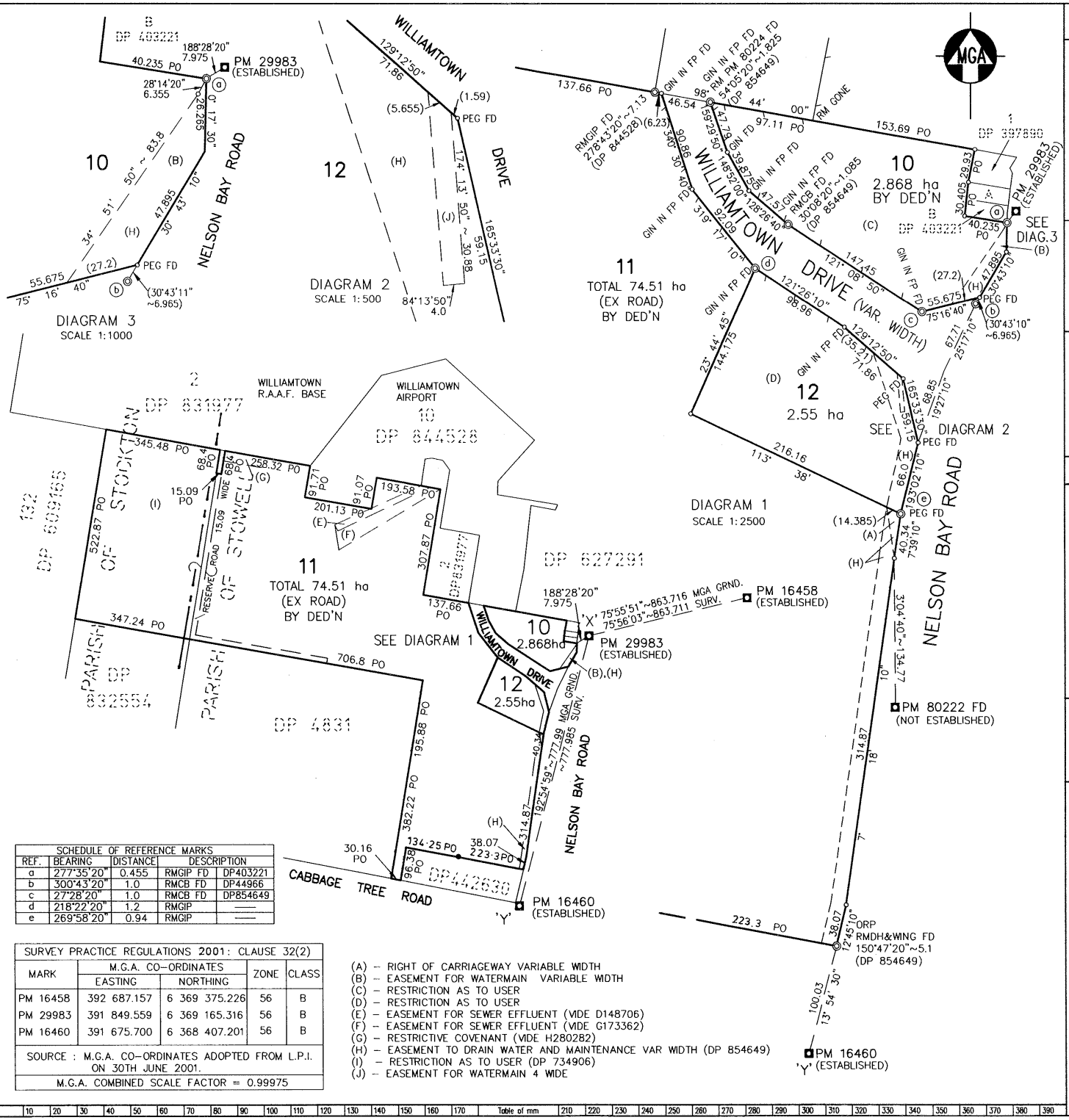
SIGNATURES, SEALS AND STATEMENTS of intention to dedicate public roads or to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

Executed by B & M ELLISON PTY. LIMITED ACN 001 305 148 in accordance with its Constitution in the presence of:

B & M ELLISON PTY. LIMITED A.C.N. 001 305 148 The Common Seal of

E Ellison

B. Ellison



SCHEDULE OF REFERENCE MARKS				
REF.	BEARING	DISTANCE	DESCRIPTION	
a	277°35'20"	0.455	RMGIP FD	DP403221
b	300°43'20"	1.0	RMCB FD	DP44966
c	27°28'20"	1.0	RMCB FD	DP854649
d	218°22'20"	1.2	RMGIP	——
e	269°58'20"	0.94	RMGIP	——

SURVEY PRACTICE REGULATIONS 2001: CLAUSE 32(2)				
MARK	M.G.A. CO-ORDINATES		ZONE	CLASS
	EASTING	NORTHING		
PM 16458	392 687.157	6 369 375.226	56	B
PM 29983	391 849.559	6 369 165.316	56	B
PM 16460	391 675.700	6 368 407.201	56	B
SOURCE : M.G.A. CO-ORDINATES ADOPTED FROM L.P.I. ON 30TH JUNE 2001.				
M.G.A. COMBINED SCALE FACTOR = 0.99975				

(A) – RIGHT OF CARRIAGEWAY VARIABLE WIDTH
(B) – EASEMENT FOR WATERMAIN VARIABLE WIDTH
(C) – RESTRICTION AS TO USER
(D) – RESTRICTION AS TO USER
(E) – EASEMENT FOR SEWER EFFLUENT (VIDE D148706)
(F) – EASEMENT FOR SEWER EFFLUENT (VIDE G173362)
(G) – RESTRICTIVE COVENANT (VIDE H280282)
(H) – EASEMENT TO DRAIN WATER AND MAINTENANCE VAR WIDTH (DP 854649)
(I) – RESTRICTION AS TO USER (DP 734906)
(J) – EASEMENT FOR WATERMAIN 4 WIDE

Crown Lands Office Approval

PLAN APPROVED .....
Authorised Officer
Land District .....
Paper No. .....
Field Book ..... pages .....

Subdivision Certificate

I certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed

subdivision ..... set out herein
(Insert "subdivision" or "new road")

..... *Authorised Person/~~General Manager~~/~~Accredited Certifier~~*

Consent Authority : Port Stephens Council

Date of Endorsement : 26/11/2001

Accreditation No. : .....

Subdivision Certificate No. 2001/150

File No. : 16-2000-391-1

Note :
When the plan is to be lodged electronically in the Land Titles Office it should include a signature in an electronic or digital format approved by the Registrar-General.

Delete whichever is inapplicable

DP1036501

Registered 16-1-2002 *

C.A: SEE CERTIFICATE

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: 0726S-9 * PARISH * PORT STEPHENS SH. A

Last Plan: DP 854649

PLAN OF SUBDIVISION OF LOT 1 DP 854649

Lengths are in metres. Reduction Ratio 1 :8000

L.G.A.: PORT STEPHENS

Suburb/Locality: WILLIAMTOWN (39)

Parish: STOCKTON/STOWELL

County: GLOUCESTER

This is sheet 1 of my plan in ..... sheets
(Delete if inapplicable)

Survey Certificate

Surveyors (Practice) Regulation 1996

I, MICHAEL GORDON COOKSON

of HARPER SOMERS PTY. LTD.
241 DENISON STREET, BROADMEADOW

a surveyor registered under the Surveyors Act, 1929 hereby certify that the survey represented in this plan is accurate and has been made in accordance with the Survey (Practice) Regulation, 2001 and was completed on 31-10-01

The survey relates to LOT 12 & PARTIAL SURVEY LOT 10

(here specify the land actually surveyed, or specify any land shown in the plan that is not the subject of this survey)

Datum Line: 'X'~'Y'

Zone: ~~Suburban~~/~~Country~~

Signature .....

Surveyor registered under the Surveyors Act 1929

Plans used in preparation of survey/~~compilation~~.
DP 854649
DP 403221
DP 397890

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919, AS AMENDED IT IS INTENDED TO CREATE:-

1. RIGHT OF CARRIAGEWAY VARIABLE WIDTH
2. EASEMENT FOR WATERMAIN VARIABLE WIDTH
3. RESTRICTION AS TO USER
4. RESTRICTION AS TO USER
5. EASEMENT FOR WATERMAIN 4 WIDE

SURVEYOR'S REFERENCE : 16770 (CHECKLIST)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Filename : 16770DP.DWG (09/11/2001)

InfoTrack
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown /Req:R680291 /Doc:DP 1036501 P /Rev:17-Jan-2002 /NSW LRS /Pgs:ALL /Prt:03-Jul-2024 17:42 /Seq:1 of 1

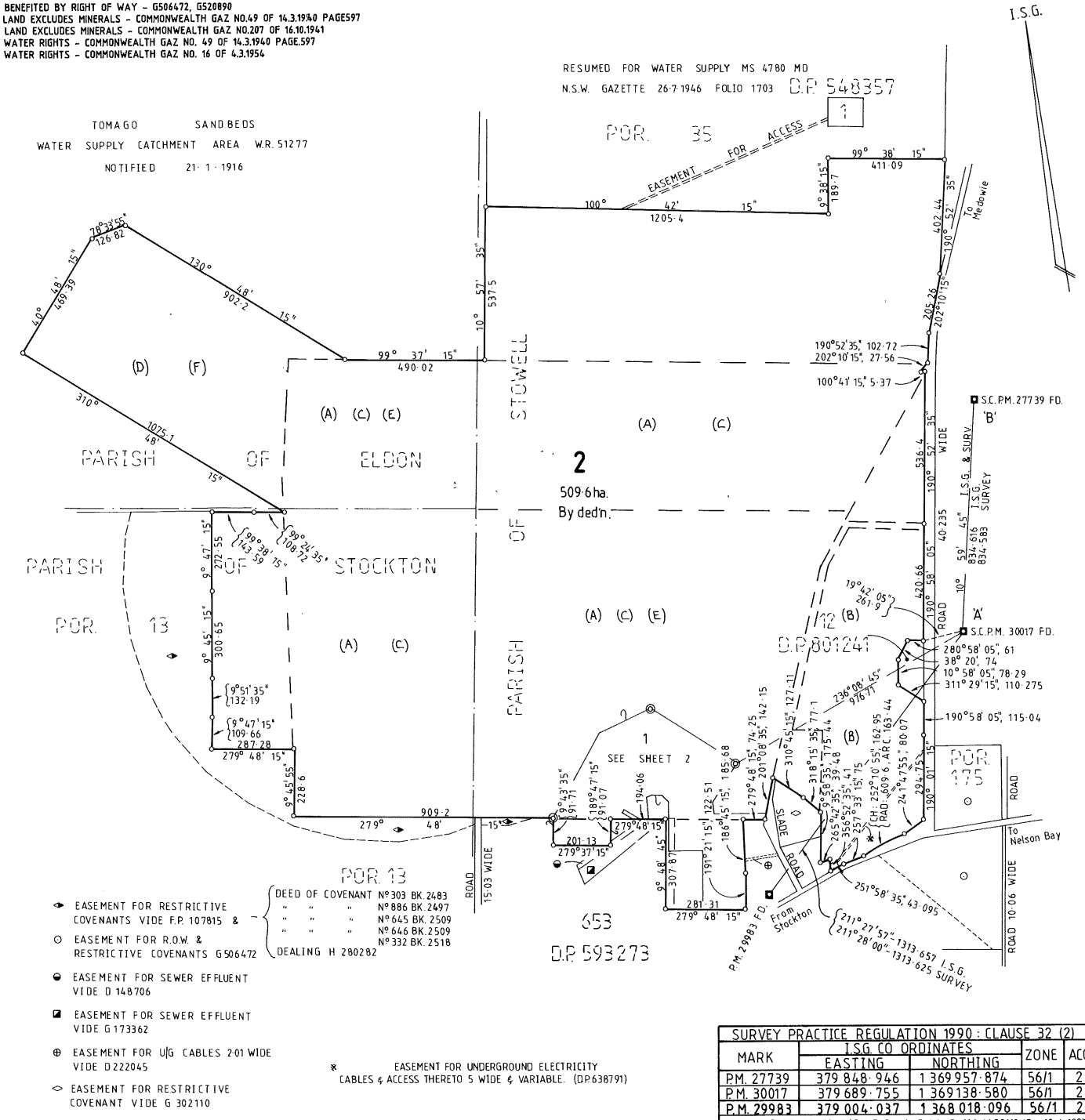
PLAN FORM 2

Plan Drawing only to appear in this space

*OFFICE USE ONLY

SIGNATURE AND SEALS ONLY.

(A) BENEFITED BY EASEMENT FOR SEWER EFFLUENT - D148706, G173362
(B) BENEFITED BY RIGHT OF WAY - G506472, G520890
(C) LAND EXCLUDES MINERALS - COMMONWEALTH GAZ NO.49 OF 14.3.1940 PAGE597
(D) LAND EXCLUDES MINERALS - COMMONWEALTH GAZ NO.207 OF 16.10.1941
(E) WATER RIGHTS - COMMONWEALTH GAZ NO. 49 OF 14.3.1940 PAGE.597
(F) WATER RIGHTS - COMMONWEALTH GAZ NO. 16 OF 4.3.1954



- EASEMENT FOR RESTRICTIVE COVENANTS VIDE F.P. 107815 & DEED OF COVENANT Nº303 BK.2483, Nº886 BK.2497, Nº645 BK.2509, Nº646 BK.2509, Nº332 BK.2518, DEALING H 280282
- EASEMENT FOR R.O.W. & RESTRICTIVE COVENANTS G506472
- EASEMENT FOR SEWER EFFLUENT VIDE D 148706
- EASEMENT FOR SEWER EFFLUENT VIDE G 173362
- EASEMENT FOR U/G CABLES 2·01 WIDE VIDE D 222045
- EASEMENT FOR RESTRICTIVE COVENANT VIDE G 302110
- ※ EASEMENT FOR UNDERGROUND ELECTRICITY CABLES & ACCESS THERETO 5 WIDE & VARIABLE. (DP.638791)

SURVEY PRACTICE REGULATION 1990 : CLAUSE 32 (2)				
MARK	I.S.G. CO ORDINATES EASTING	NORTHING	ZONE	ACC.
P.M. 27739	379 848·946	1 369 957·874	56/1	2
P.M. 30017	379 689·755	1 369 138·580	56/1	2
P.M. 29983	379 004·037	1 368 018·096	56/1	2

SOURCE: DEPT. OF CONSERVATION AND LAND MANAGEMENT 15·4·1993

DP 831977 (E)

Registered: 27·8·1993

C.A:

Title System: TORRENS

Purpose: LEASE -(NOT A CURRENT PLAN AT REGN - SEE S. 327AA LG ACT)

Ref. Map: PORT STEPHENS SH A# PARISHES#

Last Plan: DP 577531

PLAN OF PART OF LOT 1 IN D.P. 577531 FOR LEASE PURPOSES

Lengths are in metres. Reduction Ratio 1:10000

93/0031

Mun./Shire City: PORT STEPHENS

Locality: WILLIAMTOWN (17)

Parish: ELDON, STOCKTON & STOWELL (39) (40)

County: GLOUCESTER

This is sheet 1 of my plan in 2 sheets. (Delete if inapplicable).

I, Michael Anthony Taylor
of Asquith & deWitt PLIA(CN 001 431 072)
P.O. Box 179, Charlestown 2290
a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan with respect to lot 1
is accurate and has been made in accordance with the Survey Practice Regulation 1990 and any special requirements of the Department of Lands, and was completed on
4-5-93
Signature Michael Taylor.
Surveyor registered under Surveyors Act, 1929, as amended.
Datum Line of Azimuth. 'A'-'B'
#Insert date of survey.

Plans used in preparation of survey/compilation.
D.P 577531 D.P 627291
D.P 430095

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

IT IS INTENDED TO LEASE LOT 1 TO NEWCASTLE CITY COUNCIL & PORT STEPHENS SHIRE COUNCIL.

PLAN AMENDED IN LPI - DESIGNATIONS ADDED 25-11-2003

Crown Lands Office Approval

PLAN APPROVED ..... Authorised Officer
Land District .....
Paper No. .....
Field Book ..... pages .....

Council Clerk's Certificate

I hereby certify that —
(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and
*(b) the requirements of section 34B of the † Metropolitan Water, Sewerage and Drainage Act, 1924, as amended. † Hunter District Water, Sewerage, and Drainage Act, 1938, as amended
have been complied with by the applicant in relation to the proposed ..... (insert "new road", "subdivision" or "consolidated lot") set out herein
Subdivision No. .....
Date .....
(Signature) ..... Council Clerk
Council File No. .....
*This part of certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan Water, Sewerage and Drainage Board and the Hunter District Water Board.
† Delete if inapplicable.

SURVEYOR'S REFERENCE: 10881

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

AUSLIG PLAN Nº 26178 N.S.W.

InfoTrack
Req:R681032 /Doc:DP 0831977 P /Rev:27-Nov-2003 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 06:44 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

9232-2N

PLAN FORM 3 | To be used in conjunction with Plan Form 2 | WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION | *OFFICE USE ONLY

DP 831977

Registered: 23·8·1993

This is sheet 2 of my plan in 2 sheets dated

Michael Taylor
Surveyor registered under Surveyors Act 1929

This is sheet 2 of the plan of sheets covered by my Certificate No. of

Council Clerk

For use where space is insufficient in any panel on Plan Form 2.

2

(A) BENEFITED BY EASEMENT FOR SEWER EFFLUENT - D148706, G173362

(C) LAND EXCLUDES MINERALS - COMMONWEALTH GAZ NO.49 OF 14.3.1940 PAGE. 597

(E) WATER RIGHTS - COMMONWEALTH GAZ NO. 49 OF 14.3.1940 PAGE. 597

I.S.G.

1
23·27ha

(712m²)

653
D.P 593273

(3·285ha)

122
DP 627291

SLADE

ROAD

Nelson Bay Road (MAIN ROAD 108)
FROM STOCKTON
TO NELSON BAY

- EASEMENT FOR SEWER EFFLUENT VIDE D 148706
- EASEMENT FOR SEWER EFFLUENT VIDE G 173362
- EASEMENT FOR UNDERGROUND CABLES 2·01 WIDE VIDE D222045.
- EASEMENT FOR UNDERGROUND ELECTRICITY CABLES & ACCESS THERETO 5 WIDE & VARIABLE.(DP638791)

PLAN AMENDED IN LPI - DESIGNATIONS ADDED
25-11-2003

Reduction Ratio 1: 2500

Plan Drawing only to appear in this space

SURVEYOR'S REFERENCE: 10881

AUSLIG PLAN No 26179 N.S.W.

Req:R681032 /Doc:DP 0831977 P /Rev:27-Nov-2003 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 06:44 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

Plan Form No 6A (for transfers, leases, etc.)

PR 40/402.

Municipality of
Shire of Port Stephens

PLAN

of part of Portions 11 and 102 of Parish

PARISH OF STOWELL COUNTY OF GLOUCESTER

Scale 3 Chains to an Inch

NOTATION PLAN

4 ac. 2 r. 7 p. Acquired for Defence Purposes at Williamtown Comm. Gaz. 8·4·54.

Por 25 (Ph)
Acquired by The Commonwealth
vide Gazette No 49
dated 14th March '40

ROAD 100 WIDE

PARISH OF STOCKTON

ROAD 75 WIDE

A

B

270° 00′ 1284·10

90° 00′ 1000·3

359° 55′ 10″ 455·9

269° 49′ 999·8

179° 59′ 452·7

Por 11 (Ph)

4A. 2R. 7P.

Fence

Ref Mark G.I.P. 134° 52′ 00″ 11·30.

Ref Mark G.I.P. 134° 54′ 00″ 11·30

(1¼ P.)

(30·40)

(46·20)

270° 00′ 638·7

270° 00′ 323·04

Fce

200·0

270° 00′ 1534·8

New P & W Fence

O.R.P.

(2·0)

270° 00′ 2·89

20′

31′

236′

Vide Gazette No 139 dated 14th May 1942

FOR SEWER EFFLUENT

Acquired by The Commonwealth

SITE OF PROPOSED EASEMENT

Portion

Boundary

Por 102 (Ph)

Por 11 (Ph)
Acquired by The Commonwealth
Vide Gazette No 156
dated 7th August '41

Approved by Council and covered by Council Clerks Certificate

No. ..... of .....

Charted on Head Office Maps Council Clerk

Examined 9.6.1954.

Subscribed and declared before me at Newcastle this 8th day of Dec. A.D. 1949

Justice of Peace

I Henry Thomas Vallender of The Dept of The Interior a Surveyor registered under the Surveyor's Act, 1929, do hereby solemnly and sincerely declare (a) that all boundaries and measurements shown on this plan are correct, (b) that all survey marks found and relevant physical objects on or adjacent to the boundaries are correctly represented, (c) that all physical objects indicated actually exist in the positions shown, (d) that the whole of the material facts in relation to the land are correctly represented, (e) that the survey represented in this plan has been made in accordance with the Survey Practice Regulations, 1933 *(1) ~~by me~~ (2) under my supervision, the character and extent of which was as required by the Survey Practice Regulations, 1933, and was completed on † 19th Sept. 1949 and the reference marks have been placed as shown hereon.

And I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the Oaths Act, 1900.

(Signature) .....

Surveyor registered under the Surveyors Act, 1929

PLAN MICROFILMED
NO ADDITIONS OR AMENDMENTS TO BE MADE

5829·3070

Ms. 5829 Md. R

Datum Line of Azimuth A (B

F.18

DEPT. OF THE INTERIOR
NEG. No. 4299 N.S.W.

Req:R680343 /Doc:CP 05829-3070 P /Rev:01-Dec-2012 /NSW LRS /Prt:03-Jul-2024 17:58 /Seq:1 of 1
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit, Williamtown

EXPENDITURE UNDER TREASURY REGULATION 52 MADE UNDER SECTION 71 OF THE AUDIT ACT 1901-1953.

PRIME MINISTER'S DEPARTMENT.

AUDITOR-GENERAL'S OFFICE.

£940 5s. 11d.—General-Motors Holden's Ltd., Melbourne—Supply of one Holden sedan car for use by the Auditor-General's Staff, Port Moresby.—(Ex. Min. No. 1.)

DEPARTMENT OF TERRITORIES.

£7,200.—Larke Hoskins & Co., Sydney—Purchase of Austin trucks.—(Ex. Min. No. 46.)

£4,490.—Stack & Co. Pty. Ltd., Sydney—Purchase of Chevrolet sedan motor cars.—(Ex. Min. No. 46.)

£19,516 9s. 9d.—International Harvester Co., South Melbourne—Purchase of twelve utilities and three trucks.—(Ex. Min. No. 46.)

£5,500.—Champions Ltd., Adelaide—Purchase of five Land Rover utilities.—(Ex. Min. No. 46.)

£1,305.—William Cooper & Nephews (Aust.) Pty. Ltd., Sydney—Purchase of Deetick.—(Ex. Min. No. 67.)

DEPARTMENT OF THE INTERIOR.

£258 9s. 10d.—J. F. Watts Pty. Limited, Helen-street, Sefton, New South Wales—Purchase of spare parts for mechanical hedge cutting machine, for Parks and Gardens Section.

£211 5s.—Fire extinguishers Pty. Limited, 43 Margaret-street, Sydney, New South Wales—Purchase of twenty-six (26) reversible type fire extinguishers for the Parks and Gardens Section.

£376.—The Bonser Engineering Company, 352 Merrylands-road, Merrylands, New South Wales—Purchase of 1,000 fire bar grates for Canberra Brickworks.

£225.—Middows Bros. Sons and Company Limited, 25 Clarence-street, Sydney, New South Wales—Purchase of one (1) 30-in. x 40-in. contact printer of all metal construction &c., for the National Mapping Section.

£900.—F. W. Barrett and Company Pty. Limited, Box 4045, G.P.O., Sydney, New South Wales—Supply of eight (8) truck-loads "Muswellbrook" small coal for Canberra Brickworks.

£500.—Taylor's Pty. Limited, 17A Bridge-street, New South Wales—Purchase of twenty (20) 100-foot lengths 2½-in. camel 18-strand unlined hose for Canberra Fire Brigade.—(Ex. Min. No. 233.)

£210 7s. 6d.—K. L. Distributors Pty. Limited, 59 York street, Sydney, New South Wales—Supply of three (3) Cascade portable self-priming centrifugal pumps, for the Bush Fire Council.

£413 3s. 4d.—Hastings Deering Services Limited, William-street, Sydney, New South Wales—Overhaul of A.E.C. omnibus engine No. A173.10515, for the Transport Section.

£658 2s. 6d.—Wilkie's Tyre Service Company, 171 Monaro-street, Queanbeyan, New South Wales—Re-capping of sixty-two (62) tyres for the Transport Section.

£627 9s. 1d.—Cleveland Machinery Company Pty. Ltd., 77 Cleveland-street, Redfern, New South Wales—Purchase of one (1) 6⅜-in. Fortis precision toolroom lathe for the Commonwealth Observatory. [Amends Ex. Min. No. 15/280 of 17th April, 1952—£627.]

£498 4s.—Messrs. Rauchfuss Import Agency, 4 Eley-road, Box Hill, Victoria—Purchase of sawing and filing machine for the Commonwealth Observatory. [Amends Ex. Min. No. 15/336 of 17th April, 1952—£477 4s.]—(Ex. Min. No. 233.)

DEPARTMENT OF HEALTH.

£307.—Stanford X-Ray Co. Pty. Ltd., 71 Collins-street, Melbourne—Adaptation of Stanford X-ray tank head and controls to Schonander mirror camera apparatus for X-ray and radium laboratories.—(Ex. Min. No. 30.)

£412.—Stanford X-Ray Co. Pty. Ltd., 71 Collins-street, Melbourne—Adaptation of Stanford X-ray tank head and controls to Schonander mirror camera apparatus and tube stand for X-ray and radium laboratories.—(Ex. Min. No. 30.)

£950.—Amplion (Aust.) Pty. Ltd., 36 Parramatta-road, Camperdown—Microphones for Commonwealth Acoustic Laboratories.—(Ex. Min. No. 30.)

£1,934.—Containers Ltd., 265 Franklin-street, Melbourne—Caps, aluminium for Commonwealth Serum Laboratories.—(Ex. Min. No. 30.)

£297.—Eric Worrell, Ocean Beach Aquarium, Umina, via Woy Woy, New South Wales—Tiger snake venom for Commonwealth Serum Laboratories.—(Ex. Min. No. 30.)

£1,230.—Advertiser Printing Office, Adelaide—Reprint of folders for Plant Quarantine Service.—(Ex. Min. No. 30.)

DEPARTMENT OF CIVIL AVIATION.

£1,320 16s. 6d.—Chrysler Australia Ltd., Keswick, South Australia—Purchase of one (1) only Dodge 1-08 Suburban model station wagon.—(Ex. Min. No. 18.)

£31,970 13s. 4d.—(Subject to price variation) State Distributors of General-Motors Holden's Ltd.—40 Holden utility trucks.—(Ex. Min. No. 19.)

DEPARTMENT OF TRADE AND CUSTOMS.

£584 4s. 8d.—C.L.A.E. Engine Pty. Ltd., Sydney, New South Wales—Supply and fitting of new parts, reassembling the engine, final acceptance trials in launch, repairs to starter and generator and new parts for 6 fuel injectors for No. 4 Customs launch for the Collector of Customs, New South Wales.—(Ex. Min. No. 23.)

£1,712.—Hobsons Bay Dock and Engineering Co. Pty. Ltd., Melbourne—Annual overhaul and repairs to motor launch M.B. Synan for Collector of Customs, Victoria.—(Ex. Min. No. 24.)

ROBERT G. MENZIES, Prime Minister.

COMMONWEALTH OF AUSTRALIA.

The *Lands Acquisition Act* 1906-1936.

NOTIFICATION OF THE ACQUISITION OF LAND AND EASEMENT BY THE COMMONWEALTH.

IT is hereby notified and declared by His Excellency the Governor-General acting with the advice of the Federal Executive Council, that the land firstly hereunder described together with the right for the Commonwealth of Australia its successors and assigns and the owners and occupiers for the time being of the Commonwealth property acquired by notification in the *Commonwealth of Australia Gazette*, No. 49, dated 14th March, 1940, and as appurtenant thereto to conduct the effluent from the sewerage treatment works on the Commonwealth property aforesaid by means of open or covered drains or line or lines of pipes through over and along the land secondly hereunder described together with the right at all times to enter in or upon the said land by its workmen servants and others for the purpose of excavating constructing laying amending or repairing such open or covered drains or line or lines of pipes has been acquired by the Commonwealth under the *Lands Acquisition Act* 1906-1936, for the following public purpose, namely:—Defence purposes at Williamtown, New South Wales.—(P.A.59).—(Ex. Min. No. 219.)

Dated this 26th day of March, One thousand nine hundred and fifty-four.

W. J. SLIM
Governor-General.

By His Excellency's Command,
W. S. KENT HUGHES
Minister of State for the Interior.

DESCRIPTION OF LAND REFERRED TO.

Firstly.—All that piece of land containing an area of 4 acres 2 roods 7 perches more or less being part of Portions 11 and 102 of the Parish of Stowell County of Gloucester State of New South Wales as delineated on plan catalogued in the Department of the Interior New South Wales Negative No. 4299 N.S.W.; commencing on the southern boundary of Commonwealth property acquired by notification in the *Commonwealth of Australia Gazette* No. 49 dated 14th March, 1940 at a point bearing 270 degrees 2699.43 links from the southeastern corner of that Commonwealth property and bounded thence on the east the south and the west by lines bearing respectively 179 degrees 59 minutes 452.7 links 269 degrees 49 minutes 999.8 links and 359 degrees 55 minutes 10 seconds 455.9 links thence on the north by part of the southern boundary of the Commonwealth property aforesaid bearing 90 degrees 1000.3 links to the point of commencement.

Secondly.—All that piece of land containing an area of 2 acres 3 roods 14¼ perches more or less being part of Portions 11 and 102 of the Parish of Stowell County of Gloucester State of New South Wales as delineated on plan catalogued in the Department of the Interior New South Wales Negative No. 3965 N.S.W.; commencing on the southern boundary of Commonwealth property acquired by notification in the *Commonwealth of Australia Gazette* No. 49 dated 14th March 1940 at a point bearing 90 degrees 819.98 links from the northeastern corner of the land firstly herein described and bounded thence on the north by part of the southern boundary of Commonwealth property acquired by notification in the

National Library of Australia http://nla.gov.au/nla.news-page25093213

Commonwealth of Australia Gazette **No. 49 dated 14th March 1940 bearing 90 degrees 141,76 links thence on the southeast and the southwest by lines bearing respectively 230 degrees 59 minutes 20 seconds 1796.05 links and 339 degrees 10 minutes 360.1 links thence on the northeast and the northwest by the southwestern boundary and the south-eastern boundary of the Commonwealth easement for sewer effluent acquired by notification in the *Commonwealth of Australia Gazette* No. 139 dated 14th May 1942 bearing respectively 146 degrees 31 minutes 20 seconds 100 links and 56 degrees 31 minutes 20 seconds 1590.61 links to the point of commencement.**

COMMONWEALTH OF AUSTRALIA.

The *Lands Acquisition Act* 1906-1936.

NOTIFICATION OF THE ACQUISITION OF LAND BY THE COMMONWEALTH.

IT is hereby notified and declared by His Excellency the Governor-General acting with the advice of the Federal Executive Council, that the land hereunder described has been acquired by the Commonwealth under the *Lands Acquisition Act* 1906-1936, for the following public purpose, namely: Postal purposes at Coonamble, New South Wales.—(P.A.2275.)—(Ex. Min. No. 264.)

Dated this 26th day of March, One thousand nine hundred and fifty-four.

W. J. SLIM
Governor-General.

By His Excellency's Command,
W. S. KENT HUGHES
Minister of State for the Interior.

DESCRIPTION OF LAND REFERRED TO.

All that piece of land containing an area of 1 perch more or less being part of Allotment 4 Section 18A of the Town of Coonamble Parish of Moorambilla County of Leichhardt State of New South Wales as delineated on plan catalogued in the Department of the Interior New South Wales Negative No. 5587 N.S.W.; commencing on an eastern boundary of Commonwealth property being Allotment 1 Section 18A of the Town of Coonamble at a point bearing 359 degrees 9 minutes 21 feet 11¾ inches from the eastern-most corner of that Commonwealth property and bounded thence on the west by part of the eastern boundary of the Commonwealth property aforesaid bearing 359 degrees 9 minutes 48 feet 7½ inches thence on the north the east and the southeast by lines bearing respectively 89 degrees 9 minutes 7 feet 179 degrees 9 minutes 46 feet 10¼ inches and 254 degrees 57 minutes 7 feet 2½ inches to the point of commencement.

COMMONWEALTH OF AUSTRALIA.

The *Lands Acquisition Act* 1906-1936.

NOTIFICATION OF THE ACQUISITION OF LAND BY THE COMMONWEALTH.

IT is hereby notified and declared by His Excellency the Governor-General acting with the advice of the Federal Executive Council, that the land hereunder described has been acquired by the Commonwealth under the *Lands Acquisition Act* 1906-1936, for the following public purpose, namely: Purposes of the Department of Civil Aviation at Derby, Western Australia.—(P.S.724.)—(Ex. Min. No. 257.)

Dated this 26th day of March, One thousand nine hundred and fifty-four.

W. J. SLIM
Governor-General.

By His Excellency's Command,
W. S. KENT HUGHES
Minister of State for the Interior.

DESCRIPTION OF LAND REFERRED TO.

All that piece of land containing an area of 12 acres and 19 perches more or less being Knowsley Agricultural Area Lot 144 State of Western Australia: Commencing at a point on the south-eastern boundary of Knowsley Agricultural Area Lot 143, 722.3 links north-easterly along the said boundary from the westernmost corner of Knowsley Agricultural Area Lot 2, and bounded thence by part of the said south-eastern boundary of Lot 143 north-easterly 1449 links thence by boundaries of aforesaid Lot 2 south-easterly at an internal angle of 93 degrees 33 minutes 15 seconds 837.2 links, easterly at an external angle of 159 degrees 11 minutes 35 seconds 107.7 links, southerly at an internal angle of 90 degrees 13 minutes 30 seconds 758.7 links, westerly at an internal angle of 89 degrees 37 minutes 50 seconds 106.6 links and again westerly at an external angle of 169 degrees 3 minutes 1409.5 links to the point of commencement.

COMMONWEALTH OF AUSTRALIA.

The *Lands Acquisition Act* 1906-1936.

NOTIFICATION OF THE ACQUISITION OF LAND BY THE COMMONWEALTH.

IT is hereby notified and declared by His Excellency the Governor-General acting with the advice of the Federal Executive Council, that the land hereunder described has been acquired by the Commonwealth under the *Lands Acquisition Act* 1906-1936, for the following public purpose, namely: Postal purposes at Riverside, Tasmania.—(51/1170)—(Ex. Min. No. 232.)

Dated this 26th day of March, One thousand nine hundred and fifty-four.

W. J. SLIM
Governor-General.

By His Excellency's Command,
W. S. KENT HUGHES
Minister of State for the Interior.

DESCRIPTION OF LAND REFERRED TO.

All that piece of land containing an area of 1 rood 25.1 perches more or less being part of 500 acres Samuel Bruce Freeland owner originally located to W. A. Brodribb Town of Riverside Parish of Stanley County of Devon State of Tasmania: Commencing at a point which bears 320 degrees 42 minutes 93 feet 1¾ inches from the northernmost corner of 14 acres 2 roods 18.7 perches and 8.6 perches acquired by the Hydro Electric Commission and bounded thence by lines bearing 223 degrees 34 minutes 173 feet 8¾ inches and 313 degrees 34 minutes 100 feet thence by part of a southeastern side of land reserved for future road bearing 43 degrees 34 minutes 152 feet 3 inches thence by chords of a circle of radius 30 feet the centre of which lies to the southeast which bear 55 degrees 42 minutes 30 seconds 12 feet 7½ inches 79 degrees 59 minutes 30 seconds 12 feet 7½ inches 104 degrees 16 minutes 30 seconds 12 feet 7½ inches and 128 degrees 33 minutes 30 seconds 12 feet 7½ inches thence by part of a southwestern side of land for widening of West Tamar Road bearing 140 degrees 42 minutes 66 feet 9½ inches to the point of commencement.

TENDERS.

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION.

TENDERS ACCEPTED.

Nature and Location of Contract.	Amount.	Firm.	Date of Acceptance.	Date of Completion.
	£ s. d.			
Katherine (N.T.).—Portable platform scale for the Katherine Research Station	236 17 6	W. & T. Avery (Aust.) Pty. Ltd., 255 William-street, Melbourne, C.1	24.3.54	*

* March, 1954.

National Library of Australia http://nla.gov.au/nla.news-page25093214

Req:R680961 /Doc:CT 12865-116 CT /Rev:03-Feb-2011 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:28 /Seq:1 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

CERTIFICATE OF TITLE

NEW SOUTH WALES — REAL PROPERTY ACT, 1900

12865-116

Appln. Nos.37405 and 39164 (parts)

Vol. 12865 Fol. 116

Prior Titles Vol. 7198 Fol. 4
Vol.12658 Fol.190

EDITION ISSUED

3 9 1975

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

CANCELLED

SEE AUTO FOLIO

Vol. 12865 Fol. 116 (Page 1)

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 577531 at Williamtown in the Shire of Port Stephens Parishes of Eldon, Stockton and Stowell and County of Gloucester being land granted as set out in the Schedule hereunder and land for which no Crown Grant has issued. EXCEPTING THEREOUT all mines and mineral beds and quarries of coal and ironstone and other mines metals stone and minerals as regards part excepted by Notification in Commonwealth of Australia Gazette No. 49 of 14-3-1940 page 597 and all mines and minerals as regards part excepted by Notification in Commonwealth of Australia Gazette No.207 of 16-10-1941 and rights to water lying beneath the surface as regards parts excepted by Notifications in Commonwealth of Australia Gazettes No.49 of 14-3-1940 page 597 and No.16 of 4-3-1954.

SCHEDULE OF GRANTS

Parish	Portion	Name of Grantee	Date of Grant	Grant Reference Volume	Folio
Stockton	Pt.13	Kenneth Snodgrass	31-7-1840	-	-
	Pt.35	William Harvey	21-3-1839	-	-
Stowell	Pt.120			715	163
	Pts.11			1111	197
	Pts.102			1570	230
	Pt.14			1670	124

REG.GEN. 26-8-1975

FIRST SCHEDULE

THE COMMONWEALTH OF AUSTRALIA.

GRN

SECOND SCHEDULE

EA 1. Easement for Sewer Effluent created by Acquisition No.D148706 appurtenant to part of the land above described affecting that part shown as "E'mt for Sewer Effluent" in plan hereon.

EA 2. Easement for Underground Cables created by Acquisition No.D222045 appurtenant to part of the land above described affecting that part shown as "Emt for U/G Cables" in plan hereon.

EA 3. Easement for Sewer Effluent created by Acquisition No.G173362 appurtenant to part of the land above described affecting that part shown as "E'mt for Sewer Effluent" in plan hereon.

RW 4. Right of Way created by Transfer No.G506472 appurtenent to part of the land above described affecting that part shown as "E'mt for R.O.W. & Restrictive Covenants" in plan hereon.

RW 5. Right of Way created by Transfer No.G520890 appurtenant to part of the land above described affecting land shown in Deposited Plan 440393 and more fully set out in Transfer No.G520890.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

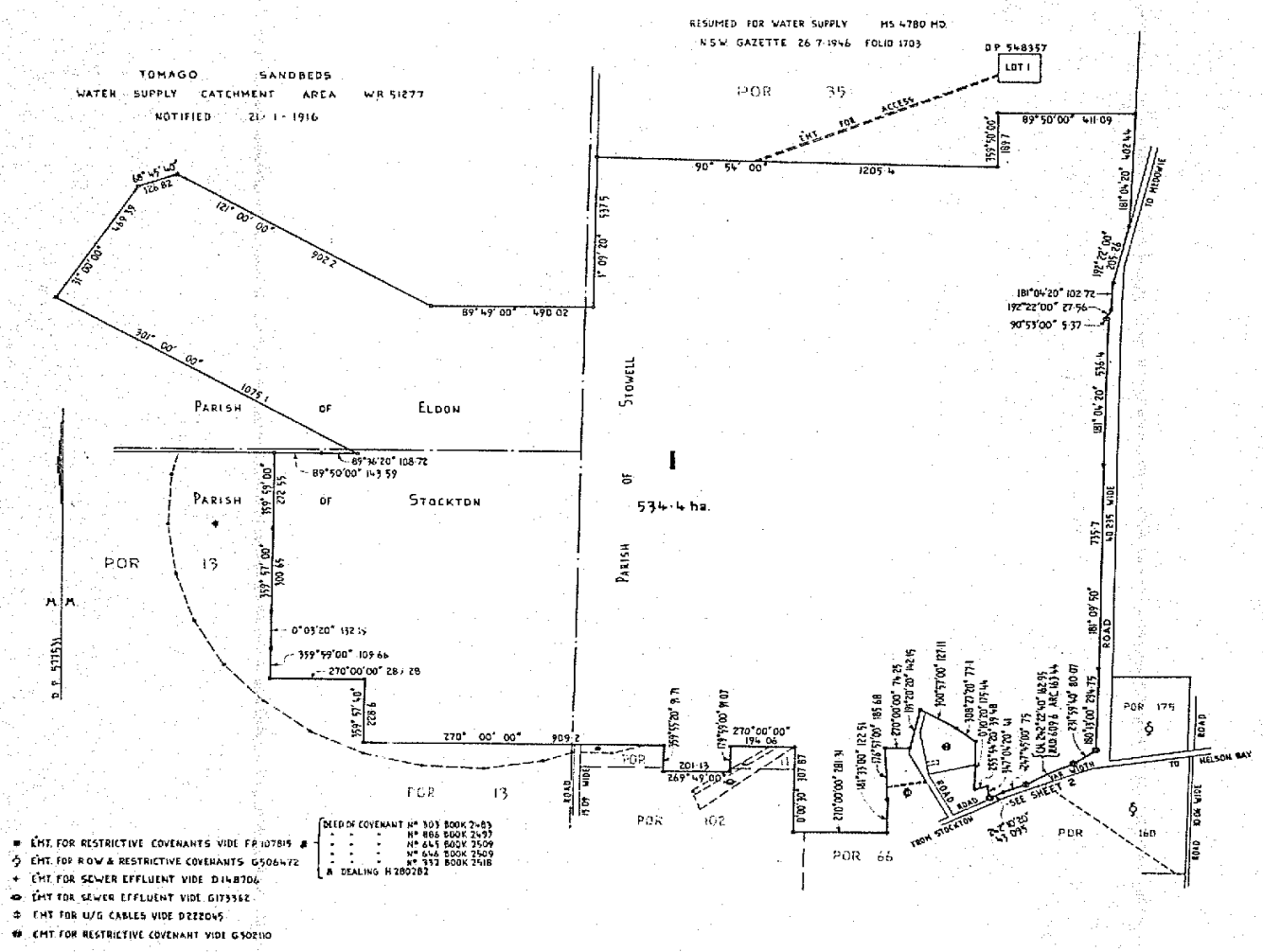
Req:R680961 /Doc:CT 12865-116 CT /Rev:03-Feb-2011 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:28 /Seq:2 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES

CANCELLED

SEE AUTO FOLIO



CT 13-12-77

Q512854P
DP 638791
X425458P

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
CANCELLED					
SEE AUTO FOLIO					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
CV Covenant	Q512854P	—	Created by deed dated 11-11-1977	28-2-1978				
EA X425458P Transfer -			Easement for Electricity Transmission Lines affecting the part of the land within described shown as "Proposed Easement for Underground Electricity Cables" in DP638791. Registered 28.3.1988.					

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Vol. 12865 Fol. 116

Req:R680961 /Doc:CT 12865-116 CT /Rev:03-Feb-2011 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:28 /Seq:3 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

Req:R680961 /Doc:CT 12865-116 CT /Rev:03-Feb-2011 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:28 /Seq:4 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

Vol. 12865 Fol. 116

DP 632741

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar General
	NATURE	NUMBER	DATE		
CANCELLED					
SEE AUTO FOLIO					

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
NATURE	NUMBER	DATE						

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
3/7/2024 5:45PM

FOLIO: 104/873512

First Title(s): VOL 1570 FOL 230 OLD SYSTEM
THIS FOLIO
Prior Title(s): 101/873511

Recorded	Number	Type of Instrument	C.T. Issue
11/12/1997	DP873512	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
20/11/2003	AA179162	DEPARTMENTAL DEALING	FOLIO CREATED CT NOT ISSUED
20/11/2003	DP1045602	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

Jeffries Circuit, Williamtown PRINTED ON 3/7/2024

InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

Copyright © Office of the Registrar-General 2024

Received: 03/07/2024 17:45:43

LAND REGISTRY SERVICES Historical Search

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

3/7/2024 5:43PM

FOLIO: 43/1045602

First Title(s): VOL 111 FOL 197 OLD SYSTEM — VOL 1570 FOL 230 THIS FOLIO
Prior Title(s): 104/873512

Recorded	Number	Type of Instrument	C.T. Issue
20/11/2003	DP1045602	DEPOSITED PLAN	FOLIO CREATED EDITION 1
2/9/2005	AB655955	VARIATION OF LEASE	EDITION 2
11/7/2006	AC173215	SUB-LEASE	
11/7/2006	AC173216	SUB-LEASE	
31/8/2006	AC296242	SUB-LEASE	
31/8/2006	AC366709	SUB-LEASE	
31/8/2006	AC366710	SUB-LEASE	
23/10/2006	AC515068	SUB-LEASE	
23/10/2006	AC515069	SUB-LEASE	
7/3/2007	AC957340	REQUEST	
7/3/2007	AC978562	DEPARTMENTAL DEALING	
22/6/2007	AD151329	REQUEST	
22/6/2007	AD207986	DEPARTMENTAL DEALING	
22/6/2007	AD208031	DEPARTMENTAL DEALING	
15/2/2008	AC949542	REJECTED - SUB-LEASE	
15/2/2008	AD436278	REJECTED - SUB-LEASE	
18/2/2008	AD147783	SUB-LEASE	
24/10/2008	AE272663	SURRENDER OF LEASE	
24/10/2008	AE272664	SUB-LEASE	
24/10/2008	AE272665	SUB-LEASE	
28/4/2009	AE453318	REJECTED - VARIATION OF LEASE	
1/12/2009	AE815505	REJECTED - SUB-LEASE	
1/12/2009	AE815509	REJECTED - SUB-LEASE	
3/12/2009	AF162407	SUB-LEASE	
3/12/2009	AE974802	SUB-LEASE	
3/12/2009	AF16202	SURRENDER OF LEASE	

END OF PAGE 1 - CONTINUED OVER

Recorded	Number	Type of Instrument	C.T. Issue
17/3/2010	AF326619	SUB-LEASE	
18/3/2010	AF363480	SUB-LEASE	
1/6/2010	AF528621	SUB-LEASE	
29/11/2010	AF830949	SUB-LEASE	
28/2/2011	AF896548	SUB-LEASE	
7/2/2012	AG553727	SUB-LEASE	
7/2/2012	AG562995	VARIATION OF LEASE	
7/2/2012	AG778049	SUB-LEASE	
20/3/2013	AH619356	DEPARTMENTAL DEALING	
28/5/2013	AH687917	VARIATION OF LEASE	
5/7/2013	AH774648	VARIATION OF LEASE	
8/8/2013	DP1187948	DEPOSITED PLAN	
13/11/2013	AI158554	DEPARTMENTAL DEALING	
11/2/2014	AI212305	DEPARTMENTAL DEALING	
6/3/2014	AI199571	VARIATION OF LEASE	
27/5/2014	AI199572	SUB-LEASE	
4/6/2014	AI611803	DEPARTMENTAL DEALING	
4/6/2014	AI449855	MORTGAGE OF LEASE	
29/8/2014	AI641964	MORTGAGE OF LEASE	
29/8/2014	AI641965	MORTGAGE OF LEASE	
8/12/2014	AI839310	SUB-LEASE	
6/3/2015	AI224925	REJECTED - SUB-LEASE	
6/3/2015	AI390432	REJECTED - SUB-LEASE	
6/3/2015	AI464568	REJECTED - SUB-LEASE	
27/5/2015	AJ500918	SUB-LEASE	

END OF PAGE 2 - CONTINUED OVER

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
3/7/2024 5:43PM

FOLIO: 43/1045602 PAGE 3

Recorded	Number	Type of Instrument	C.T. Issue
10/6/2015	AJ552941	DEPARTMENTAL DEALING	
3/7/2015	AJ610377	SUB-LEASE	
21/10/2015	DP1213338	DEPOSITED PLAN	
13/1/2016	DP1133402	WITHDRAWN - PROPOSED PLAN	
8/2/2016	AK130738	WITHDRAWN - VARIATION OF LEASE	
26/2/2016	AK130737	SUB-LEASE	
21/7/2016	AK449173	VARIATION OF LEASE	
17/1/2017	AK694958	REJECTED - SURRENDER OF LEASE	
17/1/2017	AK694959	REJECTED - SUB-LEASE	
21/8/2017	DP1132096	REJECTED - DEPOSITED PLAN	
31/1/2023	AS815948	REQUEST	EDITION 3
6/2/2023	AS840440	DEPARTMENTAL DEALING	EDITION 4
7/2/2023	AS844558	DEPARTMENTAL DEALING	EDITION 5
23/3/2023	AS947999	DEPARTMENTAL DEALING	EDITION 6
21/4/2023	AS972622	DISCHARGE OF MORTGAGE	
21/4/2023	AS972624	MORTGAGE OF LEASE	
21/4/2023	AS972647	DISCHARGE OF MORTGAGE	
21/4/2023	AS972648	DISCHARGE OF MORTGAGE	
21/4/2023	AS972650	MORTGAGE OF LEASE	
21/4/2023	AS952940	VARIATION OF LEASE	EDITION 7

*** END OF SEARCH ***

Jeffries Circuit, Williamtown PRINTED ON 3/7/2024

Copyright © Office of the Registrar-General 2024

Received: 03/07/2024 17:43:28

LAND REGISTRY SERVICES

Title Search

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 43/1045602

SEARCH DATE	TIME	EDITION NO	DATE
3/7/2024	5:41 PM	7	21/4/2023

LAND

LOT 43 IN DEPOSITED PLAN 1045602
AT WILLIAMTOWN
LOCAL GOVERNMENT AREA PORT STEPHENS
PARISH OF STOWELL COUNTY OF GLOUCESTER
TITLE DIAGRAM DP1045602

FIRST SCHEDULE

THE COMMONWEALTH OF AUSTRALIA

SECOND SCHEDULE (5 NOTIFICATIONS)

---

1 LAND EXCLUDES MINERALS WITHIN THE PART SHOWN SO INDICATED IN THE TITLE DIAGRAM - SEE COMM. OF AUST. GAZ. NO.49 DATED 14/3/1940 PAGE 597

2 RIGHT(S) TO WATER LYING BENEATH THE SURFACE WITHIN THE PART SHOWN SO INDICATED IN THE TITLE DIAGRAM - SEE COMMONWEALTH OF AUSTRALIA GAZ. NO.49 DATED 14.3.1940, PAGE 597

3 DI48706 EASEMENT FOR SEWER EFFLUENT APPURTENANT TO PART SHOWN SO BENEFITED AFFECTING THE PART SHOWN AS EASEMENT FOR SEWER EFFLUENT IN THE TITLE DIAGRAM

4 G173362 EASEMENT FOR SEWER EFFLUENT APPURTENANT TO THE PART SHOWN SO BENEFITED AFFECTING THE PART SHOWN AS EASEMENT FOR SEWER EFFLUENT IN THE TITLE DIAGRAM

Does not affect subject site

5 U968638 LEASE TO NEWCASTLE CITY COUNCIL & PORT STEPHENS COUNCIL OF LOT 1 IN DP831977. EXPIRES: 30/6/2024.

AB655955 VARIATION OF LEASE U968638 EXPIRY DATE NOW 31/3/2045

AI199571 VARIATION OF LEASE U968638

AI199572 LEASE OF LEASE U968638 TO NEWCASTLE AIRPORT PARTNERSHIP COMPANY 1 PTY LIMITED, NEWCASTLE AIRPORT PARTNERSHIP COMPANY 2 PTY LIMITED, NEWCASTLE AIRPORT PARTNERSHIP COMPANY 3 PTY LIMITED & NEWCASTLE AIRPORT PARTNERSHIP COMPANY 4 PTY LIMITED EXPIRES: 30/3/2045.

AK449173 VARIATION OF LEASE U968638

AS972624 MORTGAGE OF LEASE U968638 TO CBA CORPORATE SERVICES (NSW) PTY LTD

AS972650 MORTGAGE OF LEASE AI199572 TO CBA CORPORATE SERVICES (NSW) PTY LTD

AS952940 VARIATION OF LEASE AI199572 EXPIRY DATE NOW

END OF PAGE 1 - CONTINUED OVER

SECOND SCHEDULE (5 NOTIFICATIONS) (CONTINUED)

30/12/2075. OPTION OF RENEWAL: MODIFIED TO THREE OPTIONS OF 9 YEARS AND 364 DAYS.

NOTATIONS

UNREGISTERED DEALINGS: PE DP1295775 PP DP1296464.

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

Copyright © Office of the Registrar-General 2024 Received: 03/07/2024 17:41:23

Req:R680390 /Doc:CT 09688-219 CT /Rev:13-Jan-2011 /NSW LRS /Pgs:ALL /Prt:03-Jul-2024 18:10 /Seq:1 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

C. 2

[redacted]IFICATE OF TITLE

NEW SOUTH WALES

ERTY ACT, 1900, as amended.

Prior Title Vol.7626 Fol.160

09688219

Vol. 9688 Fol. 219

1st Edition issued 30-4-1964

J524041

Vol. 9688 Fol. 219

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness S Maclennan

CANCELLED

Registrar-General.

(Page 1)

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in the lands set out in the Schedule of Grants hereunder in Shire Port Stephens Parish Stowell County Gloucester. Excepting thereout (a) the lands transferred by Transfers Nos. B770290, C106390, D21467, F546978, F994369, G610726, G831409 and acquired by acquisition No.G173362. (b) the land but not the minerals specified in Section 141 of the Public Works Act 1912 thereunder resumed by Resumption No.G838072 shown in the plan hereon (c) the roads 75 links and 100 links wide and variable width in the plan hereon (d) the minerals reserved by the Crown Grants.

SCHEDULE

No. of Portion	Date of Grant	Grant Reference Volume	Folio
Pt. 65	7- 2-1872	133	118
66	1- 2-1879	429	14
Pt. 11	20-11-1893	1111	197
Pt.102	26-10-1904	1570	230
1r.5p.Gt.	5- 9-1955	7023	73

FIRST SCHEDULE (continued overleaf)

DORIS IRENE SLADE, of Williamtown, Widow.

Registrar General.

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Schedule.
2. Easements for Sewer Effluent created by acquisitions Nos.D148706 and G173362 affecting the piece of land designated (A) and (B) respectively in the plan hereon.
3. Covenant created by Deed No.H280282 affecting the piece of land designated (C) in the plan hereon.
4. ~~Mortgage No.J367757 to The Commercial Banking Company of Sydney Limited. Entered 18-7-1963.~~ Discharged N436575

Registrar General.

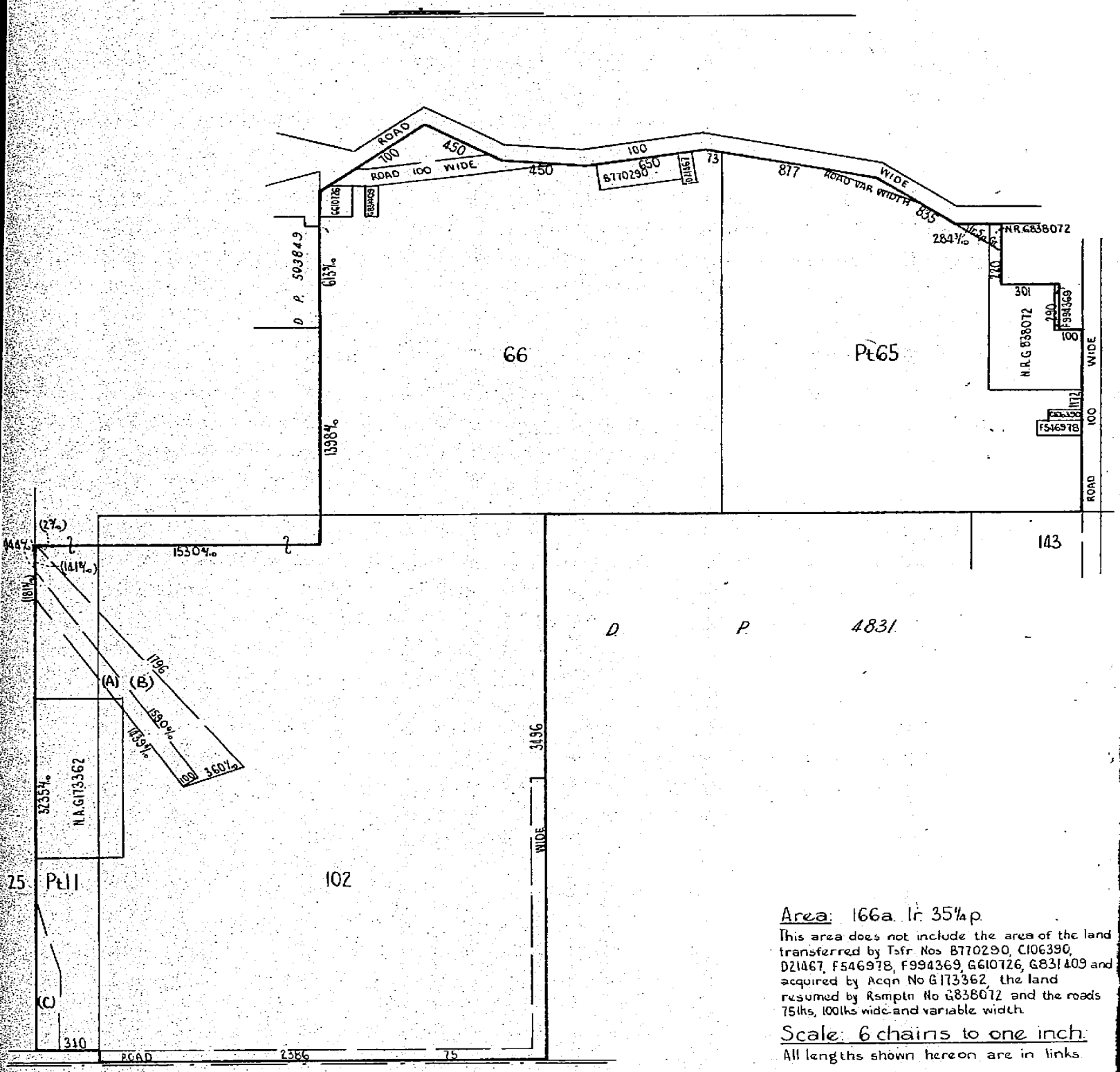
WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED.

Vol. 9688 Fol. 219

PLAN SHOWING LOCATION OF LAND.



Parish of Stockton

Area: 166a. 1r. 35¼p.

This area does not include the area of the land transferred by Tsfr Nos B770290, C106390, D21467, F546978, F994369, G610726, G831409 and acquired by Acqn No G173362, the land resumed by Rsmptn No G838072 and the roads 75lks, 100lks wide and variable width.

Scale: 6 chains to one inch.

All lengths shown hereon are in links.

J524041

Req:R680390 /Doc:CT 09688-219 /Rev:13-Jan-2011 /NSW LRS /Pgs:ALL /Prt:03-Jul-2024 18:10 /Seq:2 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General

This Deed is cancelled and Certificate of Title issued.
Vol. 11486 Fol. 233 & 234 dated 22-11-1972
VIDE O 181414588

REGISTRAR GENERAL

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

Req:R680390 /Doc:CT 09688-219 CT /Rev:13-Jan-2011 /NSW LRS /Pgs:ALL /Prt:03-Jul-2024 18:10 /Seq:3 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

Vol. 9688 Fol. 219

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar-General
	NATURE	NUMBER	DATE		

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
NATURE	NUMBER	DATE						

(Page 4 of 4 pages)

FORM No. 177A NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

Req:R680390 /Doc:CT 09688-219 CT /Rev:13-Jan-2011 /NSW LRS /Pgs:ALL /Prt:03-Jul-2024 18:10 /Seq:4 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

Req:R680975 /Doc:CT 11986-234 CT /Rev:19-Jan-2011 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:48 /Seq:1 of 5
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

[redacted]FICATE OF TITLE

NEW SOUTH WALES [redacted]RTY ACT, 1900, as amended.

Vol. 11986 Fol. 234

For Crown Grants see Schedule

Prior Title Vol. 9688 Fol. 219

Edition issued 22-11-1972

M814588

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

(Page 1) Vol. 11986 Fol. 234

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in the land set out in the Schedule of Grants hereunder in the Shire of Port Stephens Parish of Stowell and County of Gloucester. EXCEPTING THEREOUT the land in Filed Plan 322340 and Filed Plan 344717, the roads shown in the plan hereon and the minerals reserved by the Crown Grants.

SCHEDULE OF GRANTS

Number of Portion	Grant Reference Volume	Folio
Pt.65	133	118
Pt.66	429	14
Pt.11	1111	197
Pt.102	1570	230
Pt.1138m^2 Gt.	7023	73

FIRST SCHEDULE

~~DORIS IRENE SLADE, of Williamtown, Widow.~~

Registrar General.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. Easement for Sewer Effluent created by Acquisitions Nos.D148706 and G173362 affecting the pieces of land designated (A) and (B) respectively in the plan hereon.
3. Covenant created by Deed No.H280282 affecting the piece of land designated (C) in the plan hereon.

Registrar General.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

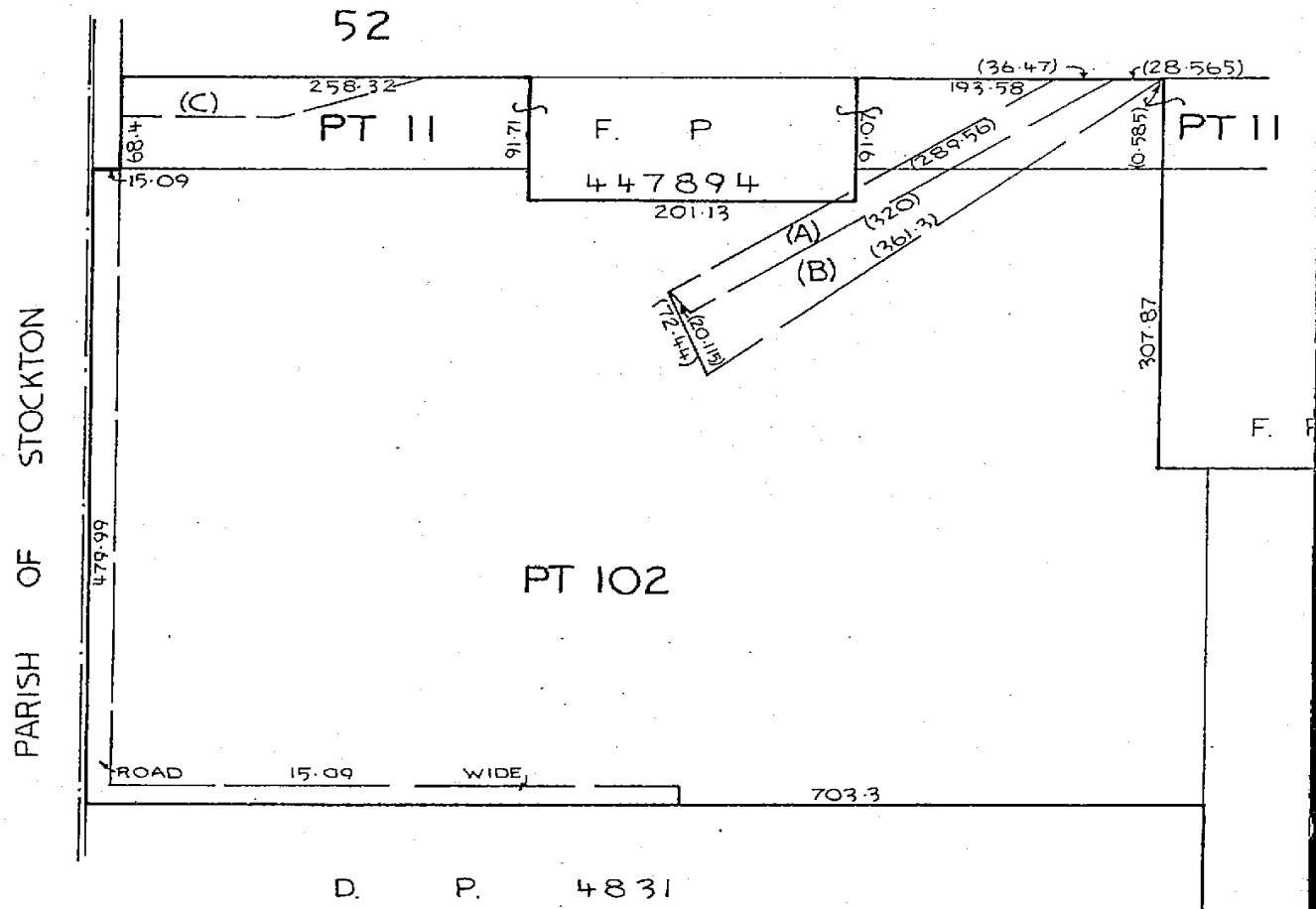
WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

Vol. 11986 Fol. 234

PLAN SHOWIN

LENG



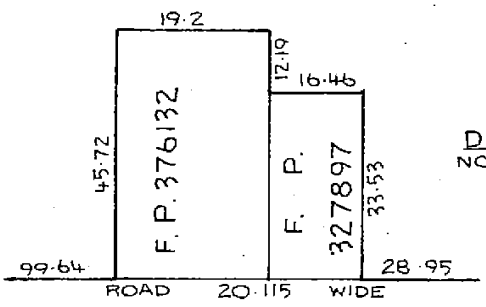


DIAGRAM B
NOT TO SCALE

AREA : 67·37 ha
THIS AREA DOES NOT INCLUDE
THE AREA OF THE ROADS AND
THE AREA OF THE LAND IN
F. P. 322340 AND F. P. 344717

382·22

143

SEE

99·64

ROAD

M 814586

REDUCTION RATIO 1:4

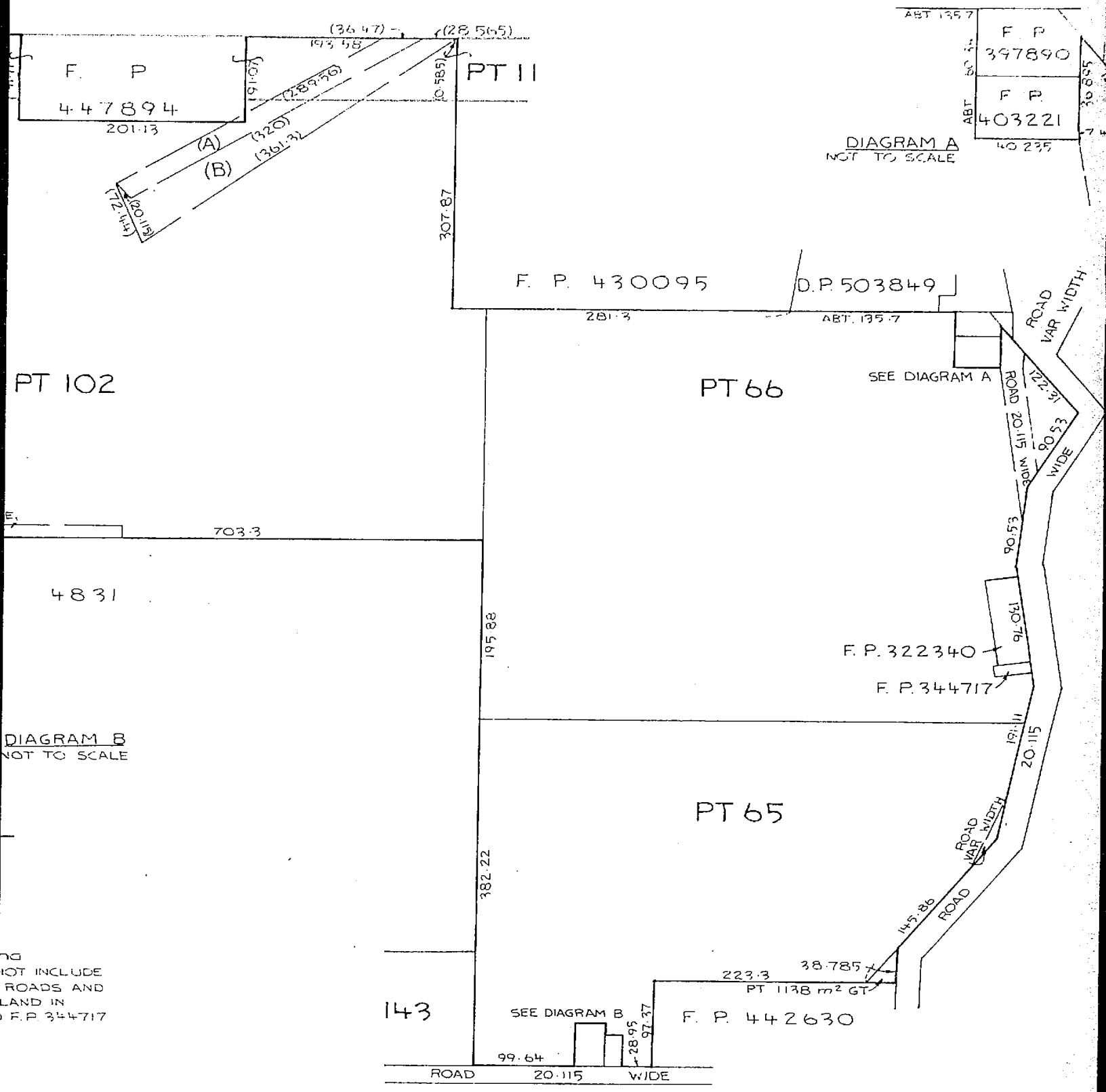
Req:R680975 /Doc:CT 11986-234 CT /Rev:19-Jan-2011 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:48 /Seq:2 of 5
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

Req:R680975 /Doc:CT 11986-234 CT /Rev:19-Jan-2011 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:48 /Seq:3 of 5
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown ages)

Vol. 11950 Fol. 234

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



NOT INCLUDE ROADS AND LAND IN F.P 344717

REDUCTION RATIO 1:4000

Req:R680975 /Doc:CT 11986-234 CT /Rev:19-Jan-2011 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:48 /Seq:4 of 5
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

G LOCATION OF LAND

HS ARE IN METRES

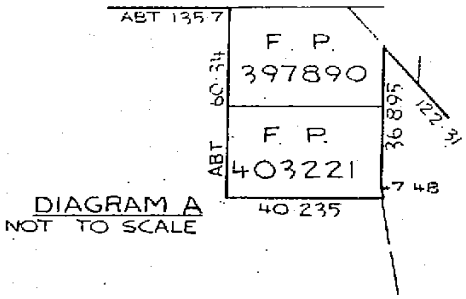
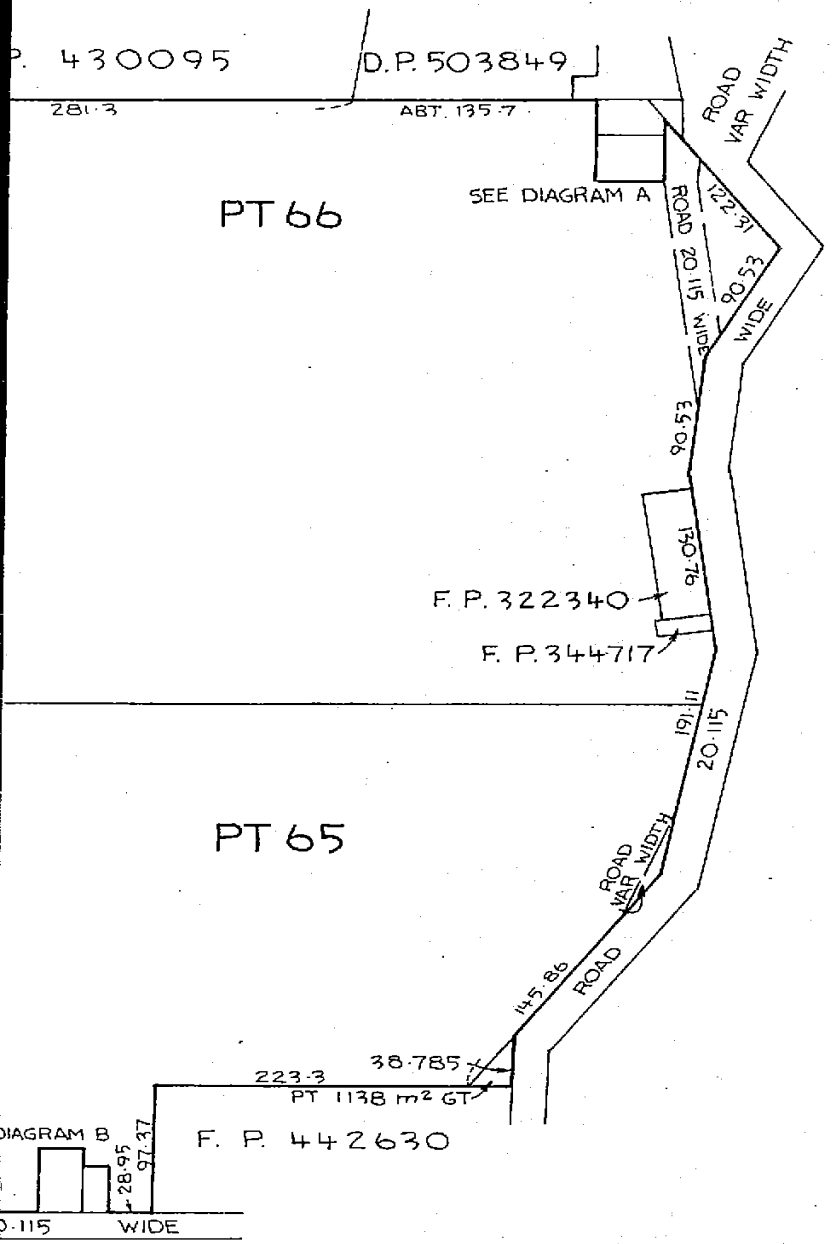


DIAGRAM A
NOT TO SCALE



000

Vol. 11986 Fol. 234

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
Leslie Slade of Williamtown, Builder and Margaret Patricia Slade his wife as joint tenants	Transfer	N317252	31.5.1973	5.7.1973	

This deed is cancelled as to the whole

New Certificates of Title have issued on 21-12-1977

for lots in Deposited Plan No. 593273 as follows:-

Lots 651-653 Vol. 13511 Fol. 238-240 respectively

REGISTRAR GENERAL

NEW CERTIFICATE(S) OF TITLE ISSUING ON DP593273
NO DEALING TO BE REGISTERED WITHOUT REFERENCE TO SURVEY DRAFTING BRANCH.

N317252 5.7.1973
DP593273
825 77

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION
Mortgage	N317253	31.5.1973	to Doris Irene Slade of Williamtown, Widow	5.7.1973		

(Page 4 of 4 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Req:R680975 /Doc:CT 11986-234 CT /Rev:19-Jan-2011 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:48 /Seq:5 of 5
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

Req:R680972 /Doc:CT 13511-240 CT /Rev:16-Dec-2010 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:44 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

F. 118

CERTIFICATE OF TITLE

13511240

NEW SOUTH WALES — REAL PROPERTY ACT, 1900

Crown Grants Vol. 133 Fol.1
Vol. 429 Fol.14
Vol. 1111 Fol.197
Vol. 1570 Fol.230
Vol. 7023 Fol.73

Vol. 13511 Fol. 240

Prior Title Vol.11986 Fol.234

CANCELLED

EDITION ISSUED 23 12 1977

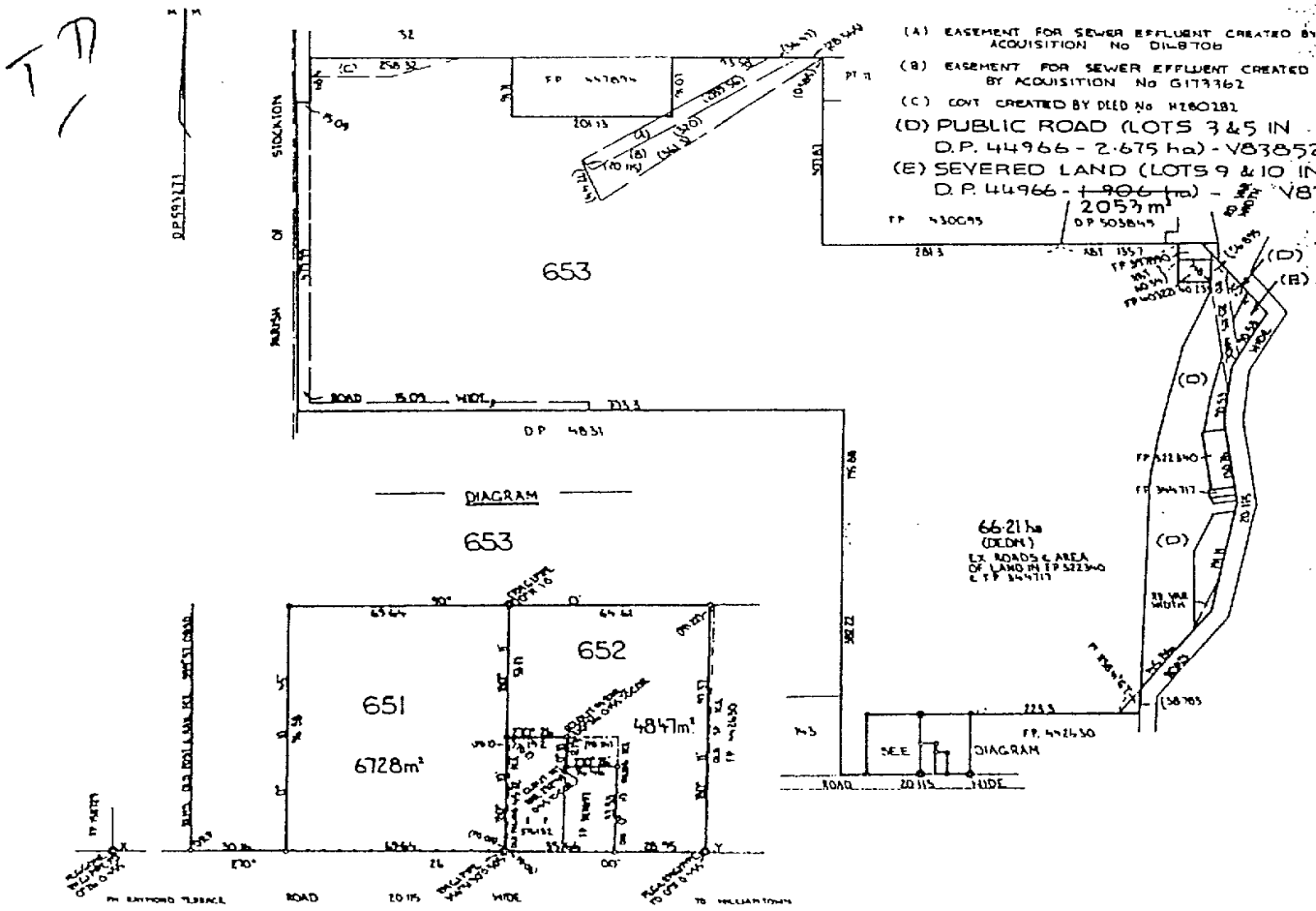
(Page 1) Vol. 13511 Fol. 240

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 653 in Deposited Plan 593273 in the Shire of Port Stephens Parish of Stowell and County of Gloucester. EXCEPTING THEREOUT the land in Deposited Plan 322340 and Deposited Plan 344717, the roads shown in the plan hereon and the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~LESLIE GLADE of Williamtown, Builder~~ and MARGARET PATRICIA SLADE his wife as Joint Tenants.

21025 = 1371 (20)

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. D148706 Easement for Sewer Effluent affecting the land designated (A) shown so burdened in the plan hereon. DP593273
3. G173362 Easement for Sewer Effluent affecting the land designated (B) shown so burdened in the plan hereon. DP593273
4. H280282 Covenant affecting the land designated (C) shown so burdened in the plan hereon.
5. ~~N517253 Mortgage to Doris Jane Glade of Williamtown Widow.~~ Discharged R371029

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE

Req:R680972 /Doc:CT 13511-240 CT /Rev:16-Dec-2010 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:44 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

Vol. 13511 Fol. 240

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
~~The State of New South Wales as regards Lots 9 and 10 in DP 44966 and Leslie Slade and Margaret Patricia Slade as joint tenants as regards the residue by Resumptions V83852. Registered 1-2-1985~~					
~~The Council of the Shire of Port Stephens as to Lots 11 and 12 in D.P.44966 and Leslie Slade and Margaret Patricia Slade as joint tenants as to the residue being Lot 13 in D.P.44966 and part of lot 653 in D.P.593273 by Transfer V944470 Registered 22-1-1986~~					
The State of New South Wales as to lots 9 and 10 in DP 44966, The Council of the Shire of Port Stephens as to lots 11 and 12 in DP44966 and Leslie Slade and Margaret Patricia Slade as joint tenants as to the residue being lot 13 in DP44966 and part of lot 653 in DP593273 by Transfer V944470. Registered 22-1-1986.					
by Request 7209614 Port Stephens Shire Council of lot 1 in DP 852409 Registered 12.1.2001					

As to pt being Lots 11 & 12 DP 44966
this Deed is cancelled and New Certificate of Title Issued.
Vol. 5429 Fol. 101 dated 24-2-1986
Vide V944470

As to pt being Lot 13 DP 44966
this Deed is cancelled and New Certificate of Title Issued.
Vol. 15499 Fol. 102 dated 24-2-1986
Vide W180969

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
~~Lease~~	~~Q43753~~		~~Affected by Resn 83852 Resumption of Lots 3 & 5 DP 44966 Road~~					
			~~Lot 9 DP 44966 part Lot 653 DP 593273 and Person Lease~~					
			~~Conditions of Lease Gazette Notice~~	18.4.1994		Cancelled	R371029	
V83852 Resumption - The land so indicated in the plan hereon being Lots 3 and 5 in DP 44966 is now Public Road. Registered 1-2-1985								
V83852 Resumption - The land so indicated in the plan hereon being Lots 9 and 10 in DP 44966 is severed land. Registered 1-2-1985								

The residue of land in this folio comprises
Lots 9 & 10 DP 44966 (SEVERED LAND)
LOTS 3 & 5 DP 44966 (ROAD)

7209614 Request. Part of the land being lot 1 in DP852406 is closed road. Registered 12.1.2001
Folio is cancelled as to part. New folio created for lot 1 in DP852409. Residue remains being road and severed land

(Page 2 of 2 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

R116560 (N371252)
CT 24 = 7m
R371029 Closed Lots 9 and 10 in DP 44966 severed Lot 66 dedicated 22-1-1986 as 7810425.
T976004 DP
V83852 LAR
V944470 TC
R
W180969 NC
LOT 1 DP 852409 CLOSED ROAD SEE GAZ. 13-10-2000 FOL. 11042 (7209614)
7209614 WR
7209614 R

Req:R680968 /Doc:CT 15429-102 CT /Rev:22-Dec-2010 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:38 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

15429102

[redacted]FICATE OF TITL[redacted]

NEW SOUTH WALES [redacted]AL PROPERTY ACT, 1900

First Title Vol. 133 Fol. 110
Vol.429 Fol.14, Vol.1111 Fol. 197
Vol.1570 Fol.230, Vol.7023 Fol. 73

Prior Title Vol. 13511 Fol. 240

Vol. 15429 Fol. 102

EDITION ISSUED 24 2 1986

CANCELLED W

15429 Fol. 102

(Page 1) Vol.

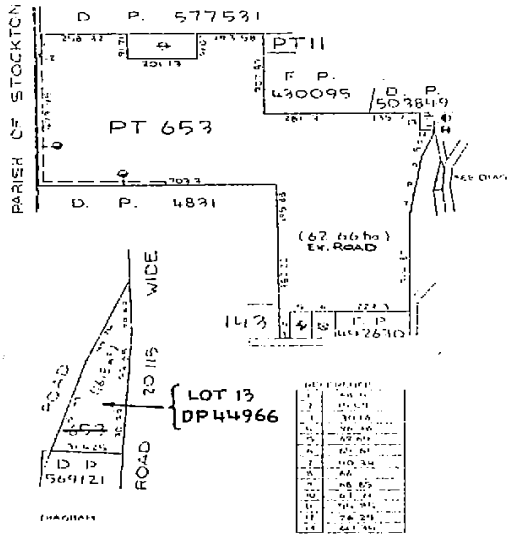
I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900..

Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



24-3-1986

TOTAL AREA: 62.82 ha.
THIS AREA DOES NOT INCLUDE THE AREA OF THE ROAD.

LAND REFERRED TO

Lot 13 in DP44966 and the part of Lot 653 in DP593273 shown in the plan hereon at Williamtown in the Shire of Port Stephens Parish of Stowell County of Gloucester.

FIRST SCHEDULE

LESLIE SLADE and MARGARET PATRICIA SLADE as Joint Tenants.

SECOND SCHEDULE

1. Reservations and conditions in the Crown Grant.
2. Excepting the road shown in the plan hereon.
3. D148706 Easement for Sewer Effluent affecting the part of the land above described shown designated (A) in DP593273.
4. G173362 Easement for Sewer Effluent affecting the part of the land above described shown designated (B) in DP593273.
5. H280282 Covenant affecting part of the land above described shown designated (C) in DP593273.

As to LOT 13 IN DP 44966
this Deed is cancelled and New Certificate of Title Issued.
Vol. 15453 Fol. 141 dated 16.6.1986.
Vide Q180969

As to THE PART OF LOT 653 IN DP 593273
this Deed is cancelled and New Certificate of Title Issued.
Vol. 15453 Fol. 140 dated 16.6.1986.
Vide Q180969.

LT 2/64

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Vol 15429 Fol 102

40828–4036

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	Registrar General

SECOND SCHEDULE (continued)

PARTICULARS	Registrar General	CANCELLATION

NOTATIONS AND UNREGISTERED DEALINGS

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Req:R680968 /Doc:CT 15429-102 CT /Rev:22-Dec-2010 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:38 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

Req:R680960 /Doc:CT 15453-140 CT /Rev:16-Dec-2010 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:22 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

15453140

CERTIFICATE OF TITLE

NEW SOUTH WALES

REAL PROPERTY ACT, 1900

First Titles Vol. 133 Fol. 118
Vol. 429 Fol. 14
Vol.1111 Fol. 197
Vol.1570 Fol. 230
Vol.7023 Fol. 73

Vol. 15453 Fol. 140

EDITION 3 / 832554.
ISSUED 16 6 1986

CANCELLED W

Prior Title Vol. 15429 Fol. 102

I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900.

Registrar General.

15453 Fol. 140

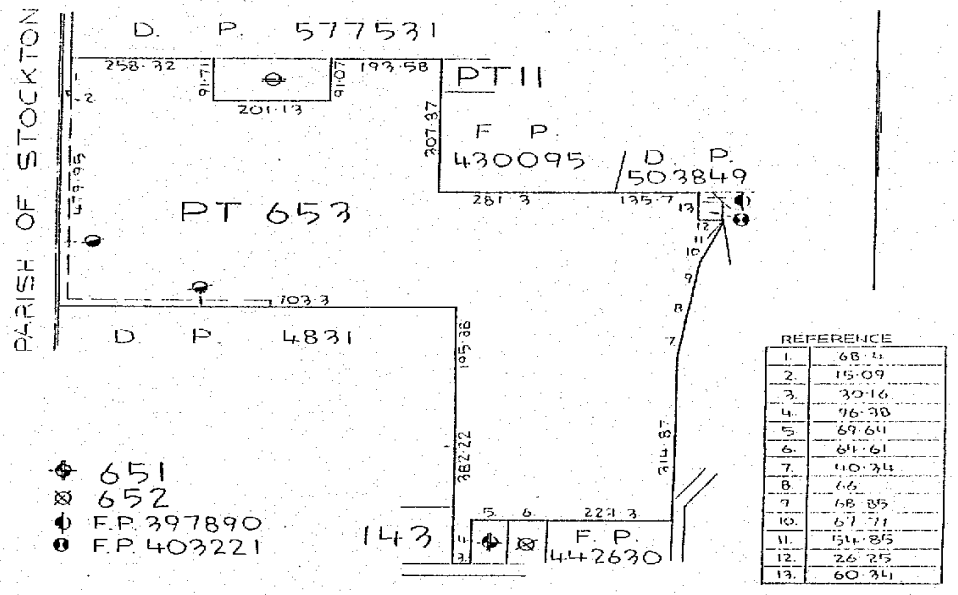
(Page 1) Vol.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



AREA: 62·66 ha
THIS AREA DOES NOT INCLUDE THE AREA OF THE ROAD

LAND REFERRED TO

The part of Lot 653 in DP 593273 shown in the plan hereon at Williamtown in the Shire of Port Stephens Parish of Stowell County of Gloucester.

FIRST SCHEDULE

~~LESLIE SLADE and MARGARET PATRICIA SLADE as Joint Tenants.~~

SECOND SCHEDULE

1. Reservations and conditions in the Crown Grant.
2. Excepting the road shown in the plan hereon.
3. D148706 Easement for Sewer Effluent affecting the part of the land above described shown designated (A) in DP 593273.
4. G173362 Easement for Sewer Effluent affecting the part of the land above described shown designated (B) in DP 593273.
5. H280282 Covenant affecting part of the land above described shown designated (C) in DP 593273.

PROUDLY PRINTED IN AUSTRALIA L.O. 55

Vol 15453 Fol 140

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR

Registrar General

B. & M. Ellison Pty. Limited by Notice of Death Y376168. Transfer Y376169 Registered 22-5-1989

SECOND SCHEDULE (continued)

PARTICULARS

Registrar General

CANCELLATION

~~X147018 Mortgage to National Australia Bank Limited. Registered 21-10-1987~~

Y376167

DP/SP 832554 Registered
This folio is cancelled as to whole/~~part~~ upon creation
of computer folios for lot/s 3 in the
~~above~~mentioned plan.

NOTATIONS AND UNREGISTERED DEALINGS

X147018
Y376167 Discharge
Y376169 Transfer
DP832554

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown
Req:R680960 /Doc:CT 15453-140 CT /Rev:16-Dec-2010 /NSW LRS /Pgs:ALL /Prt:04-Jul-2024 05:22 /Seq:2 of 2

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
3/7/2024 5:48PM

FOLIO: 3/832554

First Title(s):	OLD SYSTEM	VOL 1111 FOL 197
	VOL 1570 FOL 230	VOL 133 FOL 118
	VOL 429 FOL 14	VOL 7023 FOL 73
Prior Title(s):	131-132/734906	VOL 15453 FOL 140

Recorded	Number	Type of Instrument	C.T. Issue
8/9/1993	DP832554	DEPOSITED PLAN	FOLIO CREATED EDITION 1
~~7/10/1993~~	~~I697245~~	~~TRANSFER~~	
7/10/1993	I697246	REQUEST	EDITION 2
21/11/1995	DP854649	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

Jeffries Circuit, Williamtown PRINTED ON 3/7/2024

InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

Copyright © Office of the Registrar-General 2024

Received: 03/07/2024 17:48:25

Req:R680378 /Doc:DL I697245 /Rev:21-Apr-2010 /NSW LRS /Pgs:ALL /Prt:03-Jul-2024 18:06 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown

RP13

TRANSFER

Real Property Act, 1900

I 697245 Y

Office of State Revenue use only
OFFICE OF STATE REVENUE 015300
1992/93 N4
DULY STAMPED
1ST REC Nº 30029475S

NEW SOUTH WALES $2 STAMP DUTY

(A) **LAND TRANSFERRED**

Show no more than 20 References to Title.
If appropriate, specify the share transferred.

PART FOLIO IDENTIFIER 3/832554
That part of Lot 3 in DP 832554 which was formerly contained in Lots 131 and 132 in DP 593273

(B) **LODGED BY**

L.T.O. Box

Name, Address or DX and Telephone
H. M. ALLEN & CO.
LAW STATIONERS
47 V

REFERENCE (max. 15 characters): Stw 92.2267

(C) **TRANSFEROR** ERIC ASTON MOXEY and MARIA MERLIE MOXEY

(D) acknowledges receipt of the consideration of SEVENTY FIVE THOUSAND DOLLARS
and as regards the land specified above transfers to the transferee an estate in fee simple

(E) subject to the following **ENCUMBRANCES** 1. ..... 2. ..... 3. .....

(F) **TRANSFEREE**

(G) T

B & M ELLISON PTY. LIMITED ACN 001 305 148

as joint tenants/tenants in common

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900. **DATE** 24 September 1993

Signed in my presence by the transferor who is personally known to me.

Signature of Witness

THOMAS LAURIE ADAM
Name of Witness (BLOCK LETTERS)

Solicitor, Raymond Terrace
Address of Witness

x

M. Moxey.
Signature of Transferor

Signed in my presence by the transferee who is personally known to me.

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address of Witness

SOLICITOR FOR Signature of Transferee
HE MURRAY

☞ **INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE**

CHECKED BY (office use only)

Req:R680378 /Doc:DL I697245 /Rev:21-Apr-2010 /NSW LRS /Pgs:ALL /Prt:03-Jul-2024 18:06 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit? Williamtown I 697245

Cunningham, Adam & Vitnell

SOLICITORS

T. L. ADAM
D. A. VITNELL (LL.B.Syd.)

ADAM PLACE, RAYMOND TERRACE, NSW 2324

P.O. BOX 249, RAYMOND TERRACE, NSW 2324
Phone: (049) 87 3344 Fax: (049) 83 1335
DX 7848 Newcastle

TO

THE REGISTRAR GENERAL

SYDNEY

Our Ref:

Your Ref:

Enquiries

RE: FOLIO IDENTIFIER 3/832554
MOXEY SALE TO ELLISON

YOU ARE AUTHORISED to hand to SPARKE HELMORE & WITHYCOMBE or as they may direct, Certificate of Title Folio Identifier 3/832554.

CUNNINGHAM ADAM & VITNELL

Per:

24th September, 1993

H. M. ALLEN & CO.
LAW STATIONERS
47 V

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
3/7/2024 5:44PM

FOLIO: 1/854649

First Title(s): OLD SYSTEM VOL 1111 FOL 197
VOL 1570 FOL 230 VOL 133 FOL 118
VOL 429 FOL 14 VOL 7023 FOL 73
Prior Title(s): 3/832554

Recorded	Number	Type of Instrument	C.T. Issue
21/11/1995	DP854649	DEPOSITED PLAN	FOLIO CREATED EDITION 1
16/1/2002	DP1036501	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

Jeffries Circuit, Williamtown PRINTED ON 3/7/2024

InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

Copyright © Office of the Registrar-General 2024

Received: 03/07/2024 17:44:40

LAND REGISTRY SERVICES Historical Search

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
3/7/2024 5:43PM

FOLIO: 11/1036501

First Title(s): VOL 1111 FOL 197 VOL 133 FOL 118
VOL 1570 FOL 230 VOL 429 FOL 14
VOL 7023 FOL 73 OLD SYSTEM
Prior Title(s): 1/854649

Recorded	Number	Type of Instrument	C.T. Issue
16/1/2002	DP1036501	DEPOSITED PLAN	FOLIO CREATED EDITION 1
26/10/2007	AD517590	CAVEAT	
10/2/2010	AF307428	CAVEAT	
22/12/2010	AF964229	CAVEAT	
13/1/2011	AF996394	WITHDRAWAL OF CAVEAT	
8/8/2013	DP1187948	DEPOSITED PLAN	EDITION 2
2/12/2013	AI117347	WITHDRAWAL OF CAVEAT	
2/12/2013	AI117348	WITHDRAWAL OF CAVEAT	
24/1/2019	AP19070	CAVEAT	
22/1/2020	AP848327	WITHDRAWAL OF CAVEAT	
22/1/2020	AP848328	TRANSFER	
22/1/2020	AP848329	TRANSFER	
22/1/2020	AP848330	TRANSFER	
22/1/2020	AP848331	MORTGAGE	EDITION 3
12/11/2020	AQ548484	CAVEAT	
17/4/2023	AS971574	DISCHARGE OF MORTGAGE	
17/4/2023	AS972528	MORTGAGE	EDITION 4

*** END OF SEARCH ***

Jeffries Circuit, Williamtown PRINTED ON 3/7/2024

Copyright © Office of the Registrar-General 2024

Received: 03/07/2024 17:43:26

Req:R680299 /Doc:DL AP848328 /Rev:21-Jan-2020 /NSW LRS /Prt:03-Jul-2024 17:44 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit, Williamtown

System Document Identification

Form Number: 01T-e
Template Number: T_nsw16
ELN Document ID: 547644848
ELN NOS ID: 547644849

TRANSFER

New South Wales
Real Property Act 1900

Land Registry Document Identification

AP848328

Stamp Duty: 9744092-001

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

LODGED BY:

Responsible Subscriber: JENKINS LEGAL SERVICES ABN 20164761540
Address: L5, 77 Hunter ST
Newcastle 2300
Telephone:
PEXA Subscriber Number: 1775
Customer Account Number: 500314L
Document Collection Box: 1W
Client Reference: 680714 (NAPL)

LAND TITLE REFERENCE

11/1036501
3/1036690

TRANSFEROR

B & M ELLISON PTY. LIMITED ACN 001305148
Registered company

TRANSFEREE

NEWCASTLE CITY COUNCIL
Local government or body
Share of whole of land/interest: 1/ 2

PORT STEPHENS COUNCIL
Local government or body
Share of whole of land/interest: 1/ 2

Tenancy: Tenants in Common

CONSIDERATION

The transferor acknowledges receipt of the consideration of $22,000,000.00

ESTATE TRANSFERRED

FEE SIMPLE

The Transferor transfers to the Transferee the Estate specified in this Instrument and acknowledges receipt of any Consideration shown.

SIGNING FOR TRANSFEROR

I certify that:

1. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
2. The Certifier has retained the evidence supporting this Registry Instrument or Document.
3. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to verify the identity of the transferor.

Party Represented by Subscriber:

B & M ELLISON PTY. LIMITED

Signed By: Sam Slack-Smith
PEXA Signer Number: 37671
Signer Capacity: Practitioner Certifier
Digital Signing Certificate Number: 18389

Req:R680299 /Doc:DL AP848328 /Rev:21-Jan-2020 /NSW LRS /Prt:03-Jul-2024 17:44 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit, Williamtown

Signed for Subscriber: JENKINS LEGAL SERVICES PTY LTD ABN 20164761540

JENKINS LEGAL SERVICES

Subscriber Capacity: Representative Subscriber

PEXA Subscriber Number: 1775 **Customer Account Number:** 500314

Date: 21/01/2020

SIGNING FOR TRANSFEREE

I certify that:

1. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
2. The Certifier has retained the evidence supporting this Registry Instrument or Document.
3. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to verify the identity of the transferee.

Party Represented by Subscriber:

NEWCASTLE CITY COUNCIL
PORT STEPHENS COUNCIL

Signed By: Andrew Buchanan **Signer Capacity:** Practitioner Certifier

PEXA Signer Number: 50497 **Digital Signing Certificate Number:** 35470

Signed for Subscriber: PARTNERS OF HWL EBSWORTH LAWYERS ABN 37246549189

HWL EBSWORTH LAWYERS

Subscriber Capacity: Representative Subscriber

PEXA Subscriber Number: 7943 **Customer Account Number:** 501286

Date: 21/01/2020

Req:R680379 /Doc:DL AP848329 /Rev:21-Jan-2020 /NSW LRS /Prt:03-Jul-2024 18:06 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit, Williamtown

System Document Identification

Form Number: 01T-e
Template Number: T_nsw16
ELN Document ID: 547949996
ELN NOS ID: 547949997

TRANSFER

New South Wales
Real Property Act 1900

Land Registry Document Identification

AP848329

Stamp Duty: 9744092-002

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

LODGED BY:

Responsible Subscriber: JENKINS LEGAL SERVICES ABN 20164761540
Address: L5, 77 Hunter ST
Newcastle 2300
Telephone:
PEXA Subscriber Number: 1775
Customer Account Number: 500314L
Document Collection Box: 1W
Client Reference: 680714 (NAPL)

LAND TITLE REFERENCE

11/1036501
3/1036690

TRANSFEROR

NEWCASTLE CITY COUNCIL
Local government or body

PORT STEPHENS COUNCIL
Local government or body

TRANSFEREE

NEWCASTLE AIRPORT PARTNERSHIP COMPANY 1 PTY LIMITED ACN 163779646
Registered company
Share of whole of land/interest: 51/ 200

NEWCASTLE AIRPORT PARTNERSHIP COMPANY 2 PTY LIMITED ACN 163779682
Registered company
Share of whole of land/interest: 49/ 200

NEWCASTLE AIRPORT PARTNERSHIP COMPANY 3 PTY LIMITED ACN 163779744
Registered company
Share of whole of land/interest: 51/ 200

NEWCASTLE AIRPORT PARTNERSHIP COMPANY 4 PTY LIMITED ACN 163779806
Registered company
Share of whole of land/interest: 49/ 200

Tenancy: Tenants in Common

CONSIDERATION

The transferor acknowledges receipt of the consideration of $22,000,000.00

ESTATE TRANSFERRED

FEE SIMPLE

The Transferor transfers to the Transferee the Estate specified in this Instrument and acknowledges receipt of any Consideration shown.

SIGNING FOR TRANSFEROR

I certify that:

1. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
2. The Certifier has retained the evidence supporting this Registry Instrument or Document.
3. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to verify the identity of the transferor.

Req:R680379 /Doc:DL AP848329 /Rev:21-Jan-2020 /NSW LRS /Prt:03-Jul-2024 18:06 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit, Williamtown

Party Represented by Subscriber:

NEWCASTLE CITY COUNCIL
PORT STEPHENS COUNCIL

Signed By: Andrew Buchanan
Signer Capacity: Practitioner Certifier
PEXA Signer Number: 50497
Digital Signing Certificate Number: 35470

Signed for Subscriber: PARTNERS OF HWL EBSWORTH LAWYERS ABN 37246549189

HWL EBSWORTH LAWYERS

Subscriber Capacity: Representative Subscriber
PEXA Subscriber Number: 7943
Customer Account Number: 501286
Date: 21/01/2020

SIGNING FOR TRANSFEREE

I certify that:

1. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
2. The Certifier has retained the evidence supporting this Registry Instrument or Document.
3. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to verify the identity of the transferee.

Party Represented by Subscriber:

NEWCASTLE AIRPORT PARTNERSHIP COMPANY 1 PTY LIMITED
NEWCASTLE AIRPORT PARTNERSHIP COMPANY 2 PTY LIMITED
NEWCASTLE AIRPORT PARTNERSHIP COMPANY 3 PTY LIMITED
NEWCASTLE AIRPORT PARTNERSHIP COMPANY 4 PTY LIMITED

Signed By: Andrew Buchanan
Signer Capacity: Practitioner Certifier
PEXA Signer Number: 50497
Digital Signing Certificate Number: 35470

Signed for Subscriber: PARTNERS OF HWL EBSWORTH LAWYERS ABN 37246549189

HWL EBSWORTH LAWYERS

Subscriber Capacity: Representative Subscriber
PEXA Subscriber Number: 7943
Customer Account Number: 501286
Date: 21/01/2020

Req:R680300 /Doc:DL AP848330 /Rev:21-Jan-2020 /NSW LRS /Prt:03-Jul-2024 17:44 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit, Williamtown

System Document Identification

Form Number: 01T-e
Template Number: T_nsw16
ELN Document ID: 547950077
ELN NOS ID: 547950078

TRANSFER

New South Wales
Real Property Act 1900

Land Registry Document Identification

AP848330

Stamp Duty: 9744092-003

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

LODGED BY:

Responsible Subscriber: JENKINS LEGAL SERVICES ABN 20164761540
Address: L5, 77 Hunter ST
Newcastle 2300
Telephone:
PEXA Subscriber Number: 1775
Customer Account Number: 500314L
Document Collection Box: 1W
Client Reference: 680714 (NAPL)

LAND TITLE REFERENCE

11/1036501
3/1036690

TRANSFEROR

NEWCASTLE AIRPORT PARTNERSHIP COMPANY 1 PTY LIMITED ACN 163779646
Registered company

NEWCASTLE AIRPORT PARTNERSHIP COMPANY 2 PTY LIMITED ACN 163779682
Registered company

NEWCASTLE AIRPORT PARTNERSHIP COMPANY 3 PTY LIMITED ACN 163779744
Registered company

NEWCASTLE AIRPORT PARTNERSHIP COMPANY 4 PTY LIMITED ACN 163779806
Registered company

TRANSFEREE

GREATER NEWCASTLE AEROTROPOLIS PTY LTD ACN 629359726
Registered company
Share of whole of land/interest: 51/ 200

GREATER NEWCASTLE AEROTROPOLIS PTY LTD ACN 629359726
Registered company
Share of whole of land/interest: 49/ 200

GREATER NEWCASTLE AEROTROPOLIS PTY LTD ACN 629359726
Registered company
Share of whole of land/interest: 51/ 200

GREATER NEWCASTLE AEROTROPOLIS PTY LTD ACN 629359726
Registered company
Share of whole of land/interest: 49/ 200

Tenancy: Tenants in Common

CONSIDERATION

The transferor acknowledges receipt of the consideration of $22,000,000.00

ESTATE TRANSFERRED

FEE SIMPLE

The Transferor transfers to the Transferee the Estate specified in this Instrument and acknowledges receipt of any Consideration shown.

SIGNING FOR TRANSFEROR

I certify that:

Req:R680300 /Doc:DL AP848330 /Rev:21-Jan-2020 /NSW LRS /Prt:03-Jul-2024 17:44 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:Jeffries Circuit, Williamtown

1. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
2. The Certifier has retained the evidence supporting this Registry Instrument or Document.
3. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to verify the identity of the transferor.

Party Represented by Subscriber:

NEWCASTLE AIRPORT PARTNERSHIP COMPANY 1 PTY LIMITED
NEWCASTLE AIRPORT PARTNERSHIP COMPANY 2 PTY LIMITED
NEWCASTLE AIRPORT PARTNERSHIP COMPANY 3 PTY LIMITED
NEWCASTLE AIRPORT PARTNERSHIP COMPANY 4 PTY LIMITED

Signed By: Andrew Buchanan
Signer Capacity: Practitioner Certifier
PEXA Signer Number: 50497
Digital Signing Certificate Number: 35470

Signed for Subscriber: PARTNERS OF HWL EBSWORTH LAWYERS ABN 37246549189

HWL EBSWORTH LAWYERS

Subscriber Capacity: Representative Subscriber
PEXA Subscriber Number: 7943
Customer Account Number: 501286
Date: 21/01/2020

SIGNING FOR TRANSFEREE

I certify that:

1. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
2. The Certifier has retained the evidence supporting this Registry Instrument or Document.
3. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to verify the identity of the transferee.

Party Represented by Subscriber:

GREATER NEWCASTLE AEROTROPOLIS PTY LTD

Signed By: Andrew Buchanan
Signer Capacity: Practitioner Certifier
PEXA Signer Number: 50497
Digital Signing Certificate Number: 35470

Signed for Subscriber: PARTNERS OF HWL EBSWORTH LAWYERS ABN 37246549189

HWL EBSWORTH LAWYERS

Subscriber Capacity: Representative Subscriber
PEXA Subscriber Number: 7943
Customer Account Number: 501286
Date: 21/01/2020

LAND REGISTRY SERVICES

Title Search

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 11/1036501

SEARCH DATE	TIME	EDITION NO	DATE
3/7/2024	5:41 PM	4	17/4/2023

LAND

LOT 11 IN DEPOSITED PLAN 1036501
AT WILLIAMTOWN
LOCAL GOVERNMENT AREA PORT STEPHENS
PARISH OF STOCKTON COUNTY OF GLOUCESTER
PARISH OF STOWELL COUNTY OF GLOUCESTER
TITLE DIAGRAM DP1036501

FIRST SCHEDULE

GREATER NEWCASTLE AEROTROPOLIS PTY LTD
IN 51/200 SHARE
GREATER NEWCASTLE AEROTROPOLIS PTY LTD
IN 49/200 SHARE
GREATER NEWCASTLE AEROTROPOLIS PTY LTD
IN 51/200 SHARE
GREATER NEWCASTLE AEROTROPOLIS PTY LTD
IN 49/200 SHARE
AS TENANTS IN COMMON (T AP848330)

SECOND SCHEDULE (15 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 LAND EXCLUDES THE ROAD(S) SHOWN IN THE TITLE DIAGRAM
3 D148706 EASEMENT FOR SEWER EFFLUENT AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 G173362 EASEMENT FOR SEWER EFFLUENT AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
5 H280282 COVENANT AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 DP734906 RESTRICTION(S) ON THE USE OF LAND AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
7 DP854649 EASEMENT TO DRAIN WATER AND MAINTENANCE VARIABLE WIDTH AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
8 DP1036501 RIGHT OF CARRIAGEWAY VARIABLE WIDTH AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
9 DP1187948 EASEMENT FOR PIPELINE 4 METRE(S) WIDE REFERRED TO AND NUMBERED (1) IN THE S.88B INSTRUMENT AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1187948
10 DP1187948 EASEMENT FOR WASTE WATER PUMPING STATION VARIABLE WIDTH AFFECTING THE PART(S) SHOWN SO BURDENED IN

Does not affect subject site

Does not affect subject site

END OF PAGE 1 - CONTINUED OVER

FOLIO: 11/1036501 PAGE 2

SECOND SCHEDULE (15 NOTIFICATIONS) (CONTINUED)

DP1187948

11 DP1187948 EASEMENT FOR ELECTRICITY AND OTHER PURPOSES VARIABLE WIDTH AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1187948

12 DP1187948 EASEMENT FOR ACCESS VARIABLE WIDTH AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1187948

13 DP1187948 EASEMENT FOR PIPELINE 4 METRE(S) WIDE REFERRED TO AND NUMBERED (7) IN THE S.88B INSTRUMENT AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1187948

Does not affect subject site

* 14 AQ548484 CAVEAT BY ERIC ALPHA OPERATOR CORPORATION 2 PTY LIMITED, ERIC ALPHA OPERATOR CORPORATION 1 PTY LIMITED, BLUE OP PARTNER PTY LIMITED, ERIC ALPHA OPERATOR CORPORATION 3 PTY LIMITED & ERIC ALPHA OPERATOR CORPORATION 4 PTY LIMITED

* AS972528 CAVEATOR CONSENTED

15 AS972528 MORTGAGE TO CBA CORPORATE SERVICES (NSW) PTY LTD

NOTATIONS

UNREGISTERED DEALINGS: PE DP1295775.

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

Copyright © Office of the Registrar-General 2024

Received: 03/07/2024 17:41:23

Appendix C: Section 10.7 Certificate

PORT STEPHENS COUNCIL

ABN 16 744 377 876

116 Adelaide Street, Raymond Terrace NSW 2324
PO Box 42, Raymond Terrace NSW 2324
Ph: (02) 4988 0255 Fax: (02) 4987 3612
Email: plancert@portstephens.nsw.gov.au
http://www.portstephens.nsw.gov.au

PLANNING CERTIFICATE PURSUANT TO SECTION 10.7 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

APPLICANT DETAILS:

Ferguson
144 Parry Street, Newcastle West 2302

Reference: **S20283**

Issue Date: **27/06/2024**

PROPERTY DESCRIPTION:

38 Cabbage Tree Road WILLIAMTOWN NSW 2318 Parcel No: 36504
LOT: 11 DP: 1036501

Disclaimer

Information contained in this certificate relates only to the land for which this certificate is issued on the day it is issued. This information is provided in good faith and Council shall not incur any liability in respect of any such advice. Council relies on state agencies for advice and accordingly can only provide that information in accordance with the advice. Verification of the currency of agency advice should occur. For further information, please contact Council by telephoning (02) 4980 0255 or email plancert@portstephens.nsw.gov.au.

Title Information

Title information shown on this Planning Certificate is provided from Council's records and may not conform to information shown on the current Certificate of Title. Easements, restrictions as to user, rights of way and other similar information shown on the title of the land are not provided on this planning certificate.

Inspection of the land

The Council has made no inspection of the land for the purposes of this Planning Certificate.

PART A: INFORMATION PROVIDED UNDER SECTION 10.7(2)

Matters contained in this certificate apply only to the land on the date of issue.

1. Names of relevant planning instruments and development control plans

(1) The name of each environmental planning instrument and development control plan that applies to the development on the land.

State Environmental Planning Policies

The relevant chapters of each State Environmental Planning Policy that apply to the land are listed below:

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
All chapters

State Environmental Planning Policy (Housing) 2021
All chapters

State Environmental Planning Policy (Sustainable Building) 2022
All chapters

State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development
All chapters

State Environmental Planning Policy (Planning Systems) 2021
Chapter 2 State and regional development
Chapter 4 Concurrences and consents

State Environmental Planning Policy (Precincts - Regional) 2021
Chapter 2 State significant precincts

State Environmental Planning Policy (Primary Production) 2021
Chapter 2 Primary production and rural development

State Environmental Planning Policy (Resources and Energy) 2021
Chapter 2 Mining, petroleum production and extractive industries

State Environmental Planning Policy (Transport and Infrastructure) 2021
Chapter 2 Infrastructure
Chapter 3 Educational establishments and childcare facilities

State Environmental Planning Policy (Resilience and Hazards) 2021
Chapter 3 Hazardous and offensive development
Chapter 4 Remediation of land

State Environmental Planning Policy (Biodiversity and Conservation) 2021
Chapter 2 Vegetation in non-rural areas 2017

Chapter 3 Koala habitat protection 2020

Chapter 4 Koala habitat protection 2021

Local Environmental Plan
Port Stephens Local Environmental Plan 2013

Development Control Plans
The name of each development control plan that applies to the carrying out of development on the land.

Port Stephens Development Control Plan 2014.

(2) The name of each proposed environmental planning instrument and draft development control plan, which is or has been subject to community consultation or public exhibition under the Act, that will apply to the carrying out of development on the land (unless it has been more than 3 years since the end of the public exhibition period or if the Secretary has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).

Draft State Environmental Planning Policies
No draft State Environmental Planning Policies affect the site the subject of this Certificate.

Draft Local Environmental Plan
Coastal Risk Planning Clause Planning Proposal (PP-2023-2568)

Administrative Planning Proposal (PP-2023-2705)

Draft Development Control Plan
Development Control Plan 2014 - Chapter B1 Tree management and B2 Flora and Fauna

2. Zoning and land use under relevant planning instruments

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a State Environmental Planning Policy or proposed State Environmental Planning Policy).

a) The identity of the zone –
B7 Business Park
The land is zoned B7 Business Park under the provisions of Part 2 in the Port Stephens Local Environmental Plan 2013.

b) The purposes for which development in the zone –

ITEM 2 - May be carried out without development consent
Nil

ITEM 3 - May be carried out with development consent
Air transport facilities; Airstrips; Business premises; Car parks; Centre-based child care facilities; Environmental facilities; Environmental protection works; Flood mitigation works; Freight transport facilities; General industries; Helipads; Highway service centres; Hotel and motel accommodation; Industrial training facilities; Information and education facilities; Jetties; Kiosks; Light industries; Neighbourhood shops; Office premises; Oyster aquaculture; Passenger transport facilities; Public administration buildings; Recreation areas: Recreation facilities (indoor); Recreation facilities (outdoor); Respite day care centres; Research stations; Restaurants or cafes; Restricted premises; Roads; Service stations; Signage; Tank-based aquaculture; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Water reticulation systems; Wholesale supplies.

ITEM 4 - Is prohibited
Pond-based aquaculture; Any development not specified in item 2 or 3

NOTE: The land is identified as “Land subject to Williamtown Special Activation Precinct Process” and was not subject to the employment zones reform that commenced on 26 April 2023. As a result, until 26 April 2025 and to the extent the Port Stephens Local Environmental Plan applies to the subject land, this Plan is taken to include the references to business and industrial zones that were in this Plan immediately before 26 April 2023. Further information can be obtained from Council's Strategy & Environment Section on 4988 0455 or email plancert@portstephens.nsw.gov.au.

a) The identity of the zone –

RU2 Rural Landscape

The land is zoned RU2 Rural Landscape under the provisions of Part 2 in the Port Stephens Local Environmental Plan 2013.

b) The purposes for which development in the zone –

ITEM 2 - May be carried out without development consent

Extensive agriculture; Home occupations; Intensive plant agriculture

ITEM 3 - May be carried out with development consent

Agriculture; Airstrips; Animal boarding or training establishments; Aquaculture; Artisan food and drink industries; Boat launching ramps; Boat sheds; Building identification signs; Business identification signs; Camping grounds; Cellar door premises; Cemeteries; Centre-based child care facilities; Charter and tourism boating facilities; Community facilities; Correctional centres; Crematoria; Dual occupancies; Dwelling houses; Eco-tourist facilities; Environmental facilities; Environmental protection works; Extractive industries; Farm buildings; Flood mitigation works; Forestry; Function centres; Garden centres; Group homes; Helipads; High technology industries; Home-based child care; Home businesses; Home industries; Information and education facilities; Jetties; Landscaping material supplies; Plant nurseries; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Research stations; Respite day care centres; Restaurants or cafes; Roads; Roadside stalls; Rural industries; Rural supplies; Secondary dwellings; Tourist and visitor accommodation; Turf farming; Veterinary hospitals; Water recreation structures; Water supply systems

ITEM 4 - Is prohibited

Backpackers’ accommodation; Hotel or motel accommodation; Serviced apartments; Any other development not specified in item 2 or 3

c) Additional permitted uses

No environmental planning instrument applies additional permitted use provisions to this land.

d) Development standards for the erection of a dwelling house

Clause 4.2B in the Port Stephens Local Environmental Plan 2013 includes a development standard that fixes a minimum land dimension for the erection of a dwelling-house. This clause applies to the land. The minimum lot size for the erection of a dwelling-house is identified on the Lot Size Map.

e) Whether the land is an area of oustanding biodiversity value
No, the land is not identified in an area of oustanding biodiversity value under the *Biodiversity Conservation Act 2016.*

f) Whether the land is in a conservation area
The land is not located within a heritage conservation area under the Port Stephens Local Environmental Plan 2013.

g) Whether an item of environmental heritage is located on the land
The land is not identified as containing an item of environmental heritage significance under the provisions in Port Stephens Local Environmental Plan 2013.

3. Contributions Plans

(1) The name of each contributions plan applying to the land

Port Stephens Local Infrastructure Contributions Plan 2020

(2) The land is not in a special contributions area under the Act, Division 7.1.

Note. These documents specify development contributions required towards the cost of providing additional community services or facilities if a property is developed. They are available on request from Council or can be viewed www.portstephens.nsw.gov.au.

4. Complying Development

(1) Whether or not the land to which the certificate relates is land on which complying development may be carried out under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*?

Housing Code
Complying development under the General Housing Code MAY NOT be carried out on the land.

Inland Code
Complying development under the Inland Code MAY NOT be carried out on the land.

Rural Housing Code
Complying development under the Rural Housing Code MAY NOT be carried out on the land.

Low Rise Housing Diversity Code
Complying development under the Low Rise Medium Density Housing Code MAY NOT be carried out on the land.

Greenfield Housing Code
Complying development under the Greenfield Housing Code MAY NOT be carried out on the land.

Housing Alterations Code
Complying development under the Housing Alterations Code MAY NOT be carried out on the land.

General Development Code

Complying development under the General Development Code MAY NOT be carried out on the land.

Industrial and Business Alterations Code
Complying development under the Commercial and Industrial alterations Code MAY be carried out on the land.

Industrial and Business Buildings Code
Complying development under the Commercial and Industrial (new buildings and additions) code MAY NOT be carried out on the land.

Container Recycling Facilities Code
Complying development under the Container Recycling Facilities code MAY be carried out on the land.

Subdivisions Code
Complying development under the Subdivision Code MAY be carried out on the land.

Demolition Code
Complying development under the Demolition Code MAY be carried out on the land.

Fire Safety Code
Complying development under the Fire Safety Code MAY be carried out on the land.

(2) If complying development may not be carried on the land under the above codes, it is because of the provisions of Clauses 1.17A(1)(c) to (e), (2), (3), or (4), 1.18(1)(c3) or 1.19 of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.
Council does not have sufficient information to ascertain the reason why complying development may not be carried out under the Policy. Contact Councils duty officer on (02) 4988 0255 for any enquiries relating to the reason why complying development may not be carried out on the land.

(3) If the land is a lot to which the Housing Code, Rural Housing Code, Low Rise Medium Density Housing Code, Greenfield Housing Code, Housing Alterations Code, General Development Code, or Commercial and Industrial (New Buildings and Additions) Code (within the meaning of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* applies, complying development may be carried out on any part of the lot that is not affected by the provisions of clauses 1.17A(1)(c) to (e), (2), (3) or (4), 1.18(1)(c3) or 1.19 of that Policy.

(4) There are no variations to the exempt development codes under clause 1.12 of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* in relation to the land.

5. Exempt development

(1) Whether the land is on land which exempt development may be carried out under each of the exempt development codes under the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.*

Division 1 General Code

Exempt development under the General Exempt Development Code MAY be carried out on the land.

Division 2 Advertising and Signage Code
Exempt development under the Advertising and Signage Code MAY be carried out on the land.

Division 3 Temporary Uses and Structures Code
Exempt development under the Temporary Uses and Structures Code MAY be carried out on the land.

Note: Clause 1.16(1)(c) specifies that exempt development must not be carried out on land that is, or on which there is, an item that is listed on the State Heritage Register under the *Heritage Act 1977*, or that is subject to an interim heritage order under that Act
Council does not have sufficient information to ascertain whether the land is listed on the State Heritage Register under the *Heritage Act 1977*, or subject to an interim heritage order under that Act.

Note: If the land is a lot to which the General Code, Advertising and Signage Code, and Temporary Uses Code (within the meaning of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008)* applies, exempt development may be carried out on any part of the lot that is not affected by the provisions of clause 1.16(1)(b1)–(d) or 1.16A of that Polcy.

6. Affected building notices and building product rectification orders

(1) Whether or not the council is aware that –

a) There is any affected building notice in force in relation to the land

There is no affected building notice in force in respect of the land.

b) A building product rectification order is in force in relation to the land that has not been fully complied with

No

c) Any notice of intention to make a building product rectification order has been given in respect of the land and is outstanding.

No

Note: In this section, *affected building notice* has the same meaning as in the *Building Products (Safety) Act 2017*, Part 4. *Building product rectification order* has the same meaning as in the *Building Products (Safety) Act 2017.*

7. Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in section 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in Section 3.15 of the *Environmental Planning and Assessment Act 1979 (the Act).*

The Port Stephens Local Environmental Plan 2013 DOES NOT provide for the acquisition of this land, or part thereof, by a public authority as referred to in Section 3.15 of the Act.

8. Road widening and road realignment

Council's records indicate that the land the subject of this Certificate is not affected by any road widening or road realignment under:- (a) Section 25 of the Roads Act 1993; or (b) any environmental planning instrument; or (c) any resolution of the council.

9. Flood related development controls information

The land or part of the land is within the flood planning area and subject to flood related development controls. If you wish to apply for a Flood Certificate, please refer to Council's Flood Certificate Information on our website at www.portstephens.nsw.gov.au

The land or part of the land is between the flood planning area and the probable maximum flood and is subject to flood related development controls. If you wish to apply for a Flood Certificate, please refer to Council's Flood Certificate Information on our website at www.portstephens.nsw.gov.au

10. Council and other public authority policies on hazard risk restrictions

Whether any of the land is affected by an adopted policy that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulfate soils, contamination, aircraft noise, salinity, coastal hazards, sea level rise or another risk (other than flooding or bushfire).

Council HAS NOT adopted a policy or been notified of any adopted policy of another public authority, that restricts development on the land because of the likelihood of landslip, tidal inundation, subsidence, contamination, salinity, coastal hazards or sea level rise.

Council DOES HAVE adopted policies or has been notified of adopted policies of another public authority on matters relating to the risk of acid sulfate soils and aircraft noise.

The information below identifies any adopted policies that apply to the land:

Clause 7.1 Acid Sulfate Soils of the Port Stephens Local Environmental Plan 2013 applies to the land. Acid sulfate soil mapping can be viewed on the NSW Department of Planning and Environment Spatial Viewer.

Council's records indicate that the land subject of this certificate is wholly or partly affected by RAAF Base Williamtown and Salt Ash Air Weapons Range 2025 Australian Noise Exposure Forecast (10 August 2011)(the 2025 ANEF Map).

Certain development may be constrained in accordance with the relevant provisions of Australian Standard 2021-2015 Acoustics-Aircraft noise intrusion-Building siting and construction, the Port Stephens Local Environmental Plan 2013 and the Port Stephens Development Control Plan 2014.

Copies of the 2025 ANEF Map can be viewed on the website of the Commonwealth Department of Defence.

Further information can be obtained from the Port Stephens Council Strategy and Environment Section and you are advised to make further enquiries.

NOTE: The absence of a council policy restricting the development of the land by reason of a particular natural hazard does not mean that the risk from that hazard is non-existent.

11. Bush fire prone land

Whether or not some, all, or none of the land is bush fire prone land.

Part of the land is identified as bush fire prone land in Council's records. Further details of any applicable restrictions on development of the land may be obtained on application to Council. For further information, please contact Council's Duty Officer by telephoning 49880115.

12. Loose-fill asbestos insulation

Whether or not the land includes any residential premises (as defined in Division 1A of Part 8 of the *Home Building Act 1989*) that are listed on a register of residential premises that contain or have contained loose-fill asbestos insulation.

No, the land does not include any residential dwelling identified on the Loose-Fill Asbestos Insulation Register as containing loose-fill asbestos ceiling insulation. For further information, please contact Department of Fair Trading by telephoning 13 77 88 or go to their website at www.fairtrading.nsw.gov.au.

13. Mine Subsidence

Whether or not the land is proclaimed to be a mine subsidence district, within the meaning of the the *Coal Mine Subsidence Compensation Act 2017*.

No, the land is not within a proclaimed or declared mine subsidence district.

14. Paper subdivison information

(1) The name of any development plan adopted by a relevant authority that applies to the land or is proposed to be subject to a consent ballot.
(2) The date of any subdivision order that applies to the land

Not applicable.

15. Property vegetation plans

If the land is land in relation to which a property vegetation plan is approved under Part 4 of the *Native Vegetation Act 2003*, a statement to that effect, but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act.

No, Council has not been notified of any property vegetation plans under the Native Vegetation Act 2003 that affect the land to which this certificate applies.

16. Biodiversity stewardship sites

If the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016*, a statement to that effect ,but only if the council has been notified of the existence of the agreement by the Biodiversity Conservation Trust.

No, Council has not been notified that the land is a biodiversity stewardship site.

Note. Biodiversity stewardship agreements include biobanking agreements under the *Threatened Species Conservation Act 1995*, Part 7A that are taken to be biodiversity stewardship agreements under the *Biodiversity Conservation Act 2016*, Part 5.

17. Biodiversity certified land

If the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*, a statement to that effect.

No, Council has not been notified that the land is biodiversity certified land.

Note. Biodiversity certified land includes land certified under the *Threatened Species Conservation Act 1995*, Part 7AA that is taken to be certified under the *Biodiversity Conservation Act 2016*, Part 8.

18. Orders under *Trees (Disputes Between Neighbours) Act 2006*

Whether an order has been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land (but only if the council has been notified of the order).

The land is NOT affected by an order under the Trees (Dispute Between Neighbours) Act 2006 (of which Council is aware).

19. Annual charges under *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works

If the *Coastal Management Act 2016* applies to the council, whether the owner, or a previous owner, of the land has given written consent to the land being subject to annual charges under the *Local Government Act 1993*, section 496B, for coastal protection services that relate to existing coastal protection works.

No, the land is not subject to annual charges under section 496B of the *Local Government Act 1993* for coastal protection services relating to existing coastal protection works to which the owner (or any previous owner) of the land has consented.

Note. "existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the *Local Government Act 1993.*

20. Western Sydney Aerotropolis

Not applicable to the Port Stephens Local Government Area.

21. Development consent conditions for seniors housing

If *State Environmental Planning Policy (Housing) 2021*, Chapter 3, Part 5 applies to the land, any conditions of a development consent granted after 11 October 2007 in relation to the land that are of the kind set out in that Policy, section 88(2).

Council is unable to provide site-specific information on any conditions of a development consent granted after 11 October 2007 in relation to Clause 88(2) of the *State Environmental Planning Policy (Housing) 2021*, that may apply to the land.

22. Site compatibility certificates and development consent conditions for affordable rental housing

(1) Whether there is a current site compatibility certificate under *State Environmental Planning Policy (Housing) 2021,* or a former site compatibility certificate (of which Council ia aware) in relation to proposed development on the land.

Council is not aware of a current site compatibility certificate issued under *State Environmental Planning Policy (Housing) 2021.*

(2) If State *Environmental Planning Policy (Housing) 2021*, Chapter 2, Part 2, Division 1 or 5 applies to the land, a statement setting out terms of a kind referred to in the Policy, clause 21(1) or 40(1).

The land is not affected by any terms of a kind (of which Council is aware) referred to in Chapter 2, Part 2, Division 1 or clause 21(1) or 40(1) of *State Environmental Planning Policy (Housing) 2021* in respect of development on the land.

23. Water or sewerage services

If water or sewerage services are, or are to be, provided to the land under the *Water Industry Competition Act 2006*.

No, Council is not aware that water or sewerage services are, or are to be, provided under the *Water Industry Competition Act 2006*.

Additional matters

Note. The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

(a) Whether or not the land to which the certificate relates is significantly contaminated land within the meaning of that Act.
(b) Whether or not the land to which the certificate relates is subject to a management order within the meaning of that Act.
(c) Whether or not the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of the Act.
(d) Whether or not the land to which this certificate relates is subject to an ongoing maintenance order within the meaning of that Act.
(e) Whether or not the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such statement has been provided at any time to the local authority issuing the certificate.

There are no prescribed matters under section 59(2) of the Contaminated Land Management Act 1997 to be disclosed.

PART B: INFORMATION PROVIDED UNDER SECTION 10.7(5)

This information is provided in accordance with section 10.7(5) of the *Environmental Planning and Assessment Act 1979*. Section 10.7(6) states that Council shall not incur any liability in respect of advice provided in good faith pursuant to section 10.7(5) of the Act. If this information is to be relied upon, it should be independently checked.

Heritage

Port Stephens Council must take into consideration the likely effect of proposed development on the heritage significance of a heritage item, heritage conservation area, archaeological site or potential archaeological site, and on its setting, when determining an application for consent to carry out development on land in its vicinity. Please contact Council's Development Assessment and Compliance Section by telephoning 49880255.

Aboriginal Archaeology
When determining a development application on known or potential archaeological sites of both Aboriginal and non-Aboriginal heritage significance, Port Stephens Council must consider an assessment of how the proposed development would affect the conservation of the site and any relic known or reasonably likely to be located at the site. Please contact Council's Development Assessment and Compliance Section on 49880255 for more information.

Aircraft Noise
All areas of the Port Stephens Local Government area may be affected by aircraft noise from time to time. RAAF Base Williamtown – Newcastle Airport and Salt Ash Air Weapons Range are located within the Port Stephens Local Government Area. Further information can be obtained from the Commonwealth Department of Defence website and from the Port Stephens Council Strategy and Environment Section and you are advised to make further enquiries.

Drinking Water Catchment
The land, or part thereof, is located within a drinking water catchment area as identified in Port Stephens Local Environmental Plan 2013. The catchment boundary is identified on the Drinking Water Catchment Map in Local Environmental Plan 2013 and clause 7.8 in the Local Environmental Plan 2013 will apply to the land.

Koala Habitat
Parts of the Port Stephens Local government Area are affected by Koala Habitat and subject to the Port Stephens Comprehensive Koala Plan of Management 2002 made under State Environmental Planning Proposal No. 44. Further information can be obtained from Council's Strategy & Environment Section on 49880326 or email plancert@portstephens.nsw.gov.au.

Invasive Species
Parts of the Port Stephens Local Government Area contain plants that pose a risk according to the *Biosecurity Act 2015* which may restrict the use of the land. For further information please contact Council's Strategy & Environment Section on 4988 0326 or email weeds@portstephens.nsw.gov.au

RAAF Base Williamtown PFAS Management Area
The land is within the Williamtown RAAF Base Per- and Poly-Fluoroalkyl Substances (PFAS) Management Area. The Department of Defence is undertaking a long-term environmental investigation and assessment of the Williamtown RAAF Base site and surrounding areas as relates to PFAS contamination.

The NSW Government recommends that residents living inside the Williamtown RAAF Base PFAS Management Area follow precautionary measures to minimise their exposure to PFAS chemicals originating from the RAAF Base. Details of the current precautionary advice is available from the NSW EPA at www.epa.nsw.gov.au or by phoning 131 555.

Wetlands
The land or part thereof, is identified as containing a wetland in Port Stephens Local Environmental Plan 2013. The wetland is identified on the wetland map in Port Stephens Local Environmental Plan 2013 and Clause 7.9 of Local Environmental Plan 2013 and applied to the land.

Coastal Hazards
Coastal Hazards including coastal erosion, tidal inundation, coastal inundation and dune transgression affect parts of the Port Stephens Local Government Area. The land has been

identified in the Port Stephens Stage 2 Coastal Hazard Study as having a current or future exposure to a coastal hazard. To further assist in identifying and managing coastal hazards in Coastal Zones Port Stephens Council is preparing a Coastal Management Program. Further information on the Port Stephens Coastal Management Program can be obtained on Council's website or from Council's Strategy and Environment Section on 4988 0255 or email cmp@portstephens.nsw.gov.au.

Development consents relating to the land
Please contact Customer Relations on (02) 4988 0255, for any enquiries regarding development consent over the land in the past 5 years.

Issued by Port Stephens Council Development Services Group,
on behalf of **Tim Crosdale, General Manager**

Appendix D: Data Validation

Appendix D: Quality Assurance / Quality Control

The data quality assurance and control (QA/QC) procedures adopted by Senversa provide a consistent approach to evaluation of whether the data quality objectives (DQOs) required by the project have been achieved. The process focuses on assessment of the useability of the data in terms of accuracy and reliability in forming conclusions on the condition of the element of the environment being investigated. The approach is generally based on guidance from the following sources:

- Australian Standard (AS) 4482.1-2005: Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds.
- National Environment Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Amendment Measure No. 1 2013 (NEPM), Schedule B2: Guideline on Site Characterisation.
- NEPC – National Environment Protection (Assessment of Site Contamination) Amendment Measure No. 1 2013 (ASC NEPM), Schedule B3: Guideline on Laboratory Analysis of Potentially Contaminated Soils.
- United States Environmental Protection Agency (US EPA) – Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4).
- US EPA – Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8).

Quality Assurance Procedure

The following data quality objectives, measures and acceptance criteria were adopted to verify compliance with the planned QA procedures:

Quality Assurance Process	Data Quality Element	Objectives and Measure	Acceptance Criteria
Standard Procedures	Comparability, Reproducibility, Representativeness	Standard field sampling procedures and forms used.	No deviation from standard procedure and forms used.
Equipment Calibration	Accuracy	All equipment calibrated in accordance with manufacturers specifications.	All equipment calibrated in accordance with manufacturers specifications.
Testing Method Accreditation	Accuracy and Comparability	NATA accredited methods used for all analyses determined.	Primary and secondary laboratories to use NATA accredited methods for all analytes determined.
Quality Control Sampling Frequency	Precision and Repeatability	Field QC sampling frequency in accordance with AS4482.1-2005.	Field Duplicates – ≥ 1 in 20 primary samples. Secondary Duplicates – ≥ 1 in 20 primary samples. Rinsate Blanks – ≥ 1 per day, per matrix per equipment. Trip Blanks – ≥ 1 per esky containing samples for volatile analyses.

Quality Assurance Process	Data Quality Element	Objectives and Measure	Acceptance Criteria
	Accuracy, Precision and Comparability	Laboratory QC analysis frequency in accordance with NEPC (2013), Schedule B3.	Laboratory Duplicates – at least 1 in 10 analyses or one per process batch. Method Blanks – at least 1 per process batch. Surrogate Recoveries – all samples spiked where appropriate (e.g. chromatographic analysis of organics). Laboratory Control Samples – at least 1 per process batch. Matrix Spikes – at least 1 per matrix type per process batch.
Sample Preservation, Handling and Holding Times	Accuracy	Samples appropriately preserved upon collection, stored and transported, and analysed within holding times.	Sample containers, holding times and preservation in accordance laboratory specific method requirements.
Data Management	Accuracy	No errors in data transcription.	Entry of field data verified by peer.
Data Useability	Completeness	Limits of reporting less than adopted beneficial use investigation levels. Sample volumes and analytical methods selected to enable required limits of reporting to be achieved.	Limits of reporting less than investigation levels.

Quality Control Sampling and Analysis

The following DQOs, measures and acceptance criteria were adopted to evaluate the validity of the analytical data produced.

Quality Control Process	Data Quality Element	Objectives and Measure	Acceptance Criteria
Field Duplicate Sampling and Analysis	Precision and Field Repeatability	Field duplicate samples used assess the variability in analyte concentration between samples collected from the sample location and the reproducibility of the laboratory analysis. Where required, resubmission of previously analysed samples for chemicals within their holding times may be undertaken to further assess level of precision.	Analysed for same chemicals as primary sample. RPD[1] <30% of mean concentration where both concentrations >20 x limit of reporting. RPD <50% of mean concentration where higher concentration 10 – 20 x limit of reporting. RPD - No limit where both concentrations < 10 x limit of reporting.
Secondary Duplicate Sampling and Analysis	Accuracy	Results are accurate and free from laboratory error. Secondary duplicate samples sent to a secondary laboratory to assess the accuracy of the analyte concentrations reported by the primary laboratory.	Analysed for same chemicals as primary sample. RPD <30% of mean concentration where both concentrations >20 x limit of reporting. RPD <50% of mean concentration where higher concentration 10 – 20 x limit of reporting. RPD - No limit where both concentrations < 10 x limit of reporting.

[1] Relative Percent Difference (%): Calculated as: (Result No.1 – Result No. 2/Mean Result)*100

Quality Control Process	Data Quality Element	Objectives and Measure	Acceptance Criteria
Field Rinsate Blank Preparation and Analysis	Accuracy and Representativeness	Cross contamination of samples does not occur between sampling locations due to carry-over from sampling equipment. Rinsate blank samples prepared for each sampling procedure. Where possible the rinsate blanks are prepared immediately after sampling locations known to contain concentrations of the chemicals of concern above the limit of quantification and / or before sampling locations where the chemicals being targeted in the laboratory analysis are to be compared to investigation levels near the limit of quantification of the chemical.	Analyte concentrations below limits of reporting.
Trip Blank Sampling and Analysis	Accuracy and Representativeness	Cross contamination between samples does not occur in transit or as an artefact of the sample handling procedure. Trip blank samples prepared by the laboratory which accompany the empty sampling containers from the laboratory to the sampling site and return with the samples to the laboratory to assess whether cross contamination occurs between samples or as an artefact of the sampling procedure.	Analyte concentrations below limits of reporting.
Laboratory QC Analysis	Laboratory Precision and Accuracy	Laboratory duplicates.	As specified by the laboratory.
		Laboratory control spike.	Dynamic recovery limits as specified by the laboratory.
		Certified reference material.	As specified by the laboratory (generally dynamic recovery limits).
		Surrogate recovery.	Dynamic recovery limits as specified by the laboratory.
		Matrix spike recovery.	Recovery 70% – 130% or dynamic recovery limits specified by laboratory. However, note that recovery of phenols is generally significantly lower and a recovery in the range 20% to 130% is considered acceptable by most laboratories.
		Matrix spike recovery duplicate.	RPD < 30%, or as specified by the laboratory.

Data Verification and Validation

The data validation process involved the checking of analytical procedure compliance with acceptance criteria and an assessment of the accuracy and precision of analytical data from the range of quality control indicators generated from both the sampling and analytical programmes.

Field replicate and field blank analytical results relevant to the project are summarised in the following tables:

- **Table D-2:** Soil RPDs.
- **Table D-3:** Water RPDs.
- **Table D-4:** Soil Blank.
- **Table D-5:** Water Blanks.
- **Table D-6:** Trip Spike.

Instances where the data quality acceptance criteria were not met are discussed below.

Frequency of Laboratory Quality Control Samples – Laboratory duplicate samples were not analysed at the expected frequency for PAH/Phenols, Pesticides, PCB and TRH - Semivolatile Fraction in batch ES2417817, or for Dissolved Metals, PAH/Phenols, Pesticides, PCB and TRH - Semivolatile Fraction in batch ES2417394.

Laboratory matrix spike samples were not analysed at the expected frequency for PAH/Phenols, PFAS, Pesticides, PCB and TRH - Semivolatile Fraction in batch ES2417817, or for Dissolved Metals, PAH/Phenols, Pesticides, PCB and TRH - Semivolatile Fraction in batch ES2417394. Within the same batch, the matrix spike recoveries were not determined for some PFOS as the background level was greater than or equal to 4 x the spike level.

Since all other laboratory duplicate and matrix spike results were within acceptable limits, this is not considered to significantly impact on the quality of the data.

Sample Preservation, Handling and Holding Times – All batches were received with ice present. ES2417394 was received at a temperature of 6.2°C, while ES2417817, ES2417818 and ES2421089 were received at a temperature of 8.2°C. The sample temperatures of 8.2°C are not considered to impact the quality of the data as ice was present within the eskies and the temperature is only slightly elevated above the acceptance criteria.

Rinsate and trip blank QC samples for the water matrix within batch ES2417817 were four days overdue for extraction. However, given that these were not part of the primary sample analysis, and that all other rinsate and trip blank samples from other batches were below the laboratory LOR, this is not considered to impact upon the quality of the data.

Quality Control Sample Frequency – Trip spike sample frequencies were not met, however, intra-laboratory duplicate, inter-laboratory duplicate, rinsate and trip blank samples were all within the required frequencies. Given that the frequency of all other QC samples was adequate, and that the recoveries for the trip spike sample were all within acceptable limits, this is not considered to impact upon the quality of the data.

Data Suitability

While a small number of QC results were outside specified acceptance criteria, these were not considered to significantly impact on the quality or representativeness of the data, and majority of results indicated that the precision and accuracy of the data was within acceptable limits. The results are therefore considered to be representative of chemical concentrations in the environmental media sampled at the time of sampling, and to be suitable to be used for their intended purpose in forming conclusions relating to the contamination status of soil and groundwater at the site.

Table D-1 - QAQC Assessment

senversa

Project Name: Targeted Site Investigation **Project Number:** S20283

Sampling Information

		Sample Type	No.	Frequency			DQI Compliant?
Sample Media:	Soil, groundwater						
Date Sampled:	20/05/24, 29/05/24 (soil), 28/05/24 (groundwater)	Primary (soil and groundwater):	33	-			
Days of Sampling:	3	Intra-laboratory duplicate (FD):	5	1 per	6.6	primary samples	Yes
Sampling Personnel:	MF	Inter-laboratory duplicate (FT):	5	1 per	6.6	primary samples	Yes
Primary Laboratory:	ALS	Trip Blank (TB):	3	1 per	1	primary batch	Yes
Secondary Laboratory:	Eurofins	Rinsate Blank (RB):	3	1 per	1	day	Yes
No. Batches:	4 primary, 3 secondary	Trip Spike (TS):	1	1 per	3	primary batch	Substantial
Batch IDs:	ES2417817, ES2417818, ES2417394, ES2421089, 1102875, 1103506, 1103508						

Precision

Intra-laboratory Duplicate (FD) analyses

Analyte Group	Primary ID	Duplicate ID	DQI Compliant?	Comments
Metals, TRH, BTEX, PAH, Phenols, OCP, OPP, PFAS (All CoPC)	MW01_0.0-0.1	QC100	Yes	All RPDs were within acceptable limits.
All CoPC	MW03_0.0-0.1	QC101	Yes	All RPDs were within acceptable limits.
All CoPC	MW02	QC102	Yes	All RPDs were within acceptable limits.
All CoPC	TP02_0.0-0.1	QC103	Yes	All RPDs were within acceptable limits.
All CoPC	TP05_0.0-0.1	QC104	Yes	All RPDs were within acceptable limits.

Inter-laboratory Duplicate (FT) analyses

Analyte Group	Primary ID	Duplicate ID	DQI Compliant?	Comments
All CoPC	MW01_0.0-0.1	QC200	Yes	All RPDs were within acceptable limits.
All CoPC	MW03_0.0-0.1	QC201	Yes	All RPDs were within acceptable limits.
All CoPC	MW02	QC202	Yes	All RPDs were within acceptable limits.
All CoPC	TP02_0.0-0.1	QC203	Yes	All RPDs were within acceptable limits.
All CoPC	TP05_0.0-0.1	QC204	Yes	All RPDs were within acceptable limits.

Laboratory Duplicate (LD) analyses

Analyte Group	Batch No.	DQI Compliant?	Comments
Metals, BTEX	ES2417817	Yes	LD analysed at required frequency and within acceptable limits
PAH/Phenols, PFAS, Pesticides, PCB, TRH	ES2417817	Substantial	LD were not analysed at the expected frequency for PAH/Phenols, Pesticides, PCB and TRH - Semivolatile Fraction for the water matrix.
BTEX, PFAS	ES2417394	Yes	LD analysed at required frequency and within acceptable limits
Dissolved Metals, PAH/Phenols, Pesticides, PCB, TRH	ES2417394	Substantial	LD were not analysed at the expected frequency for Dissolved Metals, PAH/Phenols, Pesticides, PCB and TRH - Semivolatile Fraction for the water matrix.
All CoPC	ES2417818, ES2421089, 1102875, 1103506, 1103508	Yes	LD analysed at required frequency and within acceptable limits

Accuracy

Laboratory Control Sample (LCS) analyses

Batch No.(s)	DQI Compliant?	Comments
ES2417817, ES2417818, ES2417394, ES2421089, 1102875, 1103506, 1103508	Yes	

Surrogate Compound or Reference analyses

Batch No.(s)	DQI Compliant?	Comments
ES2417817, ES2417818, ES2417394, ES2421089, 1102875, 1103506, 1103508	Yes	

Spike Samples

Type	Analyte Group	DQI Compliant?	Comments
Laboratory matrix spike (MS)	PAH/Phenols, PFAS, Pesticides, PCB, TRH	Substantial	ES2417817 - MS were not analysed at the expected frequency for PAH/Phenols, PFAS, Pesticides, PCB and TRH - Semivolatile Fraction for the water matrix. Given that soil is the matrix of interest within this batch, this is not considered to significantly impact upon the quality of the data.
Laboratory matrix spike (MS)	Metals, BTEX	Yes	ES2417817 - Matrix spike recoveries were analysed at required frequency and within acceptable limits
Laboratory matrix spike (MS)	PFAS	Substantial	ES2417394 - MS recovery could not be determined for PFOS in the soil matrix, as the background level was greater than or equal to 4x the spike level. Given that all other MS recoveries for PFAS analytes were within acceptable limits, this is not considered to significantly impact upon the quality of the data.
Laboratory matrix spike (MS)	Dissolved Metals, PAH/Phenols, Pesticides, PCB, TRH	Substantial	ES2417394 - MS were not analysed at the expected frequency for Dissolved Metals, PAH/Phenols, Pesticides, PCB and TRH - Semivolatile Fraction for the water matrix.
Laboratory matrix spike (MS)	BTEX	Yes	ES2417394 - Matrix spike recoveries were analysed at required frequency and within acceptable limits
Laboratory matrix spike (MS)	All CoPC	Yes	ES2417818, ES2421089, 1102875, 1103506, 1103508 - MS analysed at required frequency and within acceptable limits.
Trip Spike (TS)	BTEXN	Yes	All trip spike results were within acceptable recovery limits.

Blank Samples

Type	Analyte Group	DQI Compliant?	Comments
Laboratory Blank (LB):	All CoPC	Yes	
Trip Blank (TB):	All CoPC	Yes	See **Table E-4** and **Table E-5**
Rinsate Blank (RB):	All CoPC	Yes	See **Table E-4** and **Table E-5**

Table D-1 - QAQC Assessment

senversa

Project Name:	Targeted Site Investigation		**Project Number:**	S20283

Sampling Information

		Sample Type	No.	Frequency			DQI Compliant?
Sample Media:	Soil, groundwater	Primary (soil and groundwater):	33	-			
Date Sampled:	20/05/24, 29/05/24 (soil), 28/05/24 (groundwater)	Intra-laboratory duplicate (FD):	5	1 per	6.6	primary samples	Yes
Days of Sampling:	3	Inter-laboratory duplicate (FT):	5	1 per	6.6	primary samples	Yes
Sampling Personnel:	MF	Trip Blank (TB):	3	1 per	1	primary batch	Yes
Primary Laboratory:	ALS	Rinsate Blank (RB):	3	1 per	1	day	Yes
Secondary Laboratory:	Eurofins	Trip Spike (TS):	1	1 per	3	primary batch	Substantial
No. Batches:	4 primary, 3 secondary						
Batch IDs:	ES2417817, ES2417818, ES2417394, ES2421089, 1102875, 1103506, 1103508						

Field equipment calibration

Equipment	Calibrated?	Record?	Equipment	Calibrated?	Record?
MultiRAE Gas Detector	Yes	Yes	Water Quality Meter	Yes	Yes
Interface Probe	Yes	Yes	Peristaltic Pump	Yes	Yes

Represent-ativeness

	DQI Compliant?	Comments
Appropriate & standard sampling methods used for media/CoPC?	Yes	
Appropriate decontamination procedures carried out?	Yes	
Samples collected in appropriate containers / preservatives?	Yes	
Samples received at appropriate temperature / or with ice present?	Substantial	All batches were received with ice present. ES2417394 was received at 6.2°C, while ES2417817, ES2417818 and ES2421089 were received at 8.2°C. The sample temperatures of 8.2°C are not considered to impact the quality of the data as ice was present within the eskies and the temperature is only slightly elevated above the acceptance criteria.
Samples extracted / analysed within holding times?	Substantial	Rinsate and trip blank QC samples for the water matrix within batch ES2417817 were 4 days overdue for extraction. However, given that these were not part of the primary sample analysis, and that all other rinsate and trip blank samples from other batches were below the laboratory LOR, this is not considered to impact upon the quality of the data.
Samples analysed using appropriate NATA accredited methods?	Yes	

Compar-ability

	DQI Compliant?	Comments
Consistent sampling methods used?	Yes	
Sampler(s) appropriately trained?	Yes	
Consistent site conditions and field scientist(s)?	Yes	
Consistent analytical methods used?	Yes	

Completeness

	DQI Compliant?	Comments
Field records / logs complete and retained?	Yes	
Frequency of QC samples adequate per sampling plan?	Substantial	There were minor deviations in frequencies of trip spike samples (one trip spike was analysed compared to the required three). However, given that the frequency of all other QC samples was adequate, and that the recoveries for the trip spike sample were all within acceptable limits, this is not considered to impact upon the quality of the data.
Requested analyses completed per sampling plan?	Yes	
Appropriate PQLs? (relative to adopted criteria; available)	Yes	
Chain-of-custody forms complete and correct?	Yes	
QC check of data tables (against field records / laboratory reports)?	Yes	

Data Use Suitability

	Yes / No	
Data from critical samples considered of suitable quality?	Yes	
Data considered suitable for the objective of the assessment?	Yes	

Overall Comments: While a small number of QC results were outside specified acceptance criteria, these were not considered to significantly impact on the quality or representativeness of the data, and majority of results indicated that the precision and accuracy of the data was within acceptable limits. The results are therefore considered to be representative of chemical concentrations in the environmental media sampled at the time of sampling, and to be suitable to be used for their intended purpose in forming conclusions relating to the contamination status of soil and groundwater at the site.

Performed By:	Megan Ferguson	Checked By:	
Date:	12/07/2024	Date:	

Targeted Site Investigation - PEW
BAE Systems Australia - Williamtown Facilities Expansion
Built
S20283

Table D-2: Soil RPDs

		Location Code	MW01	MW01		MW01	MW01		MW03	MW03		MW03	MW03		TP02	TP02		TP02	TP02
		Field ID	MW01_0.0-0.1	QC100		MW01_0.0-0.1	QC200		MW03_0.0-0.1	QC101		MW03_0.0-0.1	QC201		TP02_0.0-0.1	QC103		TP02_0.0-0.1	QC203
		Date	20/05/2024	20/05/2024		20/05/2024	20/05/2024		20/05/2024	20/05/2024		20/05/2024	20/05/2024		29/05/2024	29/05/2024		29/05/2024	29/05/2024
		Sample Type	Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D
		Lab Report No.	ES2417817	ES2417817	RPD	ES2417817	1103508	RPD	ES2417817	ES2417817	RPD	ES2417817	1103508	RPD	ES2417818	ES2417818	RPD	ES2417818	1103506
	Unit	LOR																	
Metals																			
Arsenic	mg/kg	2	<5	<5	0	<5	<2	0	<5	-	-	<5	-	-	<5	<5	0	<5	<2
Cadmium	mg/kg	0.4	<1	<1	0	<1	<0.4	0	<1	-	-	<1	-	-	<1	<1	0	<1	<0.4
Chromium	mg/kg	2	15	17	12	15	18	18	9	-	-	9	-	-	11	10	10	11	14
Copper	mg/kg	5	15	14	7	15	14	7	9	-	-	9	-	-	10	8	22	10	9.6
Lead	mg/kg	5	<5	<5	0	<5	<5	0	6	-	-	6	-	-	6	6	0	6	6.5
Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	-	-	<0.1	-	-	<0.1	<0.1	0	<0.1	<0.1
Nickel	mg/kg	2	11	12	9	11	11	0	4	-	-	4	-	-	4	4	0	4	5.4
Zinc	mg/kg	5	34	35	3	34	38	11	34	-	-	34	-	-	35	31	12	35	44
BTEX																			
Benzene	mg/kg	0.1	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	-	-	<0.2	-	-	<0.2	<0.2	0	<0.2	<0.1
Toluene	mg/kg	0.1	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.1
Ethylbenzene	mg/kg	0.1	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.1
Xylene (m & p)	mg/kg	0.2	<0.5	<0.5	0	<0.5	<0.2	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.2
Xylene (o)	mg/kg	0.1	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.1
Total Xylene	mg/kg	0.3	<0.5	<0.5	0	<0.5	<0.3	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.3
Total BTEX	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	-	-	<0.2	-	-	<0.2	<0.2	0	<0.2	-
Total Petroleum Hydrocarbons																			
C6-C9 Fraction	mg/kg	10	<10	<10	0	<10	<20	0	<10	-	-	<10	-	-	<10	<10	0	<10	<20
C10-C14 Fraction	mg/kg	20	<50	<50	0	<50	<20	0	<50	-	-	<50	-	-	<50	<50	0	<50	<20
C15-C28 Fraction	mg/kg	50	<100	<100	0	<100	<50	0	<100	-	-	<100	-	-	<100	<100	0	<100	<50
C29-C36 Fraction	mg/kg	50	<100	<100	0	<100	<50	0	<100	-	-	<100	-	-	<100	<100	0	<100	<50
C10-C36 Fraction (Sum)	mg/kg	50	<50	<50	0	<50	<50	0	<50	-	-	<50	-	-	<50	<50	0	<50	<50
Total Recoverable Hydrocarbons																			
C6-C10 Fraction	mg/kg	10	<10	<10	0	<10	<20	0	<10	-	-	<10	-	-	<10	<10	0	<10	<20
C6-C10 Fraction minus BTEX (F1)	mg/kg	10	<10	<10	0	<10	<20	0	<10	-	-	<10	-	-	<10	<10	0	<10	<20
>C10-C16 Fraction	mg/kg	50	<50	<50	0	<50	<50	0	<50	-	-	<50	-	-	<50	<50	0	<50	<50
>C10-C16 Fraction minus naphthalene (F2)	mg/kg	50	<50	<50	0	<50	<50	0	<50	-	-	<50	-	-	<50	<50	0	<50	<50
>C16-C34 Fraction	mg/kg	100	<100	<100	0	<100	<100	0	<100	-	-	<100	-	-	<100	<100	0	<100	<100
>C34-C40 Fraction	mg/kg	100	<100	<100	0	<100	<100	0	<100	-	-	<100	-	-	<100	<100	0	<100	<100
>C10-C40 Fraction (Sum)	mg/kg	50	<50	<50	0	<50	<100	0	<50	-	-	<50	-	-	<50	<50	0	<50	<100
PAHs																			
Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Benzo(b+j)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Naphthalene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Sum of Polycyclic aromatic hydrocarbons (PAH)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Phenols																			
2-Methylphenol	mg/kg	0.2	<0.5	<0.5	0	<0.5	<0.2	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.2
2-Nitrophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	<1	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<1
2,4-Dimethylphenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
3-&4-Methylphenol (m&p-cresol)	mg/kg	0.4	<1	<1	0	<1	<0.4	0	<1	-	-	<1	-	-	<1	<1	0	<1	<0.4
4-Chloro-3-methylphenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	<1	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<1
Phenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Halogenated Phenols																			
2,4,5-Trichlorophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	<1	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<1
2,4,6-Trichlorophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	<1	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<1
2,4-Dichlorophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
2,6-Dichlorophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
2-Chlorophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	-	-	<0.5	-	-	<0.5	<0.5	0	<0.5	<0.5
Pentachlorophenol	mg/kg	1	<2	<2	0	<2	<1	0	<2	-	-	<2	-	-	<2	<2	0	<2	<1
Organophosphorus Pesticides																			
Azinophos Methyl	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.2
Bromophos-ethyl	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	-
Carbophenothion	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	-
Chlorfenvinphos	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.2
Chlorpyrifos	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.2
Chlorpyrifos-methyl	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.2
Demeton-S-methyl	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	-
Diazinon	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.2
Dichlorvos	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.2
Dimethoate	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.2
Ethion	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.2
Fenthion	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.2
Malathion	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.2
Methyl parathion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	-	-	<0.2	-	-	<0.2	<0.2	0	<0.2	<0.2
Monocrotophos	mg/kg	0.2	<0.2	<0.2	0	<0.2	<2	0	<0.2	-	-	<0.2	-	-	<0.2	<0.2	0	<0.2	<2
Prothiofos	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	-
Pesticides																			
Fenamiphos	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	-
Parathion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	-	-	<0.2	-	-	<0.2	<0.2	0	<0.2	<0.2
Pirimphos-ethyl	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	-

Table D-2: Soil RPDs

		Location Code		TP05	TP05		TP05	TP05	
		Field ID		TP05_0.0-0.1	QC104		TP05_0.0-0.1	QC204	
		Date		29/05/2024	29/05/2024		29/05/2024	29/05/2024	
		Sample Type		Normal	Field_D		Normal	Interlab_D	
		Lab Report No.	RPD	ES2417818	ES2417818	RPD	ES2417818	1103506	RPD
	Unit	LOR							
Metals									
Arsenic	mg/kg	2	0	<5	-	-	<5	-	-
Cadmium	mg/kg	0.4	0	<1	-	-	<1	-	-
Chromium	mg/kg	2	24	9	-	-	9	-	-
Copper	mg/kg	5	4	6	-	-	6	-	-
Lead	mg/kg	5	8	<5	-	-	<5	-	-
Mercury	mg/kg	0.1	0	<0.1	-	-	<0.1	-	-
Nickel	mg/kg	2	30	3	-	-	3	-	-
Zinc	mg/kg	5	23	24	-	-	24	-	-
BTEX									
Benzene	mg/kg	0.1	0	<0.2	-	-	<0.2	-	-
Toluene	mg/kg	0.1	0	<0.5	-	-	<0.5	-	-
Ethylbenzene	mg/kg	0.1	0	<0.5	-	-	<0.5	-	-
Xylene (m & p)	mg/kg	0.2	0	<0.5	-	-	<0.5	-	-
Xylene (o)	mg/kg	0.1	0	<0.5	-	-	<0.5	-	-
Total Xylene	mg/kg	0.3	0	<0.5	-	-	<0.5	-	-
Total BTEX	mg/kg	0.2	-	<0.2	-	-	<0.2	-	-
Total Petroleum Hydrocarbons									
C6-C9 Fraction	mg/kg	10	0	<10	-	-	<10	-	-
C10-C14 Fraction	mg/kg	20	0	<50	-	-	<50	-	-
C15-C28 Fraction	mg/kg	50	0	<100	-	-	<100	-	-
C29-C36 Fraction	mg/kg	50	0	<100	-	-	<100	-	-
C10-C36 Fraction (Sum)	mg/kg	50	0	<50	-	-	<50	-	-
Total Recoverable Hydrocarbons									
C6-C10 Fraction	mg/kg	10	0	<10	-	-	<10	-	-
C6-C10 Fraction minus BTEX (F1)	mg/kg	10	0	<10	-	-	<10	-	-
>C10-C16 Fraction	mg/kg	50	0	<50	-	-	<50	-	-
>C10-C16 Fraction minus naphthalene (F2)	mg/kg	50	0	<50	-	-	<50	-	-
>C16-C34 Fraction	mg/kg	100	0	<100	-	-	<100	-	-
>C34-C40 Fraction	mg/kg	100	0	<100	-	-	<100	-	-
>C10-C40 Fraction (Sum)	mg/kg	50	0	<50	-	-	<50	-	-
PAHs									
Acenaphthene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Acenaphthylene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Anthracene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Benz(a)anthracene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Benzo(a)pyrene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Benzo(b+j)fluoranthene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Benzo(g,h,i)perylene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Benzo(k)fluoranthene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Chrysene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Dibenz(a,h)anthracene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Fluoranthene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Fluorene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Naphthalene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Phenanthrene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Pyrene	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Sum of Polycyclic aromatic hydrocarbons (PAH)	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Phenols									
2-Methylphenol	mg/kg	0.2	0	<0.5	-	-	<0.5	-	-
2-Nitrophenol	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
2,4-Dimethylphenol	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
3-&4-Methylphenol (m&p-cresol)	mg/kg	0.4	0	<1	-	-	<1	-	-
4-Chloro-3-methylphenol	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Phenol	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Halogenated Phenols									
2,4,5-Trichlorophenol	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
2,4,6-Trichlorophenol	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
2,4-Dichlorophenol	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
2,6-Dichlorophenol	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
2-Chlorophenol	mg/kg	0.5	0	<0.5	-	-	<0.5	-	-
Pentachlorophenol	mg/kg	1	0	<2	-	-	<2	-	-
Organophosphorus Pesticides									
Azinophos Methyl	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Bromophos-ethyl	mg/kg	0.05	-	<0.05	-	-	<0.05	-	-
Carbophenothion	mg/kg	0.05	-	<0.05	-	-	<0.05	-	-
Chlorfenvinphos	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Chlorpyrifos	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Chlorpyrifos-methyl	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Demeton-S-methyl	mg/kg	0.05	-	<0.05	-	-	<0.05	-	-
Diazinon	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Dichlorvos	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Dimethoate	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Ethion	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Fenthion	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Malathion	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Methyl parathion	mg/kg	0.2	0	<0.2	-	-	<0.2	-	-
Monocrotophos	mg/kg	0.2	0	<0.2	-	-	<0.2	-	-
Prothiofos	mg/kg	0.05	-	<0.05	-	-	<0.05	-	-
Pesticides									
Fenamiphos	mg/kg	0.05	-	<0.05	-	-	<0.05	-	-
Parathion	mg/kg	0.2	0	<0.2	-	-	<0.2	-	-
Pirimphos-ethyl	mg/kg	0.05	-	<0.05	-	-	<0.05	-	-

Table D-2: Soil RPDs

		Location Code	MW01	MW01		MW01	MW01		MW03	MW03		MW03	MW03		TP02	TP02		TP02	TP02
		Field ID	MW01_0.0-0.1	QC100		MW01_0.0-0.1	QC200		MW03_0.0-0.1	QC101		MW03_0.0-0.1	QC201		TP02_0.0-0.1	QC103		TP02_0.0-0.1	QC203
		Date	20/05/2024	20/05/2024		20/05/2024	20/05/2024		20/05/2024	20/05/2024		20/05/2024	20/05/2024		29/05/2024	29/05/2024		29/05/2024	29/05/2024
		Sample Type	Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D
		Lab Report No.	ES2417817	ES2417817	RPD	ES2417817	1103508	RPD	ES2417817	ES2417817	RPD	ES2417817	1103508	RPD	ES2417818	ES2417818	RPD	ES2417818	1103506
	Unit	LOR																	
Polychlorinated Biphenyls																			
PCBs (Sum of total)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	-	-	<0.1	-	-	<0.1	<0.1	0	<0.1	<0.1
Organochlorine Pesticides																			
a-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
b-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
d-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Dieldrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
g-BHC (Lindane)	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Aldrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Aldrin + Dieldrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Chlordane	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.1
DDT	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	-	-	<0.2	-	-	<0.2	<0.2	0	<0.2	<0.05
4,4-DDE	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
DDD	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
DDT+DDE+DDD	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Endosulfan I	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Endosulfan II	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Endosulfan sulfate	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Endrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Chlordane (cis)	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	-
Chlordane (trans)	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	-
Endrin aldehyde	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Endrin ketone	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Heptachlor	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Heptachlor epoxide	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
Methoxychlor	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	-	-	<0.2	-	-	<0.2	<0.2	0	<0.2	<0.05
Endosulfan	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	-
Fungicides																			
Hexachlorobenzene	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05
(n:2) Fluorotelomer Sulfonic Acids																			
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	-	-	<0.0005	<0.0005	0	<0.0005	-	-	<0.0005	<0.0005	0	<0.0005	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.01	0	<0.0005	<0.0005	0	<0.0005	<0.01	0	<0.0005	<0.0005	0	<0.0005	<0.01
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	-	-	<0.0005	<0.0005	0	<0.0005	-	-	<0.0005	<0.0005	0	<0.0005	-
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	-	-	<0.0005	<0.0005	0	<0.0005	-	-	<0.0005	<0.0005	0	<0.0005	-
Perfluoroalkane Carboxylic Acids																			
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	-	-	<0.0002	<0.0002	0	<0.0002	-	-	<0.0002	<0.0002	0	<0.0002	-
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	-	-	<0.0002	<0.0002	0	<0.0002	-	-	<0.0002	<0.0002	0	<0.0002	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	-	-	<0.0002	<0.0002	0	<0.0002	-	-	<0.0002	<0.0002	0	<0.0002	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	-	-	<0.001	<0.001	0	<0.001	-	-	<0.001	<0.001	0	<0.001	-
Perfluorooctanoic acid (PFOA)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005
Perfluoroalkane Sulfonic Acids																			
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	-	-	<0.0002	<0.0002	0	<0.0002	-	-	<0.0002	<0.0002	0	<0.0002	-
Sum of PFHxS and PFOS	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005	0	<0.0002	<0.0002	0	<0.0002	<0.005

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 1000 (1 - 10 x EQL); 50 (10 - 20 x EQL); 30 (> 20 x EQL))**
*****Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory**

Table D-2: Soil RPDs

		Location Code		TP05	TP05		TP05	TP05	
		Field ID		TP05_0.0-0.1	QC104		TP05_0.0-0.1	QC204	
		Date		29/05/2024	29/05/2024		29/05/2024	29/05/2024	
		Sample Type		Normal	Field_D		Normal	Interlab_D	
		Lab Report No.	RPD	ES2417818	ES2417818	RPD	ES2417818	1103506	RPD
	Unit	LOR							
Polychlorinated Biphenyls									
PCBs (Sum of total)	mg/kg	0.1	0	<0.1	-	-	<0.1	-	-
Organochlorine Pesticides									
a-BHC	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
b-BHC	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
d-BHC	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Dieldrin	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
g-BHC (Lindane)	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Aldrin	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Aldrin + Dieldrin	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Chlordane	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
DDT	mg/kg	0.05	0	<0.2	-	-	<0.2	-	-
4,4-DDE	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
DDD	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
DDT+DDE+DDD	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Endosulfan I	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Endosulfan II	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Endosulfan sulfate	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Endrin	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Chlordane (cis)	mg/kg	0.05	-	<0.05	-	-	<0.05	-	-
Chlordane (trans)	mg/kg	0.05	-	<0.05	-	-	<0.05	-	-
Endrin aldehyde	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Endrin ketone	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Heptachlor	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Heptachlor epoxide	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
Methoxychlor	mg/kg	0.05	0	<0.2	-	-	<0.2	-	-
Endosulfan	mg/kg	0.05	-	<0.05	-	-	<0.05	-	-
Fungicides									
Hexachlorobenzene	mg/kg	0.05	0	<0.05	-	-	<0.05	-	-
(n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005	-	<0.0005	<0.0005	0	<0.0005	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005	0	<0.0005	<0.0005	0	<0.0005	<0.01	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005	-	<0.0005	<0.0005	0	<0.0005	-	-
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005	-	<0.0005	<0.0005	0	<0.0005	-	-
Perfluoroalkane Carboxylic Acids									
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002	-	<0.0002	<0.0002	0	<0.0002	-	-
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002	-	<0.0002	<0.0002	0	<0.0002	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002	-	<0.0002	<0.0002	0	<0.0002	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001	-	<0.001	<0.001	0	<0.001	-	-
Perfluorooctanoic acid (PFOA)	mg/kg	0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0
Perfluoroalkane Sulfonic Acids									
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002	0	0.0082	0.0094	14	0.0082	0.0065	23
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.005	0
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002	-	<0.0002	<0.0002	0	<0.0002	-	-
Sum of PFHxS and PFOS	mg/kg	0.0002	0	0.0082	0.0094	14	0.0082	0.0065	23

***RPDs have only been considered where a concentration is greater than 1 tim**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RP**
*****Interlab Duplicates are matched on a per compound basis as methods vary**

Table D-3: Water RPDs

		Location Code	MW02	MW02		MW02	MW02	
		Field ID	MW02	QC102		MW02	QC202	
		Date	28/05/2024	28/05/2024		28/05/2024	28/05/2024	
		Sample Type	Normal	Field_D		Normal	Interlab_D	
		Lab Report No.	ES2417394	ES2417394	RPD	ES2417394	1102875	RPD
	Unit	LOR						
Metals								
Arsenic (filtered)	mg/L	0.001	0.001	<0.001	0	0.001	<0.001	0
Cadmium (filtered)	mg/L	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0002	0
Chromium (filtered)	mg/L	0.001	0.007	0.007	0	0.007	0.006	15
Copper (filtered)	mg/L	0.001	<0.001	0.006	143	<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	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Nickel (filtered)	mg/L	0.001	0.005	0.005	0	0.005	0.006	18
Zinc (filtered)	mg/L	0.005	<0.005	<0.005	0	<0.005	<0.005	0
BTEX								
Benzene	µg/L	1	<1	<1	0	<1	<1	0
Toluene	µg/L	1	<2	<2	0	<2	<1	0
Ethylbenzene	µg/L	1	4	4	0	4	6	40
Xylene (m & p)	µg/L	2	<2	<2	0	<2	3	40
Xylene (o)	µg/L	1	<2	<2	0	<2	<1	0
Total Xylene	µg/L	2	<2	<2	0	<2	<3	0
Total BTEX	µg/L	1	4	4	0	4	-	-
Total Petroleum Hydrocarbons								
C6-C9 Fraction	µg/L	20	<20	<20	0	<20	30	40
C10-C14 Fraction	µg/L	50	<50	<50	0	<50	<50	0
C15-C28 Fraction	µg/L	100	<100	<100	0	<100	<100	0
C29-C36 Fraction	µg/L	50	<50	<50	0	<50	<100	0
C10-C36 Fraction (Sum)	µg/L	50	<50	<50	0	<50	<100	0
Total Recoverable Hydrocarbons								
C6-C10 Fraction	µg/L	20	<20	<20	0	<20	40	67
C6-C10 Fraction minus BTEX (F1)	µg/L	20	<20	<20	0	<20	30	40
>C10-C16 Fraction	µg/L	50	<100	<100	0	<100	<50	0
>C10-C16 Fraction minus naphthalene (F2)	µg/L	50	<100	<100	0	<100	<50	0
>C16-C34 Fraction	µg/L	100	<100	<100	0	<100	<100	0
>C34-C40 Fraction	µg/L	100	<100	<100	0	<100	<100	0
>C10-C40 Fraction (Sum)	µg/L	100	<100	<100	0	<100	<100	0
PAHs								
Acenaphthene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Acenaphthylene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Anthracene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Benz(a)anthracene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Benzo(a)pyrene	µg/L	0.5	<0.5	<0.5	0	<0.5	<1	0
Benzo(b+j)fluoranthene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Benzo(g,h,i)perylene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Benzo(k)fluoranthene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Chrysene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Dibenz(a,h)anthracene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Fluoranthene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Fluorene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Indeno(1,2,3-c,d)pyrene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Naphthalene	µg/L	1	3.4	3.1	9	3.4	4	16
Phenanthrene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Pyrene	µg/L	1	<1.0	<1.0	0	<1.0	<1	0
Benzo(a)pyrene TEQ (Zero)	µg/L	0.5	<0.5	<0.5	0	<0.5	-	-
Sum of Polycyclic aromatic hydrocarbons (PAH)	µg/L	0.5	3.4	3.1	9	3.4	4	16
MAH								
1,2,4-Trimethylbenzene	µg/L	1	6	6	0	6	9	40
1,3,5-Trimethylbenzene	µg/L	1	<5	<5	0	<5	<1	0
Isopropylbenzene	µg/L	1	<5	<5	0	<5	1	0
n-Butylbenzene	µg/L	5	<5	<5	0	<5	-	-
n-Propylbenzene	µg/L	5	<5	<5	0	<5	-	-
p-Isopropyltoluene	µg/L	5	<5	<5	0	<5	-	-
sec-Butylbenzene	µg/L	5	<5	<5	0	<5	-	-
tert-Butylbenzene	µg/L	5	<5	<5	0	<5	-	-
Styrene	µg/L	1	<5	<5	0	<5	<1	0
Halogenated Benzenes								
1,2,3-Trichlorobenzene	µg/L	5	<5	<5	0	<5	-	-
1,2-Dichlorobenzene	µg/L	1	<5	<5	0	<5	<1	0
1,2,4-Trichlorobenzene	µg/L	5	<5	<5	0	<5	-	-
1,3-Dichlorobenzene	µg/L	1	<5	<5	0	<5	<1	0
2-Chlorotoluene	µg/L	5	<5	<5	0	<5	-	-
1,4-Dichlorobenzene	µg/L	1	<5	<5	0	<5	<1	0
4-Chlorotoluene	µg/L	1	<5	<5	0	<5	<1	0
Bromobenzene	µg/L	1	<5	<5	0	<5	<1	0
Chlorobenzene	µg/L	1	<5	<5	0	<5	<1	0
Halogenated Hydrocarbons								
1,2-Dibromoethane	µg/L	1	<5	<5	0	<5	<1	0
Bromomethane	µg/L	5	<50	<50	0	<50	<5	0
Dichlorodifluoromethane	µg/L	5	<50	<50	0	<50	<5	0
Iodomethane	µg/L	1	<5	<5	0	<5	<1	0
Trichlorofluoromethane	µg/L	5	<50	<50	0	<50	<5	0
Chlorinated Hydrocarbons								
1,1-Dichloropropene	µg/L	5	<5	<5	0	<5	-	-
1,1-Dichloroethane	µg/L	1	<5	<5	0	<5	<1	0
1,1-Dichloroethene	µg/L	1	<5	<5	0	<5	<1	0
1,1,1,2-Tetrachloroethane	µg/L	1	<5	<5	0	<5	<1	0
1,1,1-Trichloroethane	µg/L	1	<5	<5	0	<5	<1	0
1,2-Dibromo-3-chloropropane	µg/L	5	<5	<5	0	<5	-	-
1,1,2-Trichloroethane	µg/L	1	<5	<5	0	<5	<1	0
1,1,2,2-Tetrachloroethane	µg/L	1	<5	<5	0	<5	<1	0
1,2,3-Trichloropropane	µg/L	1	<5	<5	0	<5	<1	0
1,2-Dichloroethane	µg/L	1	<5	<5	0	<5	<1	0
1,3-Dichloropropane	µg/L	1	<5	<5	0	<5	<1	0
1,2-Dichloropropane	µg/L	1	<5	<5	0	<5	<1	0
2,2-Dichloropropane	µg/L	5	<5	<5	0	<5	-	-
Bromochloromethane	µg/L	1	-	-	-	-	<1	-
Bromodichloromethane	µg/L	1	<5	<5	0	<5	<1	0
Bromoform	µg/L	1	<5	<5	0	<5	<1	0
Carbon Tetrachloride	µg/L	1	<5	<5	0	<5	<1	0
Chlorodibromomethane	µg/L	1	<5	<5	0	<5	<1	0
Chloroethane	µg/L	5	<50	<50	0	<50	<5	0
Chloroform	µg/L	5	<5	<5	0	<5	<5	0
Chloromethane	µg/L	5	<50	<50	0	<50	<5	0
cis-1,4-Dichloro-2-butene	µg/L	5	<5	<5	0	<5	-	-
cis-1,2-Dichloroethene	µg/L	1	<5	<5	0	<5	4	0
Dibromomethane	µg/L	1	<5	<5	0	<5	<1	0
cis-1,3-Dichloropropene	µg/L	1	<5	<5	0	<5	<1	0
Hexachlorobutadiene	µg/L	5	<5	<5	0	<5	-	-
Pentachloroethane	µg/L	5	<5	<5	0	<5	-	-
Tetrachloroethene	µg/L	1	<5	<5	0	<5	<1	0
trans-1,4-Dichloro-2-butene	µg/L	5	<5	<5	0	<5	-	-
trans-1,2-Dichloroethene	µg/L	1	<5	<5	0	<5	<1	0
trans-1,3-Dichloropropene	µg/L	1	<5	<5	0	<5	<1	0
Trichloroethene	µg/L	1	<5	<5	0	<5	<1	0
Vinyl Chloride	µg/L	5	<50	<50	0	<50	<5	0
Solvents								
Methyl Ethyl Ketone (MEK)	µg/L	5	<50	<50	0	<50	<5	0
2-Hexanone (MBK)	µg/L	50	<50	<50	0	<50	-	-
4-Methyl-2-pentanone	µg/L	5	<50	<50	0	<50	<5	0
Carbon disulfide	µg/L	1	<5	<5	0	<5	<1	0
Vinyl acetate	µg/L	50	<50	<50	0	<50	-	-
Organophosphorus Pesticides								
Azinophos Methyl	µg/L	0.5	<0.5	<0.5	0	<0.5	<2	0
Bromophos-ethyl	µg/L	0.5	<0.5	<0.5	0	<0.5	-	-
Carbophenothion	µg/L	0.5	<0.5	<0.5	0	<0.5	-	-
Chlorfenvinphos	µg/L	0.5	<0.5	<0.5	0	<0.5	<20	0
Chlorpyrifos	µg/L	0.5	<0.5	<0.5	0	<0.5	<2	0
Chlorpyrifos-methyl	µg/L	0.5	<0.5	<0.5	0	<0.5	<2	0
Demeton-S-methyl	µg/L	0.5	<0.5	<0.5	0	<0.5	-	-
Diazinon	µg/L	0.5	<0.5	<0.5	0	<0.5	<2	0
Dichlorvos	µg/L	0.5	<0.5	<0.5	0	<0.5	<2	0
Dimethoate	µg/L	0.5	<0.5	<0.5	0	<0.5	<2	0
Ethion	µg/L	0.5	<0.5	<0.5	0	<0.5	<2	0
Fenthion	µg/L	0.5	<0.5	<0.5	0	<0.5	<2	0
Malathion	µg/L	0.5	<0.5	<0.5	0	<0.5	<2	0
Methyl parathion	µg/L	2	<2.0	<2.0	0	<2.0	<2	0
Monocrotophos	µg/L	2	<2.0	<2.0	0	<2.0	<2	0

Table D-3: Water RPDs

		Location Code	MW02	MW02		MW02	MW02	
		Field ID	MW02	QC102		MW02	QC202	
		Date	28/05/2024	28/05/2024		28/05/2024	28/05/2024	
		Sample Type	Normal	Field_D		Normal	Interlab_D	
		Lab Report No.	ES2417394	ES2417394	RPD	ES2417394	1102875	RPD
	Unit	LOR						
Prothiofos	µg/L	0.5	<0.5	<0.5	0	<0.5	-	-
Pesticides								
Fenamiphos	µg/L	0.5	<0.5	<0.5	0	<0.5	-	-
Parathion	µg/L	2	<2.0	<2.0	0	<2.0	<2	0
Pirimphos-ethyl	µg/L	0.5	<0.5	<0.5	0	<0.5	-	-
Polychlorinated Biphenyls								
PCBs (Sum of total)	µg/L	1	<1	<1	0	<1	<5	0
Organochlorine Pesticides								
a-BHC	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
b-BHC	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
d-BHC	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Dieldrin	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
g-BHC (Lindane)	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Aldrin	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Aldrin + Dieldrin	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Chlordane	µg/L	0.5	<0.5	<0.5	0	<0.5	<2	0
DDT	µg/L	0.2	<2.0	<2.0	0	<2.0	<0.2	0
4,4-DDE	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
DDD	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
DDT+DDE+DDD	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Endosulfan I	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Endosulfan II	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Endosulfan sulfate	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Endrin	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Chlordane (cis)	µg/L	0.5	<0.5	<0.5	0	<0.5	-	-
Chlordane (trans)	µg/L	0.5	<0.5	<0.5	0	<0.5	-	-
Endrin aldehyde	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Endrin ketone	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Heptachlor	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Heptachlor epoxide	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
Methoxychlor	µg/L	0.2	<2.0	<2.0	0	<2.0	<0.2	0
Fungicides								
Hexachlorobenzene	µg/L	0.2	<0.5	<0.5	0	<0.5	<0.2	0
(n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	<0.05	<0.05	0	<0.05	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	0.82	0.62	28	0.82	0.65	23
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.01	<0.05	<0.05	0	<0.05	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	<0.05	<0.05	0	<0.05	<0.01	0
Perfluoroalkane Carboxylic Acids								
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	0.22	0.23	4	0.22	0.22	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.02	<0.02	0	<0.02	0.02	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	0.24	0.25	4	0.24	0.23	4
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.05	<0.05	0	<0.05	<0.01	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	0.10	0.10	0	0.10	0.10	0
Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.1	<0.1	0	<0.1	0.08	0
Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorooctanoic acid (PFOA)	µg/L	0.01	0.12	0.12	0	0.12	0.14	15
Perfluoroalkane Sulfonic Acids								
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.01	3.36	3.23	4	3.36	3.3	2
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	0.04	0.04	0	0.04	0.04	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.56	0.57	2	0.56	0.66	16
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	0.05	0.05	0	0.05	0.06	18
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.01	<0.02	<0.02	0	<0.02	<0.01	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	0.03	0.02	40	0.03	0.03	0
Sum of PFHxS and PFOS	µg/L	0.01	3.92	3.80	3	3.92	3.96	1
Perfluoroalkyl Sulfonamides								
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	µg/L	0.02	<0.02	<0.02	0	<0.02	<0.05	0
N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	µg/L	0.02	<0.02	<0.02	0	<0.02	<0.05	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	0	<0.02	<0.05	0
PFAS								
Sum of PFAS	µg/L	0.01	5.59	5.27	6	5.59	5.58	0

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 1000 (1 - 10 x EQL); 50 (10 - 20 x EQL); 30 (> 2**
*****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 pr**

Table D-4: Soil Blank

		Field ID	QC402
		Date	24/05/2024
		Sample Type	Trip Blank
		Lab Report No.	ES2417818
	Unit	LOR	
BTEX			
Benzene	mg/kg	0.2	<0.2
Toluene	mg/kg	0.5	<0.5
Ethylbenzene	mg/kg	0.5	<0.5
Xylene (m & p)	mg/kg	0.5	<0.5
Xylene (o)	mg/kg	0.5	<0.5
Total Xylene	mg/kg	0.5	<0.5
Total BTEX	mg/kg	0.2	<0.2
Total Petroleum Hydrocarbons			
C6-C9 Fraction	mg/kg	10	<10
Total Recoverable Hydrocarbons			
C6-C10 Fraction	mg/kg	10	<10
C6-C10 Fraction minus BTEX (F1)	mg/kg	10	<10
PAHs			
Naphthalene	mg/kg	1	<1

Targeted Site Investigation - PEW
BAE Systems Australia - Williamtown Facilities Expansion
Built
S20283

Table D-5: Water Blanks

senversa

		Field ID	QC300	QC301	QC302	QC400	QC401
		Date	20/05/2024	20/05/2024	28/05/2024	20/05/2024	24/05/2024
		Sample Type	Rinsate	Rinsate	Rinsate	Trip Blank	Trip Blank
		Lab Report No.	ES2417817	ES2417817	ES2417394	ES2417817	ES2417394
	Unit	LOR					
Metals							
Arsenic (filtered)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	-
Cadmium (filtered)	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-
Chromium (filtered)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	-
Copper (filtered)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	-
Lead (filtered)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	-
Mercury (filtered)	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-
Nickel (filtered)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	-
Zinc (filtered)	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	-
BTEX							
Benzene	µg/L	1	<1	<1	<1	<1	<1
Toluene	µg/L	2	<2	<2	<2	<2	<2
Ethylbenzene	µg/L	2	<2	<2	<2	<2	<2
Xylene (m & p)	µg/L	2	<2	<2	<2	<2	<2
Xylene (o)	µg/L	2	<2	<2	<2	<2	<2
Total Xylene	µg/L	2	<2	<2	<2	<2	<2
Total BTEX	µg/L	1	<1	<1	<1	<1	<1
Total Petroleum Hydrocarbons							
C6-C9 Fraction	µg/L	20	<20	<20	<20	<20	<20
C10-C14 Fraction	µg/L	50	<50	<50	<50	<50	-
C15-C28 Fraction	µg/L	100	<100	<100	<100	<100	-
C29-C36 Fraction	µg/L	50	<50	<50	<50	<50	-
C10-C36 Fraction (Sum)	µg/L	50	<50	<50	<50	<50	-
Total Recoverable Hydrocarbons							
C6-C10 Fraction	µg/L	20	<20	<20	<20	<20	<20
C6-C10 Fraction minus BTEX (F1)	µg/L	20	<20	<20	<20	<20	<20
>C10-C16 Fraction	µg/L	100	<100	<100	<100	<100	-
>C10-C16 Fraction minus naphthalene (F2)	µg/L	100	<100	<100	<100	<100	-
>C16-C34 Fraction	µg/L	100	<100	<100	<100	<100	-
>C34-C40 Fraction	µg/L	100	<100	<100	<100	<100	-
>C10-C40 Fraction (Sum)	µg/L	100	<100	<100	<100	<100	-
PAHs							
Acenaphthene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Acenaphthylene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Anthracene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Benz(a)anthracene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Benzo(a)pyrene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Benzo(b+j)fluoranthene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Benzo(g,h,i)perylene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Benzo(k)fluoranthene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Chrysene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Dibenz(a,h)anthracene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Fluoranthene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Fluorene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Indeno(1,2,3-c,d)pyrene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Naphthalene	µg/L	1	<1.0	<1.0	<1.0	<1.0	<5
Phenanthrene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Pyrene	µg/L	1	<1.0	<1.0	<1.0	<1.0	-
Benzo(a)pyrene TEQ (Zero)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Sum of Polycyclic aromatic hydrocarbons (PAH)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Phenols							
2-Methylphenol	µg/L	1	<1.0	<1.0	-	<1.0	-
2-Nitrophenol	µg/L	1	<1.0	<1.0	-	<1.0	-
2,4-Dimethylphenol	µg/L	1	<1.0	<1.0	-	<1.0	-
3-&4-Methylphenol (m&p-cresol)	µg/L	2	<2.0	<2.0	-	<2.0	-
4-Chloro-3-methylphenol	µg/L	1	<1.0	<1.0	-	<1.0	-
Phenol	µg/L	1	<1.0	<1.0	-	<1.0	-
Halogenated Phenols							
2,4,5-Trichlorophenol	µg/L	1	<1.0	<1.0	-	<1.0	-
2,4,6-Trichlorophenol	µg/L	1	<1.0	<1.0	-	<1.0	-
2,4-Dichlorophenol	µg/L	1	<1.0	<1.0	-	<1.0	-
2,6-Dichlorophenol	µg/L	1	<1.0	<1.0	-	<1.0	-
2-Chlorophenol	µg/L	1	<1.0	<1.0	-	<1.0	-
Pentachlorophenol	µg/L	2	<2.0	<2.0	-	<2.0	-
Organophosphorus Pesticides							
Azinophos Methyl	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Bromophos-ethyl	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Carbophenothion	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Chlorfenvinphos	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Chlorpyrifos	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Chlorpyrifos-methyl	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Demeton-S-methyl	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Diazinon	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Dichlorvos	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Dimethoate	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Ethion	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Fenthion	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Malathion	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Methyl parathion	µg/L	2	<2.0	<2.0	-	<2.0	-
Monocrotophos	µg/L	2	<2.0	<2.0	-	<2.0	-
Prothiofos	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Pesticides							
Fenamiphos	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Parathion	µg/L	2	<2.0	<2.0	-	<2.0	-
Pirimphos-ethyl	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Polychlorinated Biphenyls							
PCBs (Sum of total)	µg/L	1	<1	<1	-	<1	-
Organochlorine Pesticides							
a-BHC	µg/L	0.5	<0.5	<0.5	-	<0.5	-
b-BHC	µg/L	0.5	<0.5	<0.5	-	<0.5	-
d-BHC	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Dieldrin	µg/L	0.5	<0.5	<0.5	-	<0.5	-
g-BHC (Lindane)	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Aldrin	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Aldrin + Dieldrin	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Chlordane	µg/L	0.5	<0.5	<0.5	-	<0.5	-
DDT	µg/L	2	<2.0	<2.0	-	<2.0	-
4,4-DDE	µg/L	0.5	<0.5	<0.5	-	<0.5	-
DDD	µg/L	0.5	<0.5	<0.5	-	<0.5	-
DDT+DDE+DDD	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Endosulfan I	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Endosulfan II	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Endosulfan sulfate	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Endrin	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Chlordane (cis)	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Chlordane (trans)	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Endrin aldehyde	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Endrin ketone	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Heptachlor	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Heptachlor epoxide	µg/L	0.5	<0.5	<0.5	-	<0.5	-
Methoxychlor	µg/L	2	<2.0	<2.0	-	<2.0	-
Fungicides							
Hexachlorobenzene	µg/L	0.5	<0.5	<0.5	-	<0.5	-
(n:2) Fluorotelomer Sulfonic Acids							
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05	<0.05	-	<0.05	<0.05	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	-	<0.05	<0.05	-
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05	<0.05	-	<0.05	<0.05	-
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	-	<0.05	<0.05	-

Table D-5: Water Blanks

		Field ID	QC300	QC301	QC302	QC400	QC401
		Date	20/05/2024	20/05/2024	28/05/2024	20/05/2024	24/05/2024
		Sample Type	Rinsate	Rinsate	Rinsate	Trip Blank	Trip Blank
		Lab Report No.	ES2417817	ES2417817	ES2417394	ES2417817	ES2417394
	Unit	LOR					
Perfluoroalkane Carboxylic Acids							
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	-	<0.02	<0.02	-
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	-	-	<0.02	-	-
Perfluorononanoic acid (PFNA)	µg/L	0.02	-	-	<0.02	-	-
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	-	<0.02	<0.02	-
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	-	-	<0.05	-	-
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	-	<0.02	<0.02	-
Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	-	<0.1	<0.1	-
Perfluorodecanoic acid (PFDA)	µg/L	0.02	-	-	<0.02	-	-
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	-	-	<0.02	-	-
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	-	-	<0.02	-	-
Perfluorooctanoic acid (PFOA)	µg/L	0.01	<0.01	-	<0.01	<0.01	-
Perfluoroalkane Sulfonic Acids							
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.01	<0.01	-	<0.01	<0.01	-
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	-	-	<0.02	-	-
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	-	<0.01	<0.01	-
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	-	-	<0.02	-	-
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	-	-	<0.02	-	-
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	-	<0.02	<0.02	-
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	-	<0.01	<0.01	-
Perfluoroalkyl Sulfonamides							
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	-	-	<0.05	-	-
N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	µg/L	0.02	-	-	<0.02	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	µg/L	0.02	-	-	<0.02	-	-
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	-	-	<0.05	-	-
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	-	-	<0.05	-	-
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	-	-	<0.05	-	-
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	-	-	<0.02	-	-
PFAS							
Sum of PFAS	µg/L	0.01	-	-	<0.01	-	-

Targeted Site Investigation - PEW
BAE Systems Australia - Williamtown Facilities Expansion
Built
S20283

Table D-6: Trip Spike

				BTEXN							
				Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Total Xylene	Total BTEX	Naphthalene
			Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			LOR	0.2	0.5	0.5	0.5	0.5	0.5	0.2	1
Field ID	**Date**	**Sample Type**	**Lab Report**								
QC500	24/05/2024	Trip Spike	ES2417818	0.2	5.6	6.6	6.9	2.9	9.8	22	<1
			Trip Spike Control	0.2	7.6	8.2	8.6	3.6	12.2	28.2	<1
			Trip Spike Recovery (%)	100	74	80	80	81	80	78	100
			Recovery Limit (%)	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130

Appendix E: Borehole Logs

BOREHOLE LOG

MW01

PROJECT: S20283: BAE Systems Williamtown Facilities Expansion
LOCATION: Medowie Road, Williamtown, NSW
POSITION: E391145.011 N6369534.759 (GDA2020 (Lat Long))
RIG TYPE: Geoprobe 7822DT/Hand Auger
DATE: 20 May 2024
GENERAL NOTES: N/A
WATER NOTE: Water observed at 3.80 m

CLIENT: Built Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Terratest
DIAMETER: 100 mm

FINAL DEPTH: 7.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: 7.00 m
DIMENSIONS: N/A
LOGGED BY: MF
CHECKED BY: DG

METHOD	GROUND WATER LEVELS	WELL INSTALLATION	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA			0.0		FILL	FILL GRAVEL: poorly graded, fine, sub-rounded to sub-angular, GRAVEL, with sand, (Fine to medium, sub-angular to sub-rounded), grey, moist, No odour, No staining.	ED	MW01_0.0-0.1	PID(0.0m)=0 PPM
			0.5				ED	MW01_0.5-0.6	PID(0.5m)=0 PPM
			1.0		FILL	FILL SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, brown, moist, No odour, No staining.	EU	MW01_1.0-1.1	PID(1.0m)=0 PPM
					FILL	FILL GRAVEL: poorly graded, fine, sub-rounded to sub-angular, GRAVEL, with sand, (Fine, sub-angular to sub-rounded), grey, moist, Low hydrocarbon odour, Hydrocarbon staining.	EU	MW01_1.1-1.2	PID(1.1m)=1 PPM
PT			1.5		SP	SP SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, brown, moist, Low sulphur odour, No staining, Trace organic matter (roots, bark), Quaternary Sediments.	EU	MW01_1.4-1.5	PID(1.4m)=0 PPM
						SP: pale yellow.	EU	MW01_1.7-1.8	PID(1.7m)=0 PPM
			2.0		SP				
			2.5			SP: pale orange .	EU	MW01_2.5-2.6	PID(2.5m)=0 PPM
			3.0		SP				
	▶		3.5			SP: pale yellow, wet.	EU	MW01_3.8-3.9	PID(3.8m)=0 PPM
			4.0		SP	SP: pale orange.			
			4.5		SP	SP: pale yellow, Moderate sulphur odour.	EU	MW01_4.5-4.6	PID(4.5m)=0 PPM
			5.0						
			5.5				EU	MW01_5.5-5.6	PID(5.5m)=0 PPM
			6.0		SP				
			6.5						
		W	7.0				EU	MW01_6.9-7.0	PID(6.9m)=0 PPM
			7.5			Terminated at 7.00 m. Target Depth Achieved.			

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes

For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

MW02

PROJECT: S20283: BAE Systems Williamtown Facilities Expansion
LOCATION: Medowie Road, Williamtown, NSW
POSITION: E391005.863 N6369406.373 (GDA2020 (Lat Long))
RIG TYPE: Hand Auger/Geoprobe 7822DT
DATE: 20 May 2024
GENERAL NOTES: N/A
WATER NOTE: Water observed at 3.00 m

CLIENT: Built Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Terratest
DIAMETER: 100 mm

FINAL DEPTH: 7.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: 7.00 m
DIMENSIONS: N/A
LOGGED BY: MF
CHECKED BY: DG

METHOD	GROUND WATER LEVELS	WELL INSTALLATION	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA			0.0		FILL	FILL GRAVEL: poorly graded, fine, sub-rounded to sub-angular, GRAVEL, with sand, (Fine to medium, sub-angular to sub-rounded), grey, moist, No odour, No staining.	ED	MW02_0.0-0.1	PID(0.0m)=0 PPM
			0.5				ED	MW02_0.5-0.6	PID(0.5m)=0 PPM
			1.0				ED	MW02_1.0-1.1	PID(1.0m)=0 PPM
			1.5		SP	SP SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, grey, moist, No odour, No staining, Quaternary Sediments.	EU	MW02_1.4-1.5	PID(1.4m)=0 PPM
			2.0				EU	MW02_2.0-2.1	PID(2.0m)=0 PPM
			2.5		SP	SP: dark brown, Moderate sulphur odour.	EU	MW02_2.4-2.5	PID(2.4m)=0 PPM
PT	▶		3.0			SP: pale yellow, wet, Low sulphur odour.	EU	MW02_3.0-3.1	PID(3.0m)=0 PPM
			3.5						
			4.0				EU	MW02_4.0-4.1	PID(4.0m)=0 PPM
			4.5						
			5.0		SP		EU	MW02_5.0-5.1	PID(5.0m)=0 PPM
			5.5						
			6.0				EU	MW02_6.0-6.1	PID(6.0m)=0 PPM
			6.5						
		W	7.0				EU	MW02_6.9-7.0	PID(6.9m)=0 PPM
			7.5			Terminated at 7.00 m. Target Depth Achieved.			

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes

For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

MW03

PROJECT: S20283: BAE Systems Williamtown Facilities Expansion
LOCATION: Medowie Road, Williamtown, NSW
POSITION: E391017.714 N6369562.003 (GDA2020 (Lat Long))
RIG TYPE: Hand Auger/Geoprobe 7822DT
DATE: 20 May 2024
GENERAL NOTES: N/A
WATER NOTE: Water observed at 3.50 m

CLIENT: Built Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Terratest
DIAMETER: 100 mm

FINAL DEPTH: 7.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: 7.00 m
DIMENSIONS: N/A
LOGGED BY: MF
CHECKED BY: DG

METHOD	GROUND WATER LEVELS	WELL INSTALLATION	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA			0.0		FILL	FILL GRAVEL: poorly graded, fine, sub-rounded to sub-angular, GRAVEL, with sand, (Fine, sub-angular to sub-rounded), grey, moist to wet, No odour, No staining.	ED	MW03_0.0-0.1	PID(0.0m)=0 PPM
			0.5				ED	MW03_0.5-0.6	PID(0.5m)=0 PPM
			1.0				EU	MW03_1.0-1.1	PID(1.0m)=0 PPM
PT			1.5		SP	SP SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, dark grey, moist, Moderate sulphur odour, No staining, Quaternary Sediments.	EU	MW03_1.5-1.6	PID(1.5m)=0 PPM
					SP	SP: pale grey, Low sulphur odour odour, Trace organic matter.			
			2.0		SP	SP: dark brown.	EU	MW03_1.9-2.0	PID(1.9m)=0 PPM
			2.5		SP	SP: yellow.	EU	MW03_2.5-2.6	PID(2.5m)=0 PPM
	▶		3.0		SP				
			3.5		SP	SP: pale orange, wet, No organic matter.	EU	MW03_3.5-3.6	PID(3.5m)=0 PPM
			4.0		SP				
			4.5		SP	SP: pale yellow, Moderate sulphur odour.	EU	MW03_4.5-4.6	PID(4.5m)=0 PPM
			5.0						
			5.5						
			6.0				EU	MW03_6.0-6.1	PID(6.0m)=0 PPM
			6.5						
		W	7.0				EU	MW03_6.9-7.0	PID(6.9m)=0 PPM
						Terminated at 7.00 m. Target Depth Achieved.			
			7.5						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes
For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

TEST PIT LOG

TP01

PROJECT: S20283: BAE Systems Williamtown Facilities Expansion
LOCATION: Medowie Road, Williamtown, NSW
POSITION: E391019.668 N6369494.654 (GDA2020 (Lat Long))
RIG TYPE: 5T Excavator
DATE: 29 May 2024
GENERAL NOTES: N/A

CLIENT: Built Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Genus
DIAMETER: N/A

FINAL DEPTH: 1.40 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: 1.5m X 0.45m
LOGGED BY: MF
CHECKED BY: DG

METHOD	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
E	0.0		FILL	FILL GRAVEL: poorly graded, fine to coarse, sub-angular to sub-rounded, GRAVEL, with sand, (Fine to medium, sub-angular to sub-rounded), grey, moist, No odour, No staining.	ED	TP01_0.0-0.1	PID(0.0m)=0 PPM
			FILL	FILL GRAVEL: poorly graded, fine to medium, sub-angular to sub-rounded, GRAVEL, with sand, (Fine to medium, sub-angular to sub-rounded), grey, moist, No odour, No staining.	ED	TP01_0.2-0.3	PID(0.2m)=0 PPM
	0.5		FILL	FILL SAND: poorly graded, fine to medium, sub-rounded to sub-angular, SAND, pale yellow, moist, No odour, No staining.	ED	TP01_0.4-0.5	PID(0.4m)=0 PPM
			FILL	FILL: with gravel, (Medium to coarse, sub-angular to sub-rounded), pale yellow to grey.			
	1.0		SP	SP SAND: poorly graded, fine to medium, sub-rounded to sub-angular, SAND, dark grey, moist, Low sulphur odour, No staining, Quaternary Sediments.	ED	TP01_0.8-0.9	PID(0.8m)=0 PPM
			SP	SP: orange, Strong sulphur odour.	ED	TP01_1.3-1.4	PID(1.3m)=0 PPM
	1.5			Terminated at 1.40 m. Target Depth Achieved.			
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						
	5.0						
	5.5						
	6.0						
	6.5						
	7.0						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes
For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

TEST PIT LOG

TP02

PROJECT: S20283: BAE Systems Williamtown Facilities Expansion
LOCATION: Medowie Road, Williamtown, NSW
POSITION: E391049.294 N6369501.144 (GDA2020 (Lat Long))
RIG TYPE: 5T Excavator
DATE: 29 May 2024
GENERAL NOTES: N/A

CLIENT: Built Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Genus
DIAMETER: N/A

FINAL DEPTH: 1.40 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: 1.5m X 0.45m
LOGGED BY: MF
CHECKED BY: DG

METHOD	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
E	0.0		FILL	FILL GRAVEL: poorly graded, fine to medium, sub-angular to sub-rounded, GRAVEL, with sand, (Fine to medium, sub-angular to sub-rounded), brown, dry to moist, No odour, No staining.	ED	TP02_0.0-0.1	PID(0.0m)=0 PPM
	0.5		FILL	FILL: grey.	ED	TP02_0.4-0.5	PID(0.4m)=0 PPM
	1.0				ED	TP02_1.0-1.1	PID(1.0m)=0 PPM
			SP	SP SAND: poorly graded, fine to medium, sub-rounded to sub-angular, SAND, dark grey, moist, Moderate sulphur odour, No staining, Quaternary Sediments.	ED	TP02_1.2-1.3	PID(1.2m)=0 PPM
			SP	SP: orange, moist to wet, Inclusions of organic matter.	ED	TP02_1.3-1.4	PID(1.3m)=0 PPM
	1.5			Terminated at 1.40 m. Target Depth Achieved.			
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						
	5.0						
	5.5						
	6.0						
	6.5						
	7.0						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes
For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

TEST PIT LOG

TP03

PROJECT: S20283: BAE Systems Williamtown Facilities Expansion
LOCATION: Medowie Road, Williamtown, NSW
POSITION: E391088.800 N6369497.441 (GDA2020 (Lat Long))
RIG TYPE: 5T Excavator
DATE: 29 May 2024
GENERAL NOTES: N/A

CLIENT: Built Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Genus
DIAMETER: N/A

FINAL DEPTH: 1.40 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: 1.5m X 0.45m
LOGGED BY: MF
CHECKED BY: DG

METHOD	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
E	0.0		FILL	FILL GRAVEL: poorly graded, fine to coarse, sub-rounded to sub-angular, GRAVEL, with sand, (Fine to medium, sub-angular to sub-rounded), brown, dry to moist, No odour, No staining.	ED	TP03_0.0-0.1	PID(0.0m)=0 PPM
	0.5		FILL	FILL: grey, anthropogenic material including tile, ceramic, rubble (<5%).	ED	TP03_0.4-0.5	PID(0.4m)=0 PPM
			FILL	FILL SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, with gravel, (Fine, sub-angular to sub-rounded), dark grey, moist, No odour, No staining.	ED	TP03_0.7-0.8	PID(0.7m)=0 PPM
	1.0		FILL	FILL Sandy GRAVEL: poorly graded, fine to medium, sub-rounded to sub-angular, GRAVEL, fine to medium, sub-rounded to sub-angular Sand, grey to blue, moist, No odour, No staining.			
			SP	SP SAND: poorly graded, fine to medium, sub-rounded to sub-angular, SAND, dark grey, moist, Moderate sulphur odour, No staining, Quaternary Sediments.	ED	TP03_1.1-1.2	PID(1.1m)=0 PPM
			SP	SP: pale yellow to pale grey, moist to wet.	ED	TP03_1.3-1.4	PID(1.3m)=0 PPM
	1.5			Terminated at 1.40 m. Target Depth Achieved.			
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						
	5.0						
	5.5						
	6.0						
	6.5						
	7.0						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes
For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

TEST PIT LOG

TP04

PROJECT: S20283: BAE Systems Williamtown Facilities Expansion
LOCATION: Medowie Road, Williamtown, NSW
POSITION: E391078.045 N6369536.785 (GDA2020 (Lat Long))
RIG TYPE: 5T Excavator
DATE: 29 May 2024
GENERAL NOTES: N/A

CLIENT: Built Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Genus
DIAMETER: N/A

FINAL DEPTH: 1.40 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: 1.5m X 0.45m
LOGGED BY: MF
CHECKED BY: DG

METHOD	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
E	0.0		FILL	FILL GRAVEL: poorly graded, fine to coarse, sub-rounded to sub-angular, GRAVEL, with sand, (Fine to medium, sub-angular to sub-rounded), brown, dry to moist, anthropogenic material including tile, terracotta (<5%), No odour, No staining.	ED	TP04_0.0-0.1	PID(0.0m)=0 PPM
	0.5		FILL	FILL GRAVEL: poorly graded, fine to medium, sub-rounded to sub-angular, GRAVEL, with sand, (Fine to medium, sub-angular to sub-rounded), grey, dry to moist, anthropogenic material including geofabric (5-10%), No odour, No staining, Geofabric encountered at 0.9 m.	ED	TP04_0.4-0.5	PID(0.4m)=0 PPM
	1.0				ED	TP04_1.0-1.1	PID(1.0m)=0 PPM
			SP	SP SAND: poorly graded, fine to medium, sub-rounded to sub-angular, SAND, trace gravel, (Fine, sub-angular to sub-rounded), dark grey, moist, Moderate sulphur odour, No staining, Quaternary Sediments.	ED	TP04_1.2-1.3	PID(1.2m)=0 PPM
					ED	TP04_1.3-1.4	PID(1.3m)=0 PPM
	1.5			Terminated at 1.40 m. Target Depth Achieved.			
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						
	5.0						
	5.5						
	6.0						
	6.5						
	7.0						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes
For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

TEST PIT LOG

TP05

PROJECT: S20283: BAE Systems Williamtown Facilities Expansion
LOCATION: Medowie Road, Williamtown, NSW
POSITION: E391025.199 N6369540.791 (GDA2020 (Lat Long))
RIG TYPE: 5T Excavator
DATE: 29 May 2024
GENERAL NOTES: N/A

CLIENT: Built Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Genus
DIAMETER: N/A

FINAL DEPTH: 1.40 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: 1.5m X 0.45m
LOGGED BY: MF
CHECKED BY: DG

METHOD	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
E	0.0		FILL	FILL GRAVEL: poorly graded, fine to medium, sub-rounded to sub-angular, GRAVEL, with sand, (Fine to medium, sub-angular to sub-rounded), grey, moist, No odour, No staining.	ED	TP05_0.0-0.1	PID(0.0m)=0 PPM
	0.5		FILL	FILL SAND: poorly graded, fine to medium, sub-rounded to sub-angular, SAND, dark grey, moist, No odour, No staining.	ED	TP05_0.3-0.4	PID(0.3m)=0 PPM
	1.0		FILL	FILL GRAVEL: poorly graded, fine to medium, sub-rounded to sub-angular, GRAVEL, with sand, (Fine to medium, sub-angular to sub-rounded), grey, moist to wet, No odour, No staining.	ED	TP05_0.8-0.9	PID(0.8m)=0 PPM
			SP	SP SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, dark grey to black, moist, Strong sulphur odour, No staining, Inclusions of organic matter, Quaternary Sediments.	ED	TP05_1.2-1.3	PID(1.2m)=0 PPM
			SP	SP: pale grey, Low sulphur odour.	ED	TP05_1.3-1.4	PID(1.3m)=0 PPM
	1.5			Terminated at 1.40 m. Target Depth Achieved.			
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						
	5.0						
	5.5						
	6.0						
	6.5						
	7.0						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes

For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

Appendix F: Field Forms

Monitoring Round: PEW_280524

Location Visit

Site ID	PEW Williamtown	**Monitoring Zone**	
Location Code	MW02		
Arrival Date/Time	28/05/2024 07:46AM	**Departure Date/Time**	28/05/2024 08:40AM
Executed By	Megan Ferguson		
Weather	Clear, 20		
Comments			

Well Information

Gatic Type	New
Key Type	8mm hex key
Well Condition	Good

Authorisation

Checked By	Samuel Alchin
Date Checked	26 Jun 2024 10:19 AM

Groundwater Data

Well	MW02	**Date/Time**	28/05/2024 07:50AM
Measurement Method	Dip	**Dry**	No
Water Depth (mbTOC)	1.424	**Well Depth (mbTOC)**	7
Product Depth (mbTOC)			
Comments & Product Description			
Equipment ID			
Sediment Thickness (m)			
Depth to Water with Pump (m)			

gauging

Well Head PID (PPM)	0
Product Confirmed by Bailer	No

Sample Data

Sampled Date/Time	28/05/2024 07:55AM
Well	MW02
Matrix Type	Water
Equipment ID	
Sample Comments	
Field ID (Primary)	MW02

Purge Method	Low flow (peri)
Sample Method	Low flow (peri)
Waste Disposal	Drums

Purge Observations (purge start)

Purge Colour (Description)	yellow
Purge Odour (Description)	sulphurous odour
Purge Sheen (Description)	no sheen
Purge Turbidity (Description)	Non-turbid

Sample Observations (purge end)

Sample Colour (Description)	yellow
Sample Odour (Description)	sulphurous odour
Sample Sheen (Description)	no sheen
Sample Turbidity (Description)	Non-turbid

QA Samples

QA Sample ID (1)	QC102
QA Sample ID (2)	QC202
QA Sample ID (3)	
QA Sample ID (4)	

Purge/Sampling Comments

Air Bubbles in Vials	No
Headspace PID Reading(s)	0
Reaction with Preservatives	No
Recharge-ability	Good >0.4L/min
Water Depth at end of Sampling (m)	1.424

Field Chemistry

Time	Pump Inlet Depth	Standing Water Level	Purge rate (Field)	EC (Field)	pH (Field)	Redox (Field)	Dissolved Oxygen (Field)	Temp (Field)	Purge Volume
	m bTOC	m bTOC	L/min	uS/cm	pH Units	mV	mg/L	° C	L
08:10AM	6.5	1.426	0.09	398.6	5.54	-318.7	0.42	21.9	0.4
08:15AM	6.5	1.426	0.09	385.8	5.57	-318.2	0.17	22.1	0.9
08:21AM	6.5	1.426	0.09	382.7	5.57	-317.7	0.13	22.1	1.3
08:25AM	6.5	1.425	0.09	378	5.58	-316.4	0.11	22.1	1.8
08:30AM	6.5	1.425	0.09	373.5	5.59	-315.4	0.1	22.1	2.2
08:35AM	6.5	1.425	0.09	368.5	5.59	-314.5	0.1	22.1	2.7
Stabilisation *				±3% (3)	±0.05pH (3)	±10mV (3)	±10% (3)	±10% (3)	

Green indicates readings have stabilised according to the criteria shown, red indicates they haven't. The number in brackets indicates the number of readings that need to meet the criteria for the readings to be considered stable.

Monitoring Round: PEW_280524

Location Visit

Site ID	PEW Williamtown	**Monitoring Zone**	
Location Code	MW01		
Arrival Date/Time	28/05/2024 08:55AM	**Departure Date/Time**	28/05/2024 09:51AM
Executed By	Megan Ferguson		
Weather	Clear, 20		
Comments			

Well Information

Gatic Type	New
Key Type	8mm hex key
Well Condition	Good

Authorisation

Checked By	Samuel Alchin
Date Checked	26 Jun 2024 10:21 AM

Groundwater Data

Well	MW01	**Date/Time**	28/05/2024 08:59AM
Measurement Method	Dip	**Dry**	No
Water Depth (mbTOC)	0.743	**Well Depth (mbTOC)**	6.86
Product Depth (mbTOC)			
Comments & Product Description			
Equipment ID			
Sediment Thickness (m)			
Depth to Water with Pump (m)			

gauging

Well Head PID (PPM)	0
Product Confirmed by Bailer	No

Sample Data

Sampled Date/Time	28/05/2024 09:04AM
Well	MW01
Matrix Type	Water
Equipment ID	
Sample Comments	
Field ID (Primary)	MW01

Purge Method	Low flow (peri)
Sample Method	Low flow (peri)
Waste Disposal	Drums

Purge Observations (purge start)

Purge Colour (Description)	yellow
Purge Odour (Description)	sulphurous odour
Purge Sheen (Description)	no sheen
Purge Turbidity (Description)	Non-turbid

Sample Observations (purge end)

Sample Colour (Description)	yellow
Sample Odour (Description)	sulphurous odour
Sample Sheen (Description)	no sheen
Sample Turbidity (Description)	Non-turbid

QA Samples

QA Sample ID (1)

QA Sample ID (2)

QA Sample ID (3)

QA Sample ID (4)

Purge/Sampling Comments

Air Bubbles in Vials	No
Headspace PID Reading(s)	0
Reaction with Preservatives	No
Recharge-ability	Good >0.4L/min
Water Depth at end of Sampling (m)	0.743

Field Chemistry

	Pump Inlet Depth	Standing Water Level	Purge rate (Field)	EC (Field)	pH (Field)	Redox (Field)	Dissolved Oxygen (Field)	Temp (Field)	Purge Volume
Time	**m bTOC**	**m bTOC**	**L/min**	**uS/cm**	**pH Units**	**mV**	**mg/L**	**° C**	**L**
09:18AM	6.5	0.746	0.09	408.8	5.71	-255.6	0.24	22.1	0.5
09:23AM	6.5	0.746	0.09	394.1	5.7	-262.1	0.18	22.1	1
09:28AM	6.5	0.746	0.09	371.8	5.69	-264.6	0.13	22.1	1.4
09:32AM	6.5	0.746	0.09	340.2	5.66	-267.7	0.12	22.1	1.8
09:36AM	6.5	0.746	0.09	342.8	5.65	-267.6	0.11	22.1	2.3
09:41AM	6.5	0.746	0.09	338.7	5.64	-268.8	0.11	22.1	2.7
09:46AM	6.5	0.746	0.09	337.2	5.64	-269.2	0.1	22.1	3.1
Stabilisation *				±3% (3)	±0.05pH (3)	±10mV (3)	±10% (3)	±10% (3)	

Green indicates readings have stabilised according to the criteria shown, red indicates they haven't. The number in brackets indicates the number of readings that need to meet the criteria for the readings to be considered stable.

Monitoring Round: PEW_280524

Location Visit

Site ID	PEW Williamtown	**Monitoring Zone**	
Location Code	MW03		
Arrival Date/Time	28/05/2024 10:01AM	**Departure Date/Time**	28/05/2024 10:37AM
Executed By	Megan Ferguson		
Weather	Clear, 20		
Comments			

Well Information

Gatic Type	New
Key Type	8mm hex key
Well Condition	Good

Authorisation

Checked By	Samuel Alchin
Date Checked	26 Jun 2024 10:21 AM

Groundwater Data

Well	MW03	**Date/Time**	28/05/2024 10:04AM
Measurement Method	Dip	**Dry**	No
Water Depth (mbTOC)	1.433	**Well Depth (mbTOC)**	7.04
Product Depth (mbTOC)			
Comments & Product Description			
Equipment ID			
Sediment Thickness (m)			
Depth to Water with Pump (m)			

gauging

Well Head PID (PPM)	0
Product Confirmed by Bailer	No

Sample Data

Sampled Date/Time	28/05/2024 10:09AM
Well	MW03
Matrix Type	Water
Equipment ID	
Sample Comments	
Field ID (Primary)	MW03

Purge Method	Low flow (peri)
Sample Method	Low flow (peri)
Waste Disposal	Drums

Purge Observations (purge start)

Purge Colour (Description)	yellow
Purge Odour (Description)	sulphurous odour
Purge Sheen (Description)	no sheen
Purge Turbidity (Description)	Non-turbid

Sample Observations (purge end)

Sample Colour (Description)	yellow
Sample Odour (Description)	sulphurous odour
Sample Sheen (Description)	no sheen
Sample Turbidity (Description)	Non-turbid

QA Samples

QA Sample ID (1)

QA Sample ID (2)

QA Sample ID (3)

QA Sample ID (4)

Purge/Sampling Comments

Air Bubbles in Vials	No
Headspace PID Reading(s)	0
Reaction with Preservatives	No
Recharge-ability	Good >0.4L/min
Water Depth at end of Sampling (m)	1.433

Field Chemistry

Time	Pump Inlet Depth	Standing Water Level	Purge rate (Field)	EC (Field)	pH (Field)	Redox (Field)	Dissolved Oxygen (Field)	Temp (Field)	Purge Volume
	m bTOC	m bTOC	L/min	uS/cm	pH Units	mV	mg/L	° C	L
10:14AM	6.5	1.434	0.09	67.7	5.26	-263.1	0.22	22	0.5
10:17AM	6.5	1.434	0.09	67.9	5.24	-266.8	0.18	22	1
10:21AM	6.5	1.434	0.09	68.5	5.24	-268.9	0.15	22.1	1.5
10:24AM	6.5	1.434	0.09	69.6	5.24	-271.5	0.13	22	2
10:27AM	6.5	1.434	0.09	70.8	5.25	-273.5	0.12	22	2.5
10:31AM	6.5	1.434	0.09	70.9	5.25	-274.2	0.12	22	3
Stabilisation *				±3% (3)	±0.05pH (3)	±10mV (3)	±10% (3)	±10% (3)	

Green indicates readings have stabilised according to the criteria shown, red indicates they haven't. The number in brackets indicates the number of readings that need to meet the criteria for the readings to be considered stable.

senversa

Well Development Record

Site and Job Information		Well Information			
Job Number:	**S20283**	**Well ID:**	**MW01**	**Well Condition:**	Good
Project Name:	**PEW Investigation**	**Well Type (monitor, extraction, other):**	Monitor	**Well Diameter (m):**	0.05
Client:	**Built**	**Well Construction (flush, stickup):**	Flush	**Drilling Diameter (m):**	0.10
Location:	**Williamtown, NSW**	**Top of casing compared to ground level (m):**		**Top of filter pack (m btoc):**	3.50
		Top of screen (m btoc):	4.00	**Bottom of screen (m btoc)**	7.00
		Well Material (PVC, stainless steel, other):	PVC	**Bore Volumes required:**	3

Well Gauging Details				Well Development Details	
Date:	20/05/2024	**Product Confirmed?:**	No	**Development Method (e.g. surge block, pump, steel bailer, foot valve, bailer):**	Steel Bailer
Time:	14:34	**Depth to Product (m btoc):**	N/A	**Water Collection Depth (e.g. pump intake setting, m btoc):**	7.00
Depth to Water (m btoc):	0.679	**Product Thickness (m):**	N/A	**Well Volume Calculation (L):#**	1 volume = 12.136, 3 volumes = 36.41
Total Depth of Well (m btoc):	6.86	**Product Description:**	N/A	**Waste Disposal (e.g. drums, stormwater, sewer, surface, etc.):**	Drums

Field Chemistry (if required)

Time	Pump Rate (L/min)	Volume (L)	SWL (m btoc)	DO (mg/L) ±10%	EC (µS/cm) ±3%	pH ±0.05	Redox (mV) ±10mV	Temp (°C) ±10%	Observations (odour, sheen, colour, turbidity)
14:40		5.0	0.71	3.42	171.9	5.64	-135.3	21.4	brown, low sulphur odour, no sheen, moderately turbid
14:43		10.0	0.71	3.25	143.6	5.76	-131.8	21.6	brown, low sulphur odour, no sheen, moderately turbid
14:47		15.0	0.70	3.31	129.6	5.72	-123.8	21.7	brown, low sulphur odour, no sheen, moderately turbid
14:50		20.0	0.70	3.26	119.6	5.73	-128.3	21.7	brown, low sulphur odour, no sheen, low turbidity
14:53		25.0	0.70	3.19	122.4	5.73	-123.2	21.6	brown, low sulphur odour, no sheen, low turbidity
14:56		30.0	0.71	3.28	123.1	5.74	-125.6	21.6	brown, low sulphur odour, no sheen, low turbidity
15:00		35.0	0.70	3.26	120.8	5.74	-128.4	21.6	brown, low sulphur odour, no sheen, low turbidity
15:04		40.0	0.71	3.30	121.7	5.73	-127.8	21.7	brown, low sulphur odour, no sheen, low turbidity
Parameter stabilised?:				**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	

Other Comments

Authorisation		Notes
Developed By: Meg Ferguson	**Signature:** Meg Ferguson	# Purge Volume = effective porosity assumed as 0.3 Well development is considered complete when the following conditions are met: The well is clean of particle and the water is relatively clear and free of fines. Parameters and water level are stable, i.e three consective readings (obtaied several minutes apart). Well development techniques and required volume must be discussed with PM /PD and consider drilling methods (introduced water, caking of annulas from augering, formation conditions (high/low yeild), etc.
Checked By:	**Signature:**	

senversa

Well Development Record

Site and Job Information		Well Information			
Job Number:	**S20283**	**Well ID:**	**MW02**	**Well Condition:**	Good
Project Name:	**PEW Investigation**	**Well Type (monitor, extraction, other):**	Monitor	**Well Diameter (m):**	0.05
Client:	**Built**	**Well Construction (flush, stickup):**	Flush	**Drilling Diameter (m):**	0.10
Location:	**Williamtown, NSW**	**Top of casing compared to ground level (m):**		**Top of filter pack (m btoc):**	3.50
		Top of screen (m btoc):	4.00	**Bottom of screen (m btoc)**	7.00
		Well Material (PVC, stainless steel, other):	PVC	**Bore Volumes required:**	3

Well Gauging Details				Well Development Details	
Date:	20/05/2024	**Product Confirmed?:**	No	**Development Method (e.g. surge block, pump, steel bailer, foot valve, bailer):**	Steel Bailer
Time:	15:12	**Depth to Product (m btoc):**	N/A	**Water Collection Depth (e.g. pump intake setting, m btoc):**	7.00
Depth to Water (m btoc):	1.373	**Product Thickness (m):**	N/A	**Well Volume Calculation (L):#**	1 volume = 11.049, 3 volumes =33.146
Total Depth of Well (m btoc):	7.00	**Product Description:**	N/A	**Waste Disposal (e.g. drums, stormwater, sewer, surface, etc.):**	Drums

Field Chemistry (if required)

Time	Pump Rate (L/min)	Volume (L)	SWL (m btoc)	DO (mg/L) ±10%	EC (µS/cm) ±3%	pH ±0.05	Redox (mV) ±10mV	Temp (°C) ±10%	Observations (odour, sheen, colour, turbidity)
15:19		5.0	1.39	2.30	305.1	5.71	-117.6	21.0	brown, low sulphur odour, no sheen, low turbidity
15:22		10.0	1.39	1.66	289.3	5.72	-120.9	21.8	brown, low sulphur odour, no sheen, low turbidity
15:26		15.0	1.39	2.29	292.6	5.77	-113.7	21.3	brown, low sulphur odour, no sheen, low turbidity
15:30		20.0	1.39	2.47	296.2	5.76	-115.2	21.5	brown, low sulphur odour, no sheen, low turbidity
15:33		25.0	1.39	2.30	295.3	5.75	-118.9	21.4	brown, low sulphur odour, no sheen, low turbidity
15:37		30.0	1.40	2.32	295.8	5.75	-118.2	21.4	brown, low sulphur odour, no sheen, low turbidity
15:41		35.0	1.40	2.30	295.2	5.75	-116.4	21.5	brown, low sulphur odour, no sheen, low turbidity
Parameter stabilised?:				**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	

Other Comments

Authorisation		Notes
Developed By: Meg Ferguson	**Signature:** Meg Ferguson	# Purge Volume = effective porosity assumed as 0.3 Well development is considered complete when the following conditions are met: The well is clean of particle and the water is relatively clear and free of fines. Parameters and water level are stable, i.e three consective readings (obtaied several minutes apart). Well development techniques and required volume must be discussed with PM /PD and consider drilling methods (introduced water, caking of annulas from augering, formation conditions (high/low yeild), etc.
Checked By:	**Signature:**	

Well Development Record

Site and Job Information		Well Information			
Job Number:	**S20283**	**Well ID:**	**MW03**	**Well Condition:**	Good
Project Name:	**PEW Investigation**	**Well Type (monitor, extraction, other):**	Monitor	**Well Diameter (m):**	0.05
Client:	**Built**	**Well Construction (flush, stickup):**	Flush	**Drilling Diameter (m):**	0.10
Location:	**Williamtown, NSW**	**Top of casing compared to ground level (m):**		**Top of filter pack (m btoc):**	3.50
		Top of screen (m btoc):	4.00	**Bottom of screen (m btoc)**	7.00
		Well Material (PVC, stainless steel, other):	PVC	**Bore Volumes required:**	3

Well Gauging Details				Well Development Details	
Date:	20/05/2024	**Product Confirmed?:**	No	**Development Method (e.g. surge block, pump, steel bailer, foot valve, bailer):**	Steel Bailer
Time:	15:50	**Depth to Product (m btoc):**	N/A	**Water Collection Depth (e.g. pump intake setting, m btoc):**	7.00
Depth to Water (m btoc):	1.360	**Product Thickness (m):**	N/A	**Well Volume Calculation (L):#**	1 volume = 11.153, 3 volumes = 33.46
Total Depth of Well (m btoc):	7.04	**Product Description:**	N/A	**Waste Disposal (e.g. drums, stormwater, sewer, surface, etc.):**	Drums

Field Chemistry (if required)

Time	Pump Rate (L/min)	Volume (L)	SWL (m btoc)	DO (mg/L) ±10%	EC (µS/cm) ±3%	pH ±0.05	Redox (mV) ±10mV	Temp (°C) ±10%	Observations (odour, sheen, colour, turbidity)
15:56		5.0	1.36	1.95	111.1	5.87	-104.7	20.7	brown, low sulphur odour, no sheen, moderate turbidity
16:00		10.0	1.36	1.53	104.2	5.78	-118.6	20.8	brown, moderate sulphur odour, no sheen, moderate turbidity
16:03		15.0	1.36	1.35	115.3	5.82	-124.5	20.8	brown, moderate sulphur odour, no sheen, moderate turbidity
16:06		20.0	1.36	1.42	110.2	5.83	-122.4	20.7	brown, moderate sulphur odour, no sheen, moderate turbidity
16:10		25.0	1.35	1.38	114.6	5.82	-116.9	20.7	brown, moderate sulphur odour, no sheen, low turbidity
16:14		30.0	1.35	1.37	115.9	5.82	-115.4	20.7	brown, moderate sulphur odour, no sheen, low turbidity
16:17		35.0	1.36	1.38	114.8	5.83	-115.8	20.7	brown, moderate sulphur odour, no sheen, low turbidity
16:20		40.0	1.36	1.36	115.2	5.83	-114.5	20.7	brown, moderate sulphur odour, no sheen, low turbidity
Parameter stabilised?:				**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	

Other Comments

Authorisation		Notes
Developed By: Meg Ferguson	**Signature:** Meg Ferguson	# Purge Volume = effective porosity assumed as 0.3 Well development is considered complete when the following conditions are met: The well is clean of particle and the water is relatively clear and free of fines. Parameters and water level are stable, i.e three consective readings (obtaied several minutes apart). Well development techniques and required volume must be discussed with PM /PD and consider drilling methods (introduced water, caking of annulas from augering, formation conditions (high/low yeild), etc.
Checked By:	**Signature:**	

Appendix G: Calibration Certificates

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

Certificate of Service and Calibration
Interface Meter
Heron H.Oil

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Heron H.Oil Interface Meter (30m)
Serial Number	01-8272
Client Name	Megan Ferguson (Senversa)
Project Number	S20283

Instrument Check			
Item	Test	Test Passed	Comments
9V Battery	Klein Tools MM300 Multimeter	✓	Battery voltage reading above 7.9V
Battery Box	Check	✓	No damage
Face and Back Plates	Check	✓	No damage
Thumb Screws	Check	✓	Rubber ends intact
Tape Hangar/Protector	Check	✓	No damage
On/Off Button	Operation	✓	Button is functional
Buzzer	Operation	✓	Intermittent tone in H_2O, solid tone in product
LED Signal Light	Operation	✓	LED light functional – green and red
Probe	Operation/Check	✓	Decontaminated, cleaned and tested
Tape	Condition/Check	✓	Decontaminated and cleaned, no damage
Connection	Check	✓	Probe and link connected correctly and tightly
PCB	Operation	✓	Unit is fully functional
Electronics Panel	Orientation	✓	Correctly aligned

Instrument Readings		
Product	Buzzer	LED Light
H_2O	Intermittent	Blinking – Red
Petroleum	Solid	Steady – Red

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

Checked By	William Pak
Calibration Date	13/05/2024
Calibration Due	13/11/2024

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

WAM Scientific:
26 Bungarra Crescent
CHIPPING NORTON NSW 2170
T: +61 405 241 484 | +61 424 198 667
E: rentals@wamscientific.com.au
E: accounts@wamscientific.com.au

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Quatro Water Quality Meter w/ 1m Quatro Cable
Serial Number	20D102896
Client Name	Megan Ferguson (Senversa)
Project Number	S20283
Comments	-

Instrument Check

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

Instrument Readings

Parameter	Standard Used	Reference No.	Calibration Value	Observed	Actual	Units
Temperature	Centre 370 Thermometer	Room Temp.	15.4	15.6	15.4	°C
pH	pH 4.00	386466	4.01	4.05	4.01	pH
pH	pH 7.00	387329	7.00	7.07	7.00	pH
Conductivity	2760 µs/cm at 25°C	388521	2760	2783	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	250.6	245.5	250.6	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	389912	0.0	0.1	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	102.8	100.0	%

Declaration

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

Calibrated By	William Pak
Calibration Date	13/05/2024
Calibration Due	13/11/2024

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

WAM Scientific:
26 Bungarra Crescent
CHIPPING NORTON NSW 2170
T: +61 405 241 484 | +61 424 198 667
E: rentals@wamscientific.com.au
E: accounts@wamscientific.com.au

Certificate of Service and Calibration
Peristaltic Pump
Geotech Geopump 2

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Geotech Geopump Peristaltic Pump
Cable Length	4.5m
Serial Number	Pump: 6496
Serial Number	Head: -
Client Name	Megan Ferguson (Senversa)
Project Number	S20283

Instrument Check			
Item	Test	Test Passed	Comments
2 x 12V Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 12V
Battery Terminals	Check	✓	No damage
Charger	Condition/Check	✓	Functioning
Cabling	Check	✓	No damage
Alligator Clips	Check	✓	Protected, no damage
Casing	Check	✓	Clean, no damage
Handle	Check	✓	No damage
Pump Head	Check	✓	EZ2 Head, no damage
Pump Condition	Decontamination	✓	Decontaminated
Pump Operation	Operation	✓	Peristaltic pump functional
Pump Tubing	Replacement	✓	New 0.5m ¼" OD LDPE silicon tubing
Pump Speed	Operation	✓	Speed knob functional

Inclusions
2 x Sealed lead acid 12V batteries included 1x Carry case for 12V batteries included 1x Intrinsically safe charger (clips) included

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The pump has been decontaminated and cleaned upon return from the previous hire and is in good working order.

Checked By	William Pak
Calibration Date	24/05/2024
Calibration Due	24/11/2024

WAM Scientific:
26 Bungarra Crescent
CHIPPING NORTON NSW 2170
T: +61 405 241 484 | +61 424 198 667
E: rentals@wamscientific.com.au
E: accounts@wamscientific.com.au

Certificate of Service and Calibration

Gas Detector

BW Max XT II

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	MultiRAE Lite (PGM6208)
Serial Number	M01C015639
Client Name	Megan Ferguson (Senversa)
Project Number	S20283

Instrument Check			
Item	Test	Test Passed	Comments
Li-Ion Rechargeable Battery	Battery Charge and Drain	✓	Unit runs for > 8 hours on a full charge
Charger	Operation/Check	✓	No damage
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Pump	Flow Check	✓	Flow rate > 0.5 L/min
Monitor Housing	Condition/Check	✓	No damage
Water Trap Filter	Visual Check	✓	Clean
Alarms	Audible, Visual, Vibration Check	✓	All modes of alarms are functional
Data Logger	Operation	✓	Unit records data, default set at 60 seconds
Sensors	Calibration	✓	Calibrated and conforms to manufacturer's specs
PCB	Operation	✓	Unit is fully functional
Firmware	Version	✓	v12.000

Instrument Readings					
Parameter	Calibration Gas	Concentration	Reference No.	Zero Reading	Span Reading
PID (10.6eV)	Isobutylene	100 ppm	950-099256	0 ppm	100.0 ppm

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

Calibrated By	William Pak
Calibration Date	13/05/2024
Calibration Due	13/11/2024

WAM Scientific:
26 Bungarra Crescent
CHIPPING NORTON NSW 2170
T: +61 405 241 484 | +61 424 198 667
E: rentals@wamscientific.com.au
E: accounts@wamscientific.com.au

Appendix H: Photolog



Photo 1. Fill (gravel) from MW01 (0.0-1.0 m bgl).



Photo 2. Fill (gravel) followed by natural sand from MW01 (1.3-1.7 m bgl).



Photo 3. Natural sand from MW01 (1.7-2.0 m bgl).



Photo 4. Fill (gravel) followed by natural sand from MW02 (0.0-5.0 m bgl).



Photo 5. Natural sand from MW03 (1.5-2.0 m bgl).



Photo 6. MW01.



Photo 7. MW02.



Photo 8. MW03.



Photo 9. Fill (gravel) from TP02 (0.0-0.4 m bgl).



Photo 10. Asbestos quantification from TP02 (0.4-0.5 m bgl).



Photo 11. Fill (gravel) from TP02 (0.4-1.2 m bgl).



Photo 12. Natural sand from TP02 (1.2-1.3 m bgl).



Photo 13. Natural sand from TP02 (1.3-1.4 m bgl).



Photo 14. Base of TP02 with groundwater (1.4 m bgl).



Photo 15. Anthropogenic material including tile, ceramic and rubble from TP03 (0.4-0.7 m bgl).



Photo 16. Fill (gravel) from TP04 (0.0-0.4 m bgl).



Photo 17. Anthropogenic material including geofabric from TP04 (0.9 m bgl).



Photo 18. Natural sand from TP04 (1.3-1.4 m bgl).

Appendix I: Laboratory Reports

Mandatory Fields

CHAIN OF CUSTODY

Page 1 of 1

CLIENT CODE:

*CLIENT: Senversa

OFFICE: Sydney

*PROJECT NO./PROJECT: 520283 - PFW ~~Emosit~~ Investigation

*INVOICE TO: Supplieraccounts@senversa.com.au

*EMAIL REPORTS TO: megan.ferguson@senversa.com.au, naomi.lukeman@senversa.com.au

*PROJECT MANAGER: Naomi Lukeman

*PM MOBILE: 0447 514 268

ALS QUOTE #:

SAMPLER: Megan Ferguson

SAMPLER MOBILE: 0455 981 953

PURCHASE ORDER NO.:

SITE: Williamtown, NSW

CC invoice to PM

*** STORAGE REQUIREMENTS**

- ☑ Standard Storage
- ☐ Extended Storage

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND**

- ☑ 5+ day (no surcharge)
- ☐ 3 day (+15%)
- ☐ 2 day (+30%)
- ☐ 1 day (+50%)

Comments:

***ANALYSIS REQUIRED**

Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

BIOSECURITY

Country of Origin:

Environmental Division Sydney

Work Order Reference

ES2417394

Telephone : +61 2 8784 8555

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Filota (B), Solid (BS)	TAH, BTEX	PAH	PFAS	Heavy metals	OCP/OPP	VOCs	PCBs	Asbestos (absence/presence)	Lab QC (additional) Dup	Lab QC (additional) MS	Additional Information
1	MW01		23/5/24		W	X	X	X	X	X	X	X		☐	☐	LAB OF ORIGIN: NEWCASTLE
2	MW02					X	X	X	X	X	X	X		☐	☐	
3	MW03					X	X	X	X	X	X	X		☐	☐	
4	DRUM01				S	X	X	X	X	X	X	X		☐	☐	
5	DRUM02				S	X	X	X	X	X	X	X	X	☐	☐	
6	DRUM03				S	X	X	X	X	X	X	X	X	☐	☐	
7	QC102				S	X	X	X	X	X	X	X	X	☐	☐	E-MAIL
—	QC202				W	X	X	X	X	X	X	X		☐	☐	
8	QC302					X	X	X	X	X	X	X		☐	☐	
9	QC401					X	X	X	X					☐	☐	Forward to Eurofins
						X								☐	☐	

Receipt Detail (Lab Use ONLY)

Chilling Method: Ice / Frozen / Melted

Sample Temp on Receipt: 6.2 °C

Security Seal Intact: Yes / No / N/A

Cooler Present: ☐ Yes ☐ No

Packaging (Circle): Hard Esky, Foam Esky, Soft Sided Esky

Count:

Relinquished: Megan Ferguson — Date/Time: 23/5/24 1:20pm

Received: JW — Date/Time: 23/5/24 5pm

Relinquished: — Date/Time: 28/5/24 13:30

Received: C-C — Date/Time: 28/5 19:27

Brisbane 30/5/24

11.2 4.4°C

1102875

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd

ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Senversa Pty Ltd NSW
Contact name:	Naomi Lukeman
Project name:	PEW INVESTIGATION
Project ID:	S20283
Turnaround time:	5 Day
Date/Time received	May 30, 2024 11:30 AM
Eurofins reference	1102875

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.
✓	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:

Adam Bateup on phone : or by email: AdamBateup@eurofins.com

Results will be delivered electronically via email to Naomi Lukeman - Naomi.Lukeman@senversa.com.au.

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

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd
ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Senversa Pty Ltd NSW
Address: Level 24, 1 Market Street
SYDNEY
NSW 2000

Project Name: PEW INVESTIGATION
Project ID: S20283

Order No.:
Report #: 1102875
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: May 30, 2024 11:30 AM
Due: Jun 6, 2024
Priority: 5 Day
Contact Name: Naomi Lukeman

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Volatile Organics	Per- and Polyfluoroalkyl Substances (PFASs)	Suite B10B:TRH/BTEXN/PAH/OCP/OPP/PCB/M8
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	QC202	May 28, 2024		Water	S24-My0085958	X	X	X
Test Counts						1	1	1

Senversa Pty Ltd NSW
Level 24, 1 Market Street
SYDNEY
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Naomi Lukeman**

Report **1102875-W**
Project name PEW INVESTIGATION
Project ID S20283
Received Date May 30, 2024

Client Sample ID			**QC202**
Sample Matrix			**Water**
Eurofins Sample No.			**S24-My0085958**
Date Sampled			**May 28, 2024**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	0.03
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
TRH C6-C10	0.02	mg/L	0.04
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	0.03
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	0.006
m&p-Xylenes	0.002	mg/L	0.003
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	101
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	0.009
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001

Client Sample ID			QC202
Sample Matrix			Water
Eurofins Sample No.			S24-My0085958
Date Sampled			May 28, 2024
Test/Reference	LOR	Unit	
Volatile Organics			
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005
Allyl chloride	0.001	mg/L	< 0.001
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.005	mg/L	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.005	mg/L	< 0.005
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.005	mg/L	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	0.004
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005
Ethylbenzene	0.001	mg/L	0.006
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	0.001
m&p-Xylenes	0.002	mg/L	0.003
Methylene Chloride	0.005	mg/L	< 0.005
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	0.01
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005
4-Bromofluorobenzene (surr.)	1	%	101
Toluene-d8 (surr.)	1	%	96
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01

Client Sample ID			QC202
Sample Matrix			Water
Eurofins Sample No.			S24-My0085958
Date Sampled			May 28, 2024
Test/Reference	LOR	Unit	
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	0.004
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	0.004
2-Fluorobiphenyl (surr.)	1	%	105
p-Terphenyl-d14 (surr.)	1	%	127
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	133
Tetrachloro-m-xylene (surr.)	1	%	144

Client Sample ID			QC202
Sample Matrix			Water
Eurofins Sample No.			S24-My0085958
Date Sampled			May 28, 2024
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	INT
Polychlorinated Biphenyls			
Aroclor-1016	0.005	mg/L	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005
Total PCB*	0.005	mg/L	< 0.005
Dibutylchlorendate (surr.)	1	%	133
Tetrachloro-m-xylene (surr.)	1	%	144

Client Sample ID			QC202
Sample Matrix			Water
Eurofins Sample No.			S24-My0085958
Date Sampled			May 28, 2024
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	0.006
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	0.006
Zinc (filtered)	0.005	mg/L	< 0.005
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.08
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.23
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.22
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.10
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.14
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	0.02
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	95
13C5-PFPeA (surr.)	1	%	96
13C5-PFHxA (surr.)	1	%	113
13C4-PFHpA (surr.)	1	%	110
13C8-PFOA (surr.)	1	%	100
13C5-PFNA (surr.)	1	%	104
13C6-PFDA (surr.)	1	%	86
13C2-PFUnDA (surr.)	1	%	93
13C2-PFDoDA (surr.)	1	%	88
13C2-PFTeDA (surr.)	1	%	78
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	%	89
D3-N-MeFOSA (surr.)	1	%	69
D5-N-EtFOSA (surr.)	1	%	67
D7-N-MeFOSE (surr.)	1	%	72
D9-N-EtFOSE (surr.)	1	%	73
D5-N-EtFOSAA (surr.)	1	%	83
D3-N-MeFOSAA (surr.)	1	%	80

Client Sample ID			QC202
Sample Matrix			Water
Eurofins Sample No.			S24-My0085958
Date Sampled			May 28, 2024
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.03
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	0.05
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.04
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.66
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]0.06
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]3.3
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	123
18O2-PFHxS (surr.)	1	%	109
13C8-PFOS (surr.)	1	%	97
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	0.65
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	%	191
13C2-6:2 FTSA (surr.)	1	%	145
13C2-8:2 FTSA (surr.)	1	%	119
13C2-10:2 FTSA (surr.)	1	%	101
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	3.96
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	3.44
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	4.1
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	5.41
Sum of PFASs (n=30)*	0.1	ug/L	5.58

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	Jun 05, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 05, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 05, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jun 05, 2024	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 05, 2024	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Jun 05, 2024	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jun 05, 2024	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Jun 05, 2024	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8 filtered	Sydney	Jun 05, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Volatile Organics	Sydney	Jun 05, 2024	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Jun 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Jun 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Jun 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Jun 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	May 30, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
+61 3 8564 5000
NATA# 1261
Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
+61 3 8564 5000
NATA# 1261
Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
+61 2 9900 8400
NATA# 1261
Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
+61 2 6113 8091
NATA# 1261
Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
T: +61 7 3902 4600
NATA# 1261
Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West
NSW 2304
+61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd
ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
+64 9 526 4551
IANZ# 1327

Auckland (Focus)
Unit C1/4 Pacific Rise,
Mount Wellington,
Auckland 1061
+64 9 525 0568
IANZ# 1308

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
+64 3 343 5201
IANZ# 1290

Tauranga
1277 Cameron Road,
Gate Pa,
Tauranga 3112
+64 9 525 0568
IANZ# 1402

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Senversa Pty Ltd NSW
Address: Level 24, 1 Market Street
SYDNEY
NSW 2000

Project Name: PEW INVESTIGATION
Project ID: S20283

Order No.:
Report #: 1102875
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: May 30, 2024 11:30 AM
Due: Jun 6, 2024
Priority: 5 Day
Contact Name: Naomi Lukeman

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Volatile Organics	Per- and Polyfluoroalkyl Substances (PFASs)	Suite B10B:TRH/BTEXN/PAH/OCP/OPP/PCB/M8
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	QC202	May 28, 2024		Water	S24-My0085958	X	X	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 follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
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 C6-C10	mg/L	< 0.02			0.02	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							
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	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	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							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1221	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB*	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	100			70-130	Pass	
TRH C10-C14	%	84			70-130	Pass	
TRH C6-C10	%	100			70-130	Pass	
TRH >C10-C16	%	93			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	90			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	%	91			70-130	Pass	
Ethylbenzene	%	94			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
o-Xylene	%	93			70-130	Pass	
Xylenes - Total*	%	94			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	83			70-130	Pass	
1.1.1-Trichloroethane	%	84			70-130	Pass	
1.2-Dichlorobenzene	%	110			70-130	Pass	
1.2-Dichloroethane	%	101			70-130	Pass	
Trichloroethene	%	84			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	102			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	76			70-130	Pass	
Acenaphthylene	%	86			70-130	Pass	
Anthracene	%	99			70-130	Pass	
Benz(a)anthracene	%	94			70-130	Pass	
Benzo(a)pyrene	%	104			70-130	Pass	
Benzo(b&j)fluoranthene	%	94			70-130	Pass	
Benzo(g.h.i)perylene	%	75			70-130	Pass	
Benzo(k)fluoranthene	%	104			70-130	Pass	
Chrysene	%	92			70-130	Pass	
Dibenz(a.h)anthracene	%	98			70-130	Pass	
Fluoranthene	%	109			70-130	Pass	
Fluorene	%	99			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	96			70-130	Pass	
Naphthalene	%	95			70-130	Pass	
Phenanthrene	%	104			70-130	Pass	
Pyrene	%	112			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	79			70-130	Pass	
4.4'-DDD	%	80			70-130	Pass	
4.4'-DDE	%	71			70-130	Pass	
4.4'-DDT	%	98			70-130	Pass	
a-HCH	%	80			70-130	Pass	
Aldrin	%	78			70-130	Pass	
b-HCH	%	74			70-130	Pass	
d-HCH	%	72			70-130	Pass	
Dieldrin	%	72			70-130	Pass	
Endosulfan I	%	78			70-130	Pass	
Endosulfan II	%	78			70-130	Pass	
Endosulfan sulphate	%	73			70-130	Pass	
Endrin	%	79			70-130	Pass	
Endrin aldehyde	%	79			70-130	Pass	
Endrin ketone	%	73			70-130	Pass	
g-HCH (Lindane)	%	72			70-130	Pass	
Heptachlor	%	99			70-130	Pass	
Heptachlor epoxide	%	89			70-130	Pass	
Hexachlorobenzene	%	76			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor	%	116			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Ethion	%	99			70-130	Pass	
Fenitrothion	%	72			70-130	Pass	
Methyl parathion	%	95			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	94			70-130	Pass	
Aroclor-1260	%	81			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	98			80-120	Pass	
Cadmium (filtered)	%	98			80-120	Pass	
Chromium (filtered)	%	94			80-120	Pass	
Copper (filtered)	%	90			80-120	Pass	
Lead (filtered)	%	84			80-120	Pass	
Mercury (filtered)	%	91			80-120	Pass	
Nickel (filtered)	%	92			80-120	Pass	
Zinc (filtered)	%	95			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	102			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	96			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	105			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	99			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	90			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	113			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	110			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	103			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	96			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	96			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	106			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	104			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	91			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	97			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	90			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	114			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	93			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	97			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	78			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	76			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	103			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	95			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	97			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	99			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)			%	105			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)			%	105			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)			%	94			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)			%	86			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	S24-Jn0005863	NCP	%	76			70-130	Pass	
TRH >C10-C16	S24-Jn0005863	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	R24-My0087707	NCP	%	102			70-130	Pass	
4.4'-DDD	R24-My0087707	NCP	%	94			70-130	Pass	
4.4'-DDE	R24-My0087707	NCP	%	84			70-130	Pass	
4.4'-DDT	R24-My0087707	NCP	%	116			70-130	Pass	
a-HCH	R24-My0087707	NCP	%	90			70-130	Pass	
Aldrin	R24-My0087707	NCP	%	92			70-130	Pass	
b-HCH	R24-My0087707	NCP	%	86			70-130	Pass	
d-HCH	R24-My0087707	NCP	%	81			70-130	Pass	
Dieldrin	R24-My0087707	NCP	%	90			70-130	Pass	
Endosulfan I	R24-My0087707	NCP	%	96			70-130	Pass	
Endosulfan II	R24-My0087707	NCP	%	95			70-130	Pass	
Endosulfan sulphate	R24-My0087707	NCP	%	81			70-130	Pass	
Endrin	R24-My0087707	NCP	%	95			70-130	Pass	
Endrin aldehyde	R24-My0087707	NCP	%	80			70-130	Pass	
Endrin ketone	R24-My0087707	NCP	%	101			70-130	Pass	
g-HCH (Lindane)	R24-My0087707	NCP	%	92			70-130	Pass	
Heptachlor	R24-My0087707	NCP	%	112			70-130	Pass	
Heptachlor epoxide	R24-My0087707	NCP	%	112			70-130	Pass	
Hexachlorobenzene	R24-My0087707	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Ethion	R24-My0087707	NCP	%	106			70-130	Pass	
Fenitrothion	R24-My0087707	NCP	%	75			70-130	Pass	
Methyl parathion	R24-My0087707	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	R24-My0087707	NCP	%	103			70-130	Pass	
Aroclor-1260	R24-My0087707	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S24-Jn0006761	NCP	%	99			75-125	Pass	
Cadmium (filtered)	S24-Jn0006761	NCP	%	99			75-125	Pass	
Chromium (filtered)	S24-Jn0006761	NCP	%	90			75-125	Pass	
Copper (filtered)	S24-Jn0006761	NCP	%	89			75-125	Pass	
Lead (filtered)	S24-Jn0006761	NCP	%	83			75-125	Pass	
Mercury (filtered)	S24-Jn0006761	NCP	%	87			75-125	Pass	
Nickel (filtered)	S24-Jn0006761	NCP	%	89			75-125	Pass	
Zinc (filtered)	S24-Jn0006761	NCP	%	94			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-My0087384	NCP	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-My0087384	NCP	%	102			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-My0087384	NCP	%	100			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroheptanoic acid (PFHpA)	S24-My0087384	NCP	%	113			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-My0087384	NCP	%	98			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-My0087384	NCP	%	98			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-My0087384	NCP	%	110			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-My0087384	NCP	%	107			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-My0087384	NCP	%	115			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-My0087384	NCP	%	127			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-My0087384	NCP	%	101			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-My0087384	NCP	%	96			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-My0087384	NCP	%	97			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-My0087384	NCP	%	105			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-My0087384	NCP	%	97			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-My0087384	NCP	%	90			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-My0087384	NCP	%	100			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-My0087384	NCP	%	96			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-My0087384	NCP	%	89			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-My0087384	NCP	%	107			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-My0087384	NCP	%	81			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-My0087384	NCP	%	79			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-My0087384	NCP	%	85			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-My0087384	NCP	%	106			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-My0087384	NCP	%	118			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-My0087384	NCP	%	87			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-My0087384	NCP	%	112			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-My0087384	NCP	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-My0087384	NCP	%	92			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-My0087384	NCP	%	97			50-150	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	S24-Jn0002144	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S24-Jn0003090	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S24-Jn0003090	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S24-Jn0003090	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S24-Jn0002144	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S24-Jn0003090	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S24-Jn0003090	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S24-Jn0003090	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S24-Jn0002144	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S24-Jn0002144	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chlorotoluene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloroform	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
cis-1.2-Dichloroethene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Dibromochloromethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Iodomethane	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Styrene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S24-Jn0002144	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vinyl chloride	S24-Jn0002144	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S24-Jn0002144	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S24-My0085958	CP	mg/L	0.004	0.003	22	30%	Pass	
Phenanthrene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S24-My0085958	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor epoxide	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Hexachlorobenzene	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	S24-My0085958	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	S24-My0085958	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	S24-My0085958	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	S24-My0085958	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	S24-My0085958	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	S24-My0085958	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	S24-My0085958	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S24-My0085958	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1221	S24-My0085958	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1232	S24-My0085958	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1242	S24-My0085958	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1248	S24-My0085958	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1254	S24-My0085958	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1260	S24-My0085958	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Total PCB*	S24-My0085958	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S24-My0051522	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S24-My0080161	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S24-My0080161	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S24-My0080161	NCP	mg/L	0.004	0.004	3.3	30%	Pass	
Lead (filtered)	S24-My0080161	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S24-My0051522	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S24-My0080161	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	S24-My0080161	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-My0087383	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-My0087383	NCP	ug/L	0.02	0.02	17	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-My0087383	NCP	ug/L	0.02	0.01	3.5	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-My0087383	NCP	ug/L	< 0.01	0.01	9.0	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-My0087383	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-My0087383	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-My0087383	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-My0087383	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-My0087383	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-My0087383	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-My0087383	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-My0087383	NCP	ug/L	0.05	0.05	12	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-My0087383	NCP	ug/L	0.11	0.13	20	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-My0087383	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-My0087383	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Nileshni Goundar	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-PFAS
Roopesh Rangarajan	Senior Analyst-Volatile



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

senversa

Senversa Pty Ltd
www.senversa.com.au
ABN 89 137 231 380

Chain of Custody Documentation

Laboratory: ALS NSW
Address: 5/585 Maitland Road, Mayfield West
Contact: Sample Receipt
Email: samples.newcastle@alsglobal.com

Sudden Forward Split WO
Lab / Analysis: BRISbane ASS
Organised By / Date: eurofins 29/5 @1203
Relinquished By / Date: @1204
Courier
WO No: ES2417818
Attached By (PC) Internal

Job number:	S20283	Purchase Order:			
Project Name:	PFW Investigation	Quote Number:			
Sampled By:	Megan Ferguson	Turn Around time	Standard		
Project Manager:	Naomi Lukeman	Page:	1	of	1
Email Report To:	megan.ferguson@senversa.com.au, naomi.lukeman@senversa.com.au	Phone/Mobile	0455 981 953		

							14	5	16	5	3	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sample Name		Location	Depth Top	Depth Base	Date Time	Matrix	TRH, BTEX, PAH, phenols, OCP, OPP, PCB, 8 metals (incl digestion)	Asbestos absence/presence	PFAS - Short Suite (12 analytes)	Chromium sulfur reducible sulfur	TRH, BTEXN	HOLD															Comments
TP01_0.0-0.1	1	TP01	0	0.1	29/05/2024 14:23	Soil	X	X	X																		
TP01_0.2-0.3	2	TP01	0.2	0.3	29/05/2024 14:23	Soil						X															
TP01_0.4-0.5	3	TP01	0.4	0.5	29/05/2024 14:23	Soil	X		X																		
TP01_0.8-0.9	4	TP01	0.8	0.9	29/05/2024 14:23	Soil	X		X																		
TP01_1.3-1.4	5	TP01	1.3	1.4	29/05/2024 14:33	Soil				X																	
TP02_0.0-0.1	6	TP02	0	0.1	29/05/2024 10:10	Soil	X	X	X																		
TP02_0.4-0.5	7	TP02	0.4	0.5	29/05/2024 10:10	Soil						X															
TP02_1.0-1.1	8	TP02	1	1.1	29/05/2024 10:10	Soil						X															
TP02_1.2 1.3	9	TP02	1.2	1.3	29/05/2024 10:10	Soil	X		X																		
TP02_1.3-1.4	10	TP02	1.3	1.4	29/05/2024 10:11	Soil				X																	
TP03_0.0-0.1	11	TP03	0	0.1	29/05/2024 10:49	Soil	X		X																		
TP03_0.4-0.5	12	TP03	0.4	0.5	29/05/2024 10:49	Soil	X	X	X																		
TP03_0.7-0.8	13	TP03	0.7	0.8	29/05/2024 10:49	Soil						X															
TP03_1.1-1.2	14	TP03	1.1	1.2	29/05/2024 11:02	Soil	X		X	X																	
TP03_1.3-1.4	15	TP03	1.3	1.4	29/05/2024 11:02	Soil						X															
TP04_0.0-0.1	16	TP04	0	0.1	29/05/2024 12:00	Soil	X	X	X																		
TP04_0.4-0.5	17	TP04	0.4	0.5	29/05/2024 12:01	Soil						X															
TP04_1.0-1.1	18	TP04	1	1.1	29/05/2024 12:01	Soil						X															
TP04_1.2-1.3	19	TP04	1.2	1.3	29/05/2024 12:01	Soil	X		X																		
TP04_1.3-1.4	20	TP04	1.3	1.4	29/05/2024 12:01	Soil				X																	
TP05_0.0-0.1	21	TP05	0	0.1	29/05/2024 13:22	Soil	X	X	X																		
TP05_0.3-0.4	22	TP05	0.3	0.4	29/05/2024 13:23	Soil						X															
TP05_0.8-0.9	23	TP05	0.8	0.9	29/05/2024 13:29	Soil						X															
TP05_1.2-1.3	24	TP05	1.2	1.3	29/05/2024 13:43	Soil	X		X	X																	
TP05_1.3-1.4	25	TP05	1.3	1.4	29/05/2024 13:43	Soil						X															
QC103	26				29/05/2024	Soil	X		X																		
QC203					29/05/2024	Soil	X		X																		Please forward to Eurofins
QC104	27				29/05/2024	Soil			X																		
QC204					29/05/2024	Soil			X																		Please forward to Eurofins
QC402	28				29/05/2024	Soil					X																
QC500	29				29/05/2024	Soil					X																Trip spike
TSC	30										X																
Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:											Signature:	M Ferguson														Date 29/05/2024	

Relinquished By:			Method of Shipment (if applic	Received by:	
Name/Signature:	Megan Ferguson	Date: 29/05/2024	Carrier / Reference #:	Name/Signature:	Date:
Of:	Senversa	Time: 4pm	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial- Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved whole plastic bottle; SW = sulfuric acid preserved wide mouth glass jar

LAB OF ORIGIN:
NEWCASTLE

EMAILED

Environmental Division
Sydney
Work Order Reference
ES2417818

Telephone : + 61-2-8784 8555

1103506

Brisbane
3:15pm
12:50
9.4°C

REC 29/5 @ 3:40pm
8.2°ice
Rel: JN 30.5.24 1700
Rec. [illegible] 30/05/24 19:45

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd

ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Senversa Pty Ltd NSW
Contact name: Naomi Lukeman
Project name: PEW INVESTIGATION
Project ID: S20283
Turnaround time: 5 Day
Date/Time received May 31, 2024 12:30 PM
Eurofins reference 1103506

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.
✓	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:

Adam Bateup on phone : or by email: AdamBateup@eurofins.com

Results will be delivered electronically via email to Naomi Lukeman - Naomi.Lukeman@senversa.com.au.

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

Global Leader - Results you can trust

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
+61 3 8564 5000
NATA# 1261
Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
+61 3 8564 5000
NATA# 1261
Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
+61 2 9900 8400
NATA# 1261
Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
+61 2 6113 8091
NATA# 1261
Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
T: +61 7 3902 4600
NATA# 1261
Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West
NSW 2304
+61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd
ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
+64 9 526 4551
IANZ# 1327

Auckland (Focus)
Unit C1/4 Pacific Rise,
Mount Wellington,
Auckland 1061
+64 9 525 0568
IANZ# 1308

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
+64 3 343 5201
IANZ# 1290

Tauranga
1277 Cameron Road,
Gate Pa,
Tauranga 3112
+64 9 525 0568
IANZ# 1402

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Senversa Pty Ltd NSW
Address: Level 24, 1 Market Street
SYDNEY
NSW 2000

Project Name: PEW INVESTIGATION
Project ID: S20283

Order No.:
Report #: 1103506
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: May 31, 2024 12:30 PM
Due: Jun 7, 2024
Priority: 5 Day
Contact Name: Naomi Lukeman

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Moisture Set	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Suite B10C: M8/BTEX/TRH/PAH/Phenol/OCP/OPP/PCB
Sydney Laboratory - NATA # 1261 Site # 18217						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	QC203	May 29, 2024		Soil	S24-My0091430		X	X	X
2	QC204	May 29, 2024		Soil	S24-My0091431	X		X	
Test Counts						2	2	2	1

Senversa Pty Ltd NSW
Level 24, 1 Market Street
SYDNEY
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Naomi Lukeman**

Report **1103506-S**
Project name PEW INVESTIGATION
Project ID S20283
Received Date May 31, 2024

Client Sample ID			**QC203**	**QC204**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S24-My0091430**	**S24-My0091431**
Date Sampled			**May 29, 2024**	**May 29, 2024**
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	%	99	-
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	-
Chrysene	0.5	mg/kg	< 0.5	-

Client Sample ID			QC203	QC204
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-My0091430	S24-My0091431
Date Sampled			May 29, 2024	May 29, 2024
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
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	%	81	-
p-Terphenyl-d14 (surr.)	1	%	80	-
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	%	102	-
Tetrachloro-m-xylene (surr.)	1	%	81	-
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-
Coumaphos	2	mg/kg	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-

Client Sample ID			QC203	QC204
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-My0091430	S24-My0091431
Date Sampled			May 29, 2024	May 29, 2024
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Dimethoate	0.2	mg/kg	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-
Naled	0.2	mg/kg	< 0.2	-
Omethoate	2	mg/kg	< 2	-
Phorate	0.2	mg/kg	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-
Triphenylphosphate (surr.)	1	%	101	-
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	%	102	-
Tetrachloro-m-xylene (surr.)	1	%	81	-
Phenols (Halogenated)				
2-Chlorophenol	0.5	mg/kg	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-
Pentachlorophenol	1	mg/kg	< 1	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-
Total Halogenated Phenol*	1	mg/kg	< 1	-

Client Sample ID			QC203	QC204
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-My0091430	S24-My0091431
Date Sampled			May 29, 2024	May 29, 2024
Test/Reference	LOR	Unit		
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-
2-Nitrophenol	1	mg/kg	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-
Total cresols*	0.5	mg/kg	< 0.5	-
4-Nitrophenol	5	mg/kg	< 5	-
Dinoseb	20	mg/kg	< 20	-
Phenol	0.5	mg/kg	< 0.5	-
Phenol-d6 (surr.)	1	%	71	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-
Heavy Metals				
Arsenic	2	mg/kg	< 2	-
Cadmium	0.4	mg/kg	< 0.4	-
Chromium	5	mg/kg	14	-
Copper	5	mg/kg	9.6	-
Lead	5	mg/kg	6.5	-
Mercury	0.1	mg/kg	< 0.1	-
Nickel	5	mg/kg	5.4	-
Zinc	5	mg/kg	44	-
Sample Properties				
% Moisture	1	%	8.2	6.7
Per- and Polyfluoroalkyl Substances (PFASs) - Short				
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10
13C2-6:2 FTSA (surr.)	1	%	95	89
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	[N09]6.5
18O2-PFHxS (surr.)	1	%	86	86
13C8-PFOS (surr.)	1	%	80	84
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5
13C8-PFOA (surr.)	1	%	95	93
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	6.5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	6.5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	6.5

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	Jun 04, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Jun 04, 2024	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Jun 04, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Brisbane	May 31, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs) - Short	Brisbane	Jun 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
+61 3 8564 5000
NATA# 1261
Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
+61 3 8564 5000
NATA# 1261
Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
+61 2 9900 8400
NATA# 1261
Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
+61 2 6113 8091
NATA# 1261
Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
T: +61 7 3902 4600
NATA# 1261
Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West
NSW 2304
+61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd
ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
+64 9 526 4551
IANZ# 1327

Auckland (Focus)
Unit C1/4 Pacific Rise,
Mount Wellington,
Auckland 1061
+64 9 525 0568
IANZ# 1308

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
+64 3 343 5201
IANZ# 1290

Tauranga
1277 Cameron Road,
Gate Pa,
Tauranga 3112
+64 9 525 0568
IANZ# 1402

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Senversa Pty Ltd NSW
Address: Level 24, 1 Market Street
SYDNEY
NSW 2000

Project Name: PEW INVESTIGATION
Project ID: S20283

Order No.:
Report #: 1103506
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: May 31, 2024 12:30 PM
Due: Jun 7, 2024
Priority: 5 Day
Contact Name: Naomi Lukeman

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Moisture Set	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Suite B10C: M8/BTEX/TRH/PAH/Phenol/OCP/OPP/PCB
Sydney Laboratory - NATA # 1261 Site # 18217						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	QC203	May 29, 2024		Soil	S24-My0091430		X	X	X
2	QC204	May 29, 2024		Soil	S24-My0091431	X		X	
Test Counts						2	2	2	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 follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
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							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Nitrophenol	mg/kg	< 1			1	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	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							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	94			70-130	Pass	
TRH C10-C14	%	73			70-130	Pass	
TRH C6-C10	%	89			70-130	Pass	
TRH >C10-C16	%	72			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	95			70-130	Pass	
Toluene	%	97			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	93			70-130	Pass	
o-Xylene	%	93			70-130	Pass	
Xylenes - Total*	%	93			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	100			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	84			70-130	Pass	
Acenaphthylene	%	85			70-130	Pass	
Anthracene	%	80			70-130	Pass	
Benz(a)anthracene	%	99			70-130	Pass	
Benzo(a)pyrene	%	76			70-130	Pass	
Benzo(b&j)fluoranthene	%	113			70-130	Pass	
Benzo(g.h.i)perylene	%	97			70-130	Pass	
Benzo(k)fluoranthene	%	87			70-130	Pass	
Chrysene	%	121			70-130	Pass	
Dibenz(a.h)anthracene	%	90			70-130	Pass	
Fluoranthene	%	83			70-130	Pass	
Fluorene	%	82			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	92			70-130	Pass	
Naphthalene	%	87			70-130	Pass	
Phenanthrene	%	92			70-130	Pass	
Pyrene	%	82			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	88			70-130	Pass	
4.4'-DDD	%	84			70-130	Pass	
4.4'-DDE	%	89			70-130	Pass	
4.4'-DDT	%	87			70-130	Pass	
a-HCH	%	82			70-130	Pass	
Aldrin	%	86			70-130	Pass	
b-HCH	%	73			70-130	Pass	
d-HCH	%	73			70-130	Pass	
Dieldrin	%	88			70-130	Pass	
Endosulfan I	%	92			70-130	Pass	
Endosulfan II	%	82			70-130	Pass	
Endosulfan sulphate	%	88			70-130	Pass	
Endrin	%	90			70-130	Pass	
Endrin aldehyde	%	90			70-130	Pass	
Endrin ketone	%	96			70-130	Pass	
g-HCH (Lindane)	%	81			70-130	Pass	
Heptachlor	%	85			70-130	Pass	
Heptachlor epoxide	%	85			70-130	Pass	
Hexachlorobenzene	%	82			70-130	Pass	
Methoxychlor	%	88			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	115			70-130	Pass	
Dimethoate	%	90			70-130	Pass	
Ethion	%	117			70-130	Pass	
Fenitrothion	%	71			70-130	Pass	
Methyl parathion	%	93			70-130	Pass	
Mevinphos	%	83			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	95			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	%	78			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	93			25-140	Pass	
2.4-Dichlorophenol	%	98			25-140	Pass	
2.4.5-Trichlorophenol	%	96			25-140	Pass	
2.4.6-Trichlorophenol	%	91			25-140	Pass	
2.6-Dichlorophenol	%	99			25-140	Pass	
4-Chloro-3-methylphenol	%	88			25-140	Pass	
Pentachlorophenol	%	90			25-140	Pass	
Tetrachlorophenols - Total	%	96			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	98			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	95			25-140	Pass	
2-Nitrophenol	%	97			25-140	Pass	
2.4-Dimethylphenol	%	106			25-140	Pass	
2.4-Dinitrophenol	%	89			25-140	Pass	
2-Methylphenol (o-Cresol)	%	94			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	92			25-140	Pass	
4-Nitrophenol	%	82			25-140	Pass	
Dinoseb	%	102			25-140	Pass	
Phenol	%	92			25-140	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	104			80-120	Pass	
Cadmium	%	104			80-120	Pass	
Chromium	%	104			80-120	Pass	
Copper	%	103			80-120	Pass	
Lead	%	95			80-120	Pass	
Mercury	%	99			80-120	Pass	
Nickel	%	104			80-120	Pass	
Zinc	%	102			80-120	Pass	
LCS - % Recovery							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	85			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	85			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	103			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	S24-Jn0000240	NCP	%	91			70-130	Pass	
TRH C10-C14	N24-My0084429	NCP	%	84			70-130	Pass	
TRH C6-C10	S24-Jn0000240	NCP	%	86			70-130	Pass	
TRH >C10-C16	N24-My0084429	NCP	%	84			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S24-Jn0000240	NCP	%	84			70-130	Pass	
Toluene	S24-Jn0000240	NCP	%	91			70-130	Pass	
Ethylbenzene	S24-Jn0000240	NCP	%	93			70-130	Pass	
m&p-Xylenes	S24-Jn0000240	NCP	%	84			70-130	Pass	
o-Xylene	S24-Jn0000240	NCP	%	84			70-130	Pass	
Xylenes - Total*	S24-Jn0000240	NCP	%	84			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S24-Jn0000240	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S24-My0089417	NCP	%	83			70-130	Pass	
4.4'-DDD	S24-My0089417	NCP	%	80			70-130	Pass	
4.4'-DDE	S24-My0089417	NCP	%	83			70-130	Pass	
4.4'-DDT	S24-My0089417	NCP	%	75			70-130	Pass	
a-HCH	S24-My0089417	NCP	%	81			70-130	Pass	
Aldrin	S24-My0089417	NCP	%	81			70-130	Pass	
b-HCH	S24-My0089417	NCP	%	77			70-130	Pass	
d-HCH	S24-My0089417	NCP	%	76			70-130	Pass	
Dieldrin	S24-My0089417	NCP	%	83			70-130	Pass	
Endosulfan I	S24-My0089417	NCP	%	87			70-130	Pass	
Endosulfan II	S24-My0089417	NCP	%	79			70-130	Pass	
Endosulfan sulphate	S24-My0089417	NCP	%	81			70-130	Pass	
Endrin	S24-My0089417	NCP	%	87			70-130	Pass	
Endrin aldehyde	S24-My0089417	NCP	%	84			70-130	Pass	
Endrin ketone	S24-My0089417	NCP	%	84			70-130	Pass	
g-HCH (Lindane)	S24-My0089417	NCP	%	82			70-130	Pass	
Heptachlor	S24-My0089417	NCP	%	76			70-130	Pass	
Heptachlor epoxide	S24-My0089417	NCP	%	81			70-130	Pass	
Hexachlorobenzene	S24-My0089417	NCP	%	81			70-130	Pass	
Methoxychlor	S24-My0089417	NCP	%	73			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S24-My0089417	NCP	%	111			70-130	Pass	
Dimethoate	S24-My0089417	NCP	%	78			70-130	Pass	
Ethion	S24-My0089417	NCP	%	102			70-130	Pass	
Fenitrothion	S24-My0066967	NCP	%	78			70-130	Pass	
Methyl parathion	S24-My0089417	NCP	%	78			70-130	Pass	
Mevinphos	S24-My0089417	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S24-My0087209	NCP	%	87			75-125	Pass	
Cadmium	S24-My0087209	NCP	%	90			75-125	Pass	
Chromium	S24-My0087209	NCP	%	87			75-125	Pass	
Copper	S24-My0087209	NCP	%	90			75-125	Pass	
Lead	S24-My0087209	NCP	%	91			75-125	Pass	
Mercury	S24-My0087209	NCP	%	86			75-125	Pass	
Nickel	S24-My0087209	NCP	%	93			75-125	Pass	
Zinc	S24-My0087209	NCP	%	88			75-125	Pass	
Spike - % Recovery									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1					
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-My0081918	NCP	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-My0091477	NCP	%	85			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-My0091477	NCP	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-My0091477	NCP	%	89			50-150	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	S24-My0090821	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S24-My0085540	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S24-My0085540	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S24-My0085540	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	S24-My0090821	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S24-My0085540	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S24-My0085540	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S24-My0085540	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S24-My0090821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S24-My0090821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S24-My0090821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S24-My0090821	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S24-My0090821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S24-My0090821	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S24-My0090821	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S24-My0089414	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin aldehyde	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S24-My0089414	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S24-My0089414	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S24-My0089414	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S24-My0074113	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	S24-My0074113	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S24-My0074113	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	S24-My0074113	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	S24-My0074113	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S24-My0074113	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S24-My0074113	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S24-My0074113	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S24-My0074113	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S24-My0074113	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Nitrophenol	S24-My0074113	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	S24-My0074113	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	S24-My0074113	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
4-Nitrophenol	S24-My0074113	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S24-My0074113	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S24-My0091132	NCP	mg/kg	3.4	2.9	16	30%	Pass	
Cadmium	S24-My0091430	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S24-My0091430	CP	mg/kg	14	11	25	30%	Pass	
Copper	S24-My0091430	CP	mg/kg	9.6	8.4	14	30%	Pass	
Lead	S24-My0091430	CP	mg/kg	6.5	5.7	13	30%	Pass	
Mercury	S24-My0091430	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S24-My0091430	CP	mg/kg	5.4	< 5	25	30%	Pass	
Zinc	S24-My0091430	CP	mg/kg	44	37	16	30%	Pass	
Duplicate									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-My0091476	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-My0091476	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-My0091476	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-My0091476	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	B24-My0085518	NCP	%	31	33	6.1	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
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.

Authorised by:

Adam Bateup	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal
Jonathon Angell	Senior Analyst-PFAS
Jonathon Angell	Senior Analyst-Sample Properties
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Sample Properties
Roopesh Rangarajan	Senior Analyst-Volatile



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

senversa

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Chain of Custody Documentation

Laboratory: ALS NSW
Address: 5/585 Maitland Road, Mayfield West
Contact: Sample receipt
Email: samples.newcastle@alsglobal.com

Job number:	S20283	Purchase Order:			
Project Name:	PFW Investigation	Quote Number:			
Sampled By:	Megan Ferguson	Turn Around time	Standard		
Project Manager:	Naomi Lukeman	Page:	1	of	1
Email Report To:	megan.ferguson@senversa.com.au, naomi.lukeman@senversa.com.au	Phone/Mobile	0455 981 953		

						15	3	18	19	3	0	0	0	0	0	0	0	0	0	0	0	0	0			
Sample Name	Location	Depth Top	Depth Base	Date Time	Matrix	TRH, BTEX, PAH, phenols, OCP, OPP, PCB, 8 metals (incl digestion)	Asbestos: absence/presence	PFAS - Short Suite (12 analytes)	Hold	Chromium sulfur reducible suite														HOLD	Comments
S20283	LocationDetails LocationID	DepthTop	DepthBase	DateTimeSampled	Type																					
MW01_0.0-0.1	MW01	0	0.1	20/05/2024 10:20	Soil	X	X	X																		Glass jar, PFAS, Asbestos
MW01_0.5-0.6	MW01	0.5	0.6	20/05/2024 10:20	Soil				X																	Glass jar, PFAS, Asbestos
MW01_1.0-1.1	MW01	1	1.1	20/05/2024 10:20	Soil	X		X																		Glass jar, PFAS, Asbestos
MW01_1.1-1.2	MW01	1.1	1.2	20/05/2024 11:17	Soil	X		X																		Glass jar, PFAS
MW01_1.4-1.5	MW01	1.4	1.5	20/05/2024 11:17	Soil	X		X																		Glass jar, PFAS, ASS
MW01_1.7-1.8	MW01	1.7	1.8	20/05/2024 11:17	Soil				X																	Glass jar, PFAS
MW01_2.5-2.6	MW01	2.5	2.6	20/05/2024 11:17	Soil				X																	Glass jar, PFAS
MW01_3.8-3.9	MW01	3.8	3.9	20/05/2024 11:17	Soil	X		X																		Glass jar, PFAS, ASS
MW01_4.5-4.6	MW01	4.5	4.6	20/05/2024 11:18	Soil					x																Glass jar, PFAS, ASS
MW01_5.5-5.6	MW01	5.5	5.6	20/05/2024 11:18	Soil				X																	Glass jar, PFAS, ASS
MW01_6.9-7.0	MW01	6.9	7	20/05/2024 11:18	Soil				X																	Glass jar, PFAS
MW02_0.0-0.1	MW02	0	0.1	20/05/2024 14:05	Soil	X	X	X																		Glass jar, PFAS, Asbestos
MW02_0.5-0.6	MW02	0.5	0.6	20/05/2024 14:05	Soil				X																	Glass jar, PFAS, Asbestos
MW02_1.0-1.1	MW02	1	1.1	20/05/2024 14:05	Soil				X																	Glass jar, PFAS, Asbestos
MW02_1.4-1.5	MW02	1.4	1.5	20/05/2024 14:05	Soil				X																	Glass jar, PFAS, Asbestos
MW02_2.0-2.1	MW02	2	2.1	20/05/2024 14:05	Soil	X		X																		Glass jar, PFAS
MW02_2.4-2.5	MW02	2.4	2.5	20/05/2024 14:05	Soil					x																Glass jar, PFAS, ASS
MW02_3.0-3.1	MW02	3	3.1	20/05/2024 14:06	Soil	X		X																		Glass jar, PFAS
MW02_4.0-4.1	MW02	4	4.1	20/05/2024 14:06	Soil				X																	Glass jar, PFAS, ASS
MW02_5.0-5.1	MW02	5	5.1	20/05/2024 14:06	Soil	X		X																		Glass jar, PFAS, ASS
MW02_6.0-6.1	MW02	6	6.1	20/05/2024 14:06	Soil				X																	Glass jar, PFAS, ASS
MW02_6.9-7.0	MW02	6.9	7	20/05/2024 14:06	Soil				X																	Glass jar, PFAS
MW03_0.0-0.1	MW03	0	0.1	20/05/2024 14:07	Soil	X	X	X																		Glass jar, PFAS, Asbestos
MW03_0.5-0.6	MW03	0.5	0.6	20/05/2024 14:08	Soil				X																	Glass jar, PFAS, Asbestos
MW03_1.0-1.1	MW03	1	1.1	20/05/2024 14:08	Soil				X																	Glass jar, PFAS, Asbestos
MW03_1.5-1.6	MW03	1.5	1.6	20/05/2024 14:08	Soil	X		X		x																Glass jar, PFAS
MW03_1.9-2.0	MW03	1.9	2	20/05/2024 14:08	Soil				X																	Glass jar, PFAS, ASS
MW03_2.5-2.6	MW03	2.5	2.6	20/05/2024 14:08	Soil				X																	Glass jar, PFAS
MW03_3.5-3.6	MW03	3.5	3.6	20/05/2024 14:08	Soil	X		X																		Glass jar, PFAS, ASS
MW03_4.5-4.6	MW03	4.5	4.6	20/05/2024 14:09	Soil				X																	Glass jar, PFAS, ASS
MW03_6.0-6.1	MW03	6	6.1	20/05/2024 14:09	Soil				X																	Glass jar, PFAS, ASS
MW03_6.9-7.0	MW03	6.9	7	20/05/2024 14:09	Soil				X																	Glass jar, PFAS
QC100				20/05/2024	Soil	X		X																		
QC200				20/05/2024	Soil	X		X																		Please forward to Eurofins
QC101				20/05/2024	Soil			X																		
QC201				20/05/2024	Soil			X																		Please forward to Eurofins
QC300				20/05/2024	Water	X		X																		
QC301				20/05/2024	Water				X																	
QC400				20/05/2024	Water			X																		

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Signature: Megan Ferguson **Date** 20/05/2024

Relinquished By:			Method of Shipment (if applic	Received by:	
Name/Signature:	Megan Ferguson	Date: 20/05/2024	Carrier / Reference #:	Name/Signature:	Date:
Of:	Senversa	Time: 4:45pm	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; B = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW = sulfuric acid preserved wide mouth glass jar

Subc... Split WO#
Lab / Analysis: BR Skove ASS
Organised By / Date: Newcastle Asbos
Relinquished By / Date: Eurofins QC20 QC2C
Connote / Courier:
WO No: ES2417817
Attached By PC - Printed / Sent

EMAILED
LAB OF ORIGIN:
NEWCASTLE

Environmental Division
Sydney
Work Order Reference
ES2417817

Telephone : + 61-2-8784 8555

Brenda
3/11 9.2
12.30
9.4

REC 29/5 6:30pm
8.2 ice
Rec. Mark 30/05/24 1945

1103508

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd

ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Senversa Pty Ltd NSW
Contact name: Naomi Lukeman
Project name: PEW INVESTIGATION
Project ID: S20283
Turnaround time: 5 Day
Date/Time received May 31, 2024 12:30 PM
Eurofins reference 1103508

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.
✓	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:

Adam Bateup on phone : or by email: AdamBateup@eurofins.com

Results will be delivered electronically via email to Naomi Lukeman - Naomi.Lukeman@senversa.com.au.

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

Global Leader - Results you can trust

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd
ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Senversa Pty Ltd NSW
Address: Level 24, 1 Market Street
SYDNEY
NSW 2000

Project Name: PEW INVESTIGATION
Project ID: S20283

Order No.:
Report #: 1103508
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: May 31, 2024 12:30 PM
Due: Jun 7, 2024
Priority: 5 Day
Contact Name: Naomi Lukeman

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Moisture Set	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Suite B10C: M8/BTEX/TRH/PAH/Phenol/OCP/OPP/PCB
Sydney Laboratory - NATA # 1261 Site # 18217						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	QC200	May 20, 2024		Soil	S24-My0091476		X	X	X
2	QC201	May 20, 2024		Soil	S24-My0091477	X		X	
Test Counts						2	2	2	1

Senversa Pty Ltd NSW
Level 24, 1 Market Street
SYDNEY
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Naomi Lukeman**

Report **1103508-S**
Project name PEW INVESTIGATION
Project ID S20283
Received Date May 31, 2024

Client Sample ID			**QC200**	**QC201**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S24-My0091476**	**S24-My0091477**
Date Sampled			**May 20, 2024**	**May 20, 2024**
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	%	114	-
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	-
Chrysene	0.5	mg/kg	< 0.5	-

Client Sample ID			QC200	QC201
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-My0091476	S24-My0091477
Date Sampled			May 20, 2024	May 20, 2024
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
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	%	78	-
p-Terphenyl-d14 (surr.)	1	%	79	-
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	%	89	-
Tetrachloro-m-xylene (surr.)	1	%	76	-
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-
Coumaphos	2	mg/kg	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-

Client Sample ID			QC200	QC201
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-My0091476	S24-My0091477
Date Sampled			May 20, 2024	May 20, 2024
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Dimethoate	0.2	mg/kg	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-
Naled	0.2	mg/kg	< 0.2	-
Omethoate	2	mg/kg	< 2	-
Phorate	0.2	mg/kg	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-
Triphenylphosphate (surr.)	1	%	85	-
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	%	89	-
Tetrachloro-m-xylene (surr.)	1	%	76	-
Phenols (Halogenated)				
2-Chlorophenol	0.5	mg/kg	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-
Pentachlorophenol	1	mg/kg	< 1	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-
Total Halogenated Phenol*	1	mg/kg	< 1	-

Client Sample ID			QC200	QC201
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-My0091476	S24-My0091477
Date Sampled			May 20, 2024	May 20, 2024
Test/Reference	LOR	Unit		
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-
2-Nitrophenol	1	mg/kg	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-
Total cresols*	0.5	mg/kg	< 0.5	-
4-Nitrophenol	5	mg/kg	< 5	-
Dinoseb	20	mg/kg	< 20	-
Phenol	0.5	mg/kg	< 0.5	-
Phenol-d6 (surr.)	1	%	68	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-
Heavy Metals				
Arsenic	2	mg/kg	< 2	-
Cadmium	0.4	mg/kg	< 0.4	-
Chromium	5	mg/kg	18	-
Copper	5	mg/kg	14	-
Lead	5	mg/kg	< 5	-
Mercury	0.1	mg/kg	< 0.1	-
Nickel	5	mg/kg	11	-
Zinc	5	mg/kg	38	-
Sample Properties				
% Moisture	1	%	5.6	5.3
Per- and Polyfluoroalkyl Substances (PFASs) - Short				
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10
13C2-6:2 FTSA (surr.)	1	%	97	102
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5
18O2-PFHxS (surr.)	1	%	98	91
13C8-PFOS (surr.)	1	%	86	83
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5
13C8-PFOA (surr.)	1	%	102	93
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

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	Jun 04, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Jun 04, 2024	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Sydney	Jun 04, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Jun 04, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Brisbane	May 31, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs) - Short	Brisbane	Jun 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd
ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Senversa Pty Ltd NSW
Address: Level 24, 1 Market Street
SYDNEY
NSW 2000

Project Name: PEW INVESTIGATION
Project ID: S20283

Order No.:
Report #: 1103508
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: May 31, 2024 12:30 PM
Due: Jun 7, 2024
Priority: 5 Day
Contact Name: Naomi Lukeman

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Moisture Set	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs) - Short	Suite B10C: M8/BTEX/TRH/PAH/Phenol/OCP/OPP/PCB
Sydney Laboratory - NATA # 1261 Site # 18217						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	QC200	May 20, 2024		Soil	S24-My0091476		X	X	X
2	QC201	May 20, 2024		Soil	S24-My0091477	X		X	
Test Counts						2	2	2	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 follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
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							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Nitrophenol	mg/kg	< 1			1	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Total Non-Halogenated Phenol*	mg/kg	-			20	N/A	
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							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	94			70-130	Pass	
TRH C10-C14	%	73			70-130	Pass	
TRH C6-C10	%	89			70-130	Pass	
TRH >C10-C16	%	72			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	95			70-130	Pass	
Toluene	%	97			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	93			70-130	Pass	
o-Xylene	%	93			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total*	%	93			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	100			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	84			70-130	Pass	
Acenaphthylene	%	85			70-130	Pass	
Anthracene	%	80			70-130	Pass	
Benz(a)anthracene	%	99			70-130	Pass	
Benzo(a)pyrene	%	76			70-130	Pass	
Benzo(b&j)fluoranthene	%	113			70-130	Pass	
Benzo(g.h.i)perylene	%	97			70-130	Pass	
Benzo(k)fluoranthene	%	87			70-130	Pass	
Chrysene	%	121			70-130	Pass	
Dibenz(a.h)anthracene	%	90			70-130	Pass	
Fluoranthene	%	83			70-130	Pass	
Fluorene	%	82			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	92			70-130	Pass	
Naphthalene	%	87			70-130	Pass	
Phenanthrene	%	92			70-130	Pass	
Pyrene	%	82			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	88			70-130	Pass	
4.4'-DDD	%	84			70-130	Pass	
4.4'-DDE	%	89			70-130	Pass	
4.4'-DDT	%	87			70-130	Pass	
a-HCH	%	82			70-130	Pass	
Aldrin	%	86			70-130	Pass	
b-HCH	%	73			70-130	Pass	
d-HCH	%	73			70-130	Pass	
Dieldrin	%	88			70-130	Pass	
Endosulfan I	%	92			70-130	Pass	
Endosulfan II	%	82			70-130	Pass	
Endosulfan sulphate	%	88			70-130	Pass	
Endrin	%	90			70-130	Pass	
Endrin aldehyde	%	90			70-130	Pass	
Endrin ketone	%	96			70-130	Pass	
g-HCH (Lindane)	%	81			70-130	Pass	
Heptachlor	%	85			70-130	Pass	
Heptachlor epoxide	%	85			70-130	Pass	
Hexachlorobenzene	%	82			70-130	Pass	
Methoxychlor	%	88			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	115			70-130	Pass	
Dimethoate	%	90			70-130	Pass	
Ethion	%	117			70-130	Pass	
Fenitrothion	%	71			70-130	Pass	
Methyl parathion	%	93			70-130	Pass	
Mevinphos	%	83			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1016	%	95			70-130	Pass	
Aroclor-1260	%	78			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	93			25-140	Pass	
2.4-Dichlorophenol	%	98			25-140	Pass	
2.4.5-Trichlorophenol	%	96			25-140	Pass	
2.4.6-Trichlorophenol	%	91			25-140	Pass	
2.6-Dichlorophenol	%	99			25-140	Pass	
4-Chloro-3-methylphenol	%	88			25-140	Pass	
Pentachlorophenol	%	90			25-140	Pass	
Tetrachlorophenols - Total	%	96			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	98			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	95			25-140	Pass	
2-Nitrophenol	%	97			25-140	Pass	
2.4-Dimethylphenol	%	106			25-140	Pass	
2.4-Dinitrophenol	%	89			25-140	Pass	
2-Methylphenol (o-Cresol)	%	94			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	92			25-140	Pass	
4-Nitrophenol	%	82			25-140	Pass	
Dinoseb	%	102			25-140	Pass	
Phenol	%	92			25-140	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	104			80-120	Pass	
Cadmium	%	104			80-120	Pass	
Chromium	%	104			80-120	Pass	
Copper	%	103			80-120	Pass	
Lead	%	95			80-120	Pass	
Mercury	%	99			80-120	Pass	
Nickel	%	104			80-120	Pass	
Zinc	%	102			80-120	Pass	
LCS - % Recovery							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	81			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	88			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	84			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	92			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	S24-Jn0000240	NCP	%	91			70-130	Pass	
TRH C10-C14	N24-My0084429	NCP	%	84			70-130	Pass	
TRH C6-C10	S24-Jn0000240	NCP	%	86			70-130	Pass	
TRH >C10-C16	N24-My0084429	NCP	%	84			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S24-Jn0000240	NCP	%	84			70-130	Pass	
Toluene	S24-Jn0000240	NCP	%	91			70-130	Pass	
Ethylbenzene	S24-Jn0000240	NCP	%	93			70-130	Pass	
m&p-Xylenes	S24-Jn0000240	NCP	%	84			70-130	Pass	
o-Xylene	S24-Jn0000240	NCP	%	84			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total*	S24-Jn0000240	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S24-Jn0000240	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S24-My0089417	NCP	%	83			70-130	Pass	
4.4'-DDD	S24-My0089417	NCP	%	80			70-130	Pass	
4.4'-DDE	S24-My0089417	NCP	%	83			70-130	Pass	
4.4'-DDT	S24-My0089417	NCP	%	75			70-130	Pass	
a-HCH	S24-My0089417	NCP	%	81			70-130	Pass	
Aldrin	S24-My0089417	NCP	%	81			70-130	Pass	
b-HCH	S24-My0089417	NCP	%	77			70-130	Pass	
d-HCH	S24-My0089417	NCP	%	76			70-130	Pass	
Dieldrin	S24-My0089417	NCP	%	83			70-130	Pass	
Endosulfan I	S24-My0089417	NCP	%	87			70-130	Pass	
Endosulfan II	S24-My0089417	NCP	%	79			70-130	Pass	
Endosulfan sulphate	S24-My0089417	NCP	%	81			70-130	Pass	
Endrin	S24-My0089417	NCP	%	87			70-130	Pass	
Endrin aldehyde	S24-My0089417	NCP	%	84			70-130	Pass	
Endrin ketone	S24-My0089417	NCP	%	84			70-130	Pass	
g-HCH (Lindane)	S24-My0089417	NCP	%	82			70-130	Pass	
Heptachlor	S24-My0089417	NCP	%	76			70-130	Pass	
Heptachlor epoxide	S24-My0089417	NCP	%	81			70-130	Pass	
Hexachlorobenzene	S24-My0089417	NCP	%	81			70-130	Pass	
Methoxychlor	S24-My0089417	NCP	%	73			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S24-My0089417	NCP	%	111			70-130	Pass	
Dimethoate	S24-My0089417	NCP	%	78			70-130	Pass	
Ethion	S24-My0089417	NCP	%	102			70-130	Pass	
Fenitrothion	S24-My0066967	NCP	%	78			70-130	Pass	
Methyl parathion	S24-My0089417	NCP	%	78			70-130	Pass	
Mevinphos	S24-My0089417	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S24-My0087209	NCP	%	87			75-125	Pass	
Cadmium	S24-My0087209	NCP	%	90			75-125	Pass	
Chromium	S24-My0087209	NCP	%	87			75-125	Pass	
Copper	S24-My0087209	NCP	%	90			75-125	Pass	
Lead	S24-My0087209	NCP	%	91			75-125	Pass	
Mercury	S24-My0087209	NCP	%	86			75-125	Pass	
Nickel	S24-My0087209	NCP	%	93			75-125	Pass	
Zinc	S24-My0087209	NCP	%	88			75-125	Pass	
Spike - % Recovery									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1					
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-My0081918	NCP	%	87			50-150	Pass	
Spike - % Recovery									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1					
Perfluorohexanesulfonic acid (PFHxS)	S24-My0091477	CP	%	85			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-My0091477	CP	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-My0091477	CP	%	89			50-150	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	S24-My0090821	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S24-My0085540	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S24-My0085540	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S24-My0085540	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	S24-My0090821	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S24-My0085540	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S24-My0085540	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S24-My0085540	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S24-My0090821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S24-My0090821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S24-My0090821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S24-My0090821	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S24-My0090821	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S24-My0090821	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S24-My0090821	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S24-My0089414	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin aldehyde	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S24-My0089414	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S24-My0089414	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S24-My0089414	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S24-My0089414	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S24-My0089414	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S24-My0089414	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S24-My0072610	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S24-My0074113	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	S24-My0074113	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S24-My0074113	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	S24-My0074113	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	S24-My0074113	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S24-My0074113	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S24-My0074113	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S24-My0074113	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S24-My0074113	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S24-My0074113	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Nitrophenol	S24-My0074113	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	S24-My0074113	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	S24-My0074113	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
4-Nitrophenol	S24-My0074113	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S24-My0074113	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S24-My0091132	NCP	mg/kg	3.4	2.9	16	30%	Pass	
Cadmium	S24-My0091430	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S24-My0091430	NCP	mg/kg	14	11	25	30%	Pass	
Copper	S24-My0091430	NCP	mg/kg	9.6	8.4	14	30%	Pass	
Lead	S24-My0091430	NCP	mg/kg	6.5	5.7	13	30%	Pass	
Mercury	S24-My0091430	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S24-My0091430	NCP	mg/kg	5.4	< 5	25	30%	Pass	
Zinc	S24-My0091430	NCP	mg/kg	44	37	16	30%	Pass	
Duplicate									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-My0091476	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-My0091476	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-My0091476	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-My0091476	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	B24-My0085518	NCP	%	31	33	6.1	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.

Authorised by:

Adam Bateup	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal
Jonathon Angell	Senior Analyst-PFAS
Jonathon Angell	Senior Analyst-Sample Properties
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Sample Properties
Roopesh Rangarajan	Senior Analyst-Volatile



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CERTIFICATE OF ANALYSIS

Work Order	: **ES2417394**	Page	: 1 of 26
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MRS Naomi Lukeman	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: S20283 - PEW investigation	Date Samples Received	: 28-May-2024 13:24
Order number	: ----	Date Analysis Commenced	: 29-May-2024
C-O-C number	: ----	Issue Date	: 04-Jun-2024 18:10
Sampler	: Megan Ferguson		
Site	: Williamtown, NSW		
Quote number	: EN/000		
No. of samples received	: 9		
No. of samples analysed	: 9		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

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

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

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

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

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Sum of chlorinated hydrocarbons includes carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichlorothene, trans-1,2-dichlorothene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, hexachlorobutadiene and methylene chloride.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2

- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where LISTED. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	DRUM01	DRUM02	DRUM03	----	----
			Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2417394-004	ES2417394-005	ES2417394-006	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**18.6**	**19.4**	**19.6**	**----**	**----**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**----**	**----**
Asbestos (Trace)	1332-21-4	-	-	**No**	**No**	**No**	**----**	**----**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**----**	**----**
Synthetic Mineral Fibre	----	-	--	**No**	**No**	**No**	**----**	**----**
Organic Fibre	----	-	--	**No**	**No**	**No**	**----**	**----**
Sample weight (dry)	----	0.01	g	**602**	**616**	**606**	**----**	**----**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**----**	**----**
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	**----**	**----**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	**----**	**----**
Chromium	7440-47-3	2	mg/kg	**7**	**3**	**4**	**----**	**----**
Copper	7440-50-8	5	mg/kg	**6**	<5	<5	**----**	**----**
Lead	7439-92-1	5	mg/kg	**6**	<5	<5	**----**	**----**
Nickel	7440-02-0	2	mg/kg	**4**	<2	<2	**----**	**----**
Zinc	7440-66-6	5	mg/kg	**13**	**6**	**10**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	**----**	**----**
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	**----**	**----**
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DRUM01	DRUM02	DRUM03	----	----
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417394-004	ES2417394-005	ES2417394-006	--------	--------
					Result	Result	Result	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DRUM01	DRUM02	DRUM03	----	----
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417394-004	ES2417394-005	ES2417394-006	--------	--------
					Result	Result	Result	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Styrene	100-42-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DRUM01	DRUM02	DRUM03	----	----
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417394-004	ES2417394-005	ES2417394-006	--------	--------
					Result	Result	Result	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	<5	<5	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	<5	<5	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	<5	<5	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	<5	<5	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	<5	<5	----	----
Chloromethane	74-87-3	5	mg/kg		<5	<5	<5	----	----
Vinyl chloride	75-01-4	5	mg/kg		<5	<5	<5	----	----
Bromomethane	74-83-9	5	mg/kg		<5	<5	<5	----	----
Chloroethane	75-00-3	5	mg/kg		<5	<5	<5	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	<5	<5	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Iodomethane	74-88-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DRUM01	DRUM02	DRUM03	----	----
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417394-004	ES2417394-005	ES2417394-006	--------	--------
					Result	Result	Result	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DRUM01	DRUM02	DRUM03	----	----
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417394-004	ES2417394-005	ES2417394-006	--------	--------
					Result	Result	Result	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Bromoform	75-25-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DRUM01	DRUM02	DRUM03	----	----
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417394-004	ES2417394-005	ES2417394-006	--------	--------
					Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DRUM01	DRUM02	DRUM03	----	----
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417394-004	ES2417394-005	ES2417394-006	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0002**	**0.0003**	**0.0015**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0030**	**0.0032**	**0.0054**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	**0.0002**	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	DRUM01	DRUM02	DRUM03	----	----
			Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2417394-004	ES2417394-005	ES2417394-006	--------	--------
				Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0032**	**0.0035**	**0.0071**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0032**	**0.0035**	**0.0069**	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0032**	**0.0035**	**0.0071**	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**83.5**	**97.8**	**95.7**	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**71.7**	**95.9**	**97.0**	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**74.0**	**87.4**	**84.9**	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.5	%	**90.2**	**91.9**	**88.7**	----	----
Toluene-D8	2037-26-5	0.5	%	**94.5**	**93.4**	**90.9**	----	----
4-Bromofluorobenzene	460-00-4	0.5	%	**100**	**100**	**95.0**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DRUM01	DRUM02	DRUM03	----	----
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417394-004	ES2417394-005	ES2417394-006	--------	--------
					Result	Result	Result	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		83.5	81.7	82.3	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		92.2	89.3	96.0	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		78.6	74.3	78.4	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		89.1	87.8	89.0	----	----
Anthracene-d10	1719-06-8	0.5	%		96.8	97.1	96.2	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		102	99.3	102	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		84.1	85.2	82.8	----	----
Toluene-D8	2037-26-5	0.2	%		84.7	83.5	81.2	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		97.8	97.2	93.1	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		98.2	89.4	94.4	----	----
13C8-PFOA	----	0.0002	%		103	97.2	96.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	QC102	QC302
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417394-001	ES2417394-002	ES2417394-003	ES2417394-007	ES2417394-008
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	**0.001**	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		**0.003**	**0.007**	**0.001**	**0.007**	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	**0.006**	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.005**	<0.001	**0.005**	<0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EP066: Polychlorinated Biphenyls (PCB)									
^ **Total Polychlorinated biphenyls**	----	1	µg/L		<1	<1	<1	<1	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
beta-BHC	319-85-7	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Aldrin	309-00-2	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
4.4`-DDE	72-55-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Endrin	72-20-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	QC102	QC302
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417394-001	ES2417394-002	ES2417394-003	ES2417394-007	ES2417394-008
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
4.4`-DDT	50-29-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Methoxychlor	72-43-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	----
^ **Total Chlordane (sum)**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Diazinon	333-41-5	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	----
Malathion	121-75-5	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Fenthion	55-38-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Parathion	56-38-2	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	QC102	QC302
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417394-001	ES2417394-002	ES2417394-003	ES2417394-007	ES2417394-008
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Ethion	563-12-2	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L		<2	5	<2	4	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	----
Styrene	100-42-5	5	µg/L		<5	<5	<5	<5	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	----
Isopropylbenzene	98-82-8	5	µg/L		<5	<5	<5	<5	----
n-Propylbenzene	103-65-1	5	µg/L		<5	<5	<5	<5	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L		<5	<5	<5	<5	----
sec-Butylbenzene	135-98-8	5	µg/L		<5	<5	<5	<5	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L		<5	6	<5	6	----
tert-Butylbenzene	98-06-6	5	µg/L		<5	<5	<5	<5	----
p-Isopropyltoluene	99-87-6	5	µg/L		<5	<5	<5	<5	----
n-Butylbenzene	104-51-8	5	µg/L		<5	<5	<5	<5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	50	µg/L		<50	<50	<50	<50	----
2-Butanone (MEK)	78-93-3	50	µg/L		<50	<50	<50	<50	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L		<50	<50	<50	<50	----
2-Hexanone (MBK)	591-78-6	50	µg/L		<50	<50	<50	<50	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	5	µg/L		<5	<5	<5	<5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	QC102	QC302
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417394-001	ES2417394-002	ES2417394-003	ES2417394-007	ES2417394-008
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	<5	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	<5	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	<5	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	<5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	<50	----
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	<50	----
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	<50	----
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	<50	----
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	<50	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	<50	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	<5	----
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	<5	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	<5	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	<5	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	<5	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	<5	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	<5	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	<5	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	<5	----
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	<5	----
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	<5	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	<5	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	<5	----
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	<5	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	<5	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	<5	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	QC102	QC302
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417394-001	ES2417394-002	ES2417394-003	ES2417394-007	ES2417394-008
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	<5	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	<5	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	----
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	**3.4**	<1.0	**3.1**	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	QC102	QC302
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417394-001	ES2417394-002	ES2417394-003	ES2417394-007	ES2417394-008
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	**3.4**	<0.5	**3.1**	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	QC102	QC302
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417394-001	ES2417394-002	ES2417394-003	ES2417394-007	ES2417394-008
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	**4**	<2	**4**	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	**4**	<1	**4**	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.04**	**0.03**	**0.03**	**0.02**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.07**	**0.04**	**0.03**	**0.04**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.13**	**0.56**	**0.39**	**0.57**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.09**	**0.05**	**0.04**	**0.05**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**9.82**	**3.36**	**4.35**	**3.23**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.16**	**0.24**	**0.04**	**0.25**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.22**	**0.22**	**0.13**	**0.23**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.06**	**0.10**	**0.02**	**0.10**	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	QC102	QC302
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417394-001	ES2417394-002	ES2417394-003	ES2417394-007	ES2417394-008
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.11**	**0.12**	**0.07**	**0.12**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.09**	**0.82**	<0.05	**0.62**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	QC102	QC302
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417394-001	ES2417394-002	ES2417394-003	ES2417394-007	ES2417394-008
					Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**11.9**	**5.59**	**5.15**	**5.27**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**11.0**	**3.92**	**4.74**	**3.80**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**11.6**	**5.45**	**5.03**	**5.14**	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		**106**	**110**	**108**	**100**	**----**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		**110**	**118**	**113**	**103**	**----**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		**109**	**119**	**110**	**106**	**----**
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**93.5**	**87.7**	**98.6**	**95.6**	**----**
Toluene-D8	2037-26-5	5	%		**89.9**	**90.1**	**93.0**	**94.3**	**----**
4-Bromofluorobenzene	460-00-4	5	%		**91.6**	**106**	**93.1**	**96.2**	**----**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**28.9**	**32.5**	**31.4**	**29.9**	**29.7**
2-Chlorophenol-D4	93951-73-6	1.0	%		**54.8**	**63.7**	**57.4**	**48.6**	**65.4**
2.4.6-Tribromophenol	118-79-6	1.0	%		**59.1**	**69.8**	**57.0**	**62.7**	**74.2**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**73.4**	**82.9**	**77.3**	**61.5**	**89.2**
Anthracene-d10	1719-06-8	1.0	%		**78.6**	**100**	**101**	**83.2**	**97.7**
4-Terphenyl-d14	1718-51-0	1.0	%		**83.2**	**101**	**82.6**	**76.6**	**92.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**101**	**95.3**	**107**	**104**	**77.8**
Toluene-D8	2037-26-5	2	%		**87.3**	**87.5**	**90.5**	**92.0**	**82.5**
4-Bromofluorobenzene	460-00-4	2	%		**88.0**	**99.6**	**87.9**	**92.2**	**76.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	QC102	QC302
				Sampling date / time	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00	28-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417394-001	ES2417394-002	ES2417394-003	ES2417394-007	ES2417394-008
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	**110**	**106**	**101**	**105**
13C8-PFOA	----	0.02	%		**101**	**106**	**102**	**103**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC401 Trip Blank	----	----	----	----
			Sampling date / time	24-May-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2417394-009	--------	--------	--------	--------
				Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L	<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**106**	----	----	----	----
Toluene-D8	2037-26-5	2	%	**94.4**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	**92.4**	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	DRUM01 - 28-May-2024 00:00	A soil sample.
EA200: Description	DRUM02 - 28-May-2024 00:00	A soil sample.
EA200: Description	DRUM03 - 28-May-2024 00:00	A soil sample.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	45	134
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	50	150
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	50	150
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

QUALITY CONTROL REPORT

Work Order	: **ES2417394**	Page	: 1 of 34
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MRS Naomi Lukeman	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: S20283 - PEW investigation	Date Samples Received	: 28-May-2024
Order number	: ----	Date Analysis Commenced	: 29-May-2024
C-O-C number	: ----	Issue Date	: 04-Jun-2024
Sampler	: Megan Ferguson		
Site	: Williamtown, NSW		
Quote number	: EN/000		
No. of samples received	: 9		
No. of samples analysed	: 9		

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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

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

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5827854)									
ES2417125-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	10	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	4	5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	700	690	1.5	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	<5	5	0.0	No Limit
ES2417208-028	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	7	48.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	5	7	27.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	62	88	33.6	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5827857)									
ES2417208-020	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	4.8	4.8	0.0	No Limit
ES2417394-004	DRUM01	EA055: Moisture Content	----	0.1 (1.0)*	%	18.6	18.2	1.9	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5827851)									
ES2417208-028	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2417071-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5821841)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5821841) - continued									
ES2417448-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5821840)									
ES2417448-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5821840)									
ES2417448-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5821840) - continued									
ES2417448-001	Anonymous	EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 5824149)									
ES2417394-004	DRUM01	EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 5824149)									
ES2417394-004	DRUM01	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 5824149)									
ES2417394-004	DRUM01	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074D: Fumigants (QC Lot: 5824149)									
ES2417394-004	DRUM01	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5824149)									
ES2417394-004	DRUM01	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5824149) - continued									
ES2417394-004	DRUM01	EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5824149)									
ES2417394-004	DRUM01	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074G: Trihalomethanes (QC Lot: 5824149)									
ES2417394-004	DRUM01	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074H: Naphthalene (QC Lot: 5824149)									
ES2417394-004	DRUM01	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5821839)									
ES2417493-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES2417448-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5821839) - continued									
ES2417448-001	Anonymous	EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5821838)									
ES2417493-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2417448-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5824148)									
ES2417394-004	DRUM01	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5821838)									
ES2417493-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2417448-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5824148)									
ES2417394-004	DRUM01	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 5824148)									
ES2417394-004	DRUM01	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5829111)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5829111) - continued									
ES2417478-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0354	0.0359	1.5	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ES2417601-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0004	0.0003	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0143	0.0121	16.5	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0005	0.0004	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0347	0.0299	14.9	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0015	0.0013	13.8	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5829111)									
ES2417478-002	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ES2417601-002	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0007	0.0006	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0012	0.0010	17.3	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5829111)									
ES2417478-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5829111) - continued									
ES2417478-002	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2417601-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5829111)									
ES2417478-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2417601-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5829111) - continued									
ES2417601-002	Anonymous	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5825328)									
ES2417359-012	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.2 µg/L	0.0002	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	2 µg/L	0.002	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	40 µg/L	0.038	3.2	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	68 µg/L	0.069	0.0	0% - 50%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5825331)									
ES2417394-008	QC302	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
ES2417641-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 5825327)									
ES2417359-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.1 µg/L	<0.0001	0.0	No Limit
ES2417359-011	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.1 µg/L	<0.0001	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 5825330)									
ES2417394-007	QC102	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 5821852)									
ES2417394-001	MW01	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 5821852) - continued									
ES2417394-001	MW01	EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
WN2406432-006	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 5821852)									
ES2417394-001	MW01	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
WN2406432-006	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 5821852)									
ES2417394-001	MW01	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074C: Sulfonated Compounds (QC Lot: 5821852) - continued									
WN2406432-006	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 5821852)									
ES2417394-001	MW01	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
WN2406432-006	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5821852)									
ES2417394-001	MW01	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5821852) - continued									
ES2417394-001	MW01	EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
WN2406432-006	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5821852)									
ES2417394-001	MW01	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 5821852) - continued									
ES2417394-001	MW01	EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
WN2406432-006	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 5821852)									
ES2417394-001	MW01	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
WN2406432-006	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP074H: Naphthalene (QC Lot: 5821852)									
ES2417394-001	MW01	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
WN2406432-006	Anonymous	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5821853)									
ES2417394-001	MW01	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
WN2406432-006	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5821853)									
ES2417394-001	MW01	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
WN2406432-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 5821853)									
ES2417394-001	MW01	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 5821853) - continued									
ES2417394-001	MW01	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
WN2406432-006	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5823690)									
ES2417263-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2417366-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5823690)									
ES2417263-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2417366-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5823690) - continued									
ES2417366-001	Anonymous	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5823690)									
ES2417263-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2417366-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5823690)									
ES2417263-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5823690) - continued									
ES2417263-001	Anonymous	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2417366-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5823690)									
ES2417263-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.07	0.07	0.0	No Limit
ES2417366-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5827854)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	102	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	104	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	109	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	104	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	98.6	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	95.0	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	93.6	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5827851)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	82.8	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5821841)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	83.9	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 5821840)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.4	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	88.1	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	105	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	81.5	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	94.9	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.1	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	98.7	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.1	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	84.8	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	62.0	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5821840) - continued								
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	86.5	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	75.0	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	84.2	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5821840)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	103	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	88.7	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	80.4	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	95.9	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	83.4	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.3	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.0	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	83.9	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	78.0	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	104	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.3	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	85.9	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.9	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	58.0	41.0	123
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 5824149)								
EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	96.4	71.0	121
EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	98.0	65.0	131
EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.9	72.0	114
EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	98.1	70.0	116
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	97.2	67.0	113
EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	97.0	75.0	115
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	99.7	65.0	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	95.1	66.0	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	96.6	68.0	118

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 5824149) - continued								
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	96.6	69.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	97.3	69.0	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	93.7	69.0	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	98.3	66.0	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	101	59.0	125
EP074B: Oxygenated Compounds (QCLot: 5824149)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	68.1	29.6	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	78.6	58.0	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	101	62.0	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	93.0	54.0	136
EP074C: Sulfonated Compounds (QCLot: 5824149)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	89.1	54.0	126
EP074D: Fumigants (QCLot: 5824149)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	97.6	60.0	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	92.7	68.0	124
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	90.5	51.0	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	92.8	52.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	97.2	63.0	115
EP074E: Halogenated Aliphatic Compounds (QCLot: 5824149)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	85.5	30.0	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	110	41.0	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	102	43.0	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	97.3	47.0	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	102	49.0	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	106	49.0	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	103	54.0	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	75.1	43.0	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	97.4	64.0	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	97.7	67.0	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	95.8	69.0	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	95.0	65.0	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	98.8	65.0	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	88.5	59.0	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	102	65.0	125

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5824149) - continued								
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	96.1	70.0	118
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	94.7	68.0	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	98.5	64.0	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	102	68.0	122
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	104	67.0	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	88.7	62.0	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	93.6	54.0	128
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	103	55.0	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	101	65.0	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	110	61.0	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	69.9	19.8	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	90.6	53.0	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	89.3	50.0	128
EP074F: Halogenated Aromatic Compounds (QCLot: 5824149)								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	97.1	68.0	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	90.5	70.0	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	94.2	68.0	122
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	96.3	67.0	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	97.5	70.0	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	94.2	67.0	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	96.7	70.0	114
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	93.1	48.0	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	96.0	52.0	122
EP074G: Trihalomethanes (QCLot: 5824149)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	95.2	66.0	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	84.0	61.0	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	81.3	63.0	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	78.7	60.0	126
EP074H: Naphthalene (QCLot: 5824149)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	94.1	67.0	129
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5821839)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	91.9	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	93.3	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	98.4	73.0	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5821839) - continued								
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	89.7	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	90.9	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	93.0	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	96.8	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	94.1	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	94.7	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	89.1	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	89.7	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	93.9	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	98.6	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	79.3	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	77.3	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	79.6	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5821838)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	112	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	113	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	114	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5824148)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	86.5	72.2	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5821838)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	99.2	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	110	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	120	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5824148)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	78.2	72.4	133
EP080: BTEXN (QCLot: 5824148)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	90.6	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	86.3	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	88.3	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	95.8	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	102	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	99.0	78.8	122
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5829111)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5829111) - continued								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.4	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.3	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.2	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.8	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.4	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5829111)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	92.6	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.0	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.5	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.5	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.0	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.5	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	101	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.5	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	95.0	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5829111)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	100	71.6	129
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	87.4	69.8	131
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.3	68.7	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	90.2	65.1	134
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.8	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5829111)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	92.2	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	106	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	85.3	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	99.6	69.2	143

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5825328)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	94.9	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.2	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.0	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.4	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.3	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	90.6	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.1	81.0	117
EG020F: Dissolved Metals by ICP-MS (QCLot: 5825331)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	94.4	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.1	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.3	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.6	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.7	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	89.9	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.4	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 5825327)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.1	83.0	105
EG035F: Dissolved Mercury by FIMS (QCLot: 5825330)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.2	83.0	105
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5822048)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	83.5	68.9	113
EP068A: Organochlorine Pesticides (OC) (QCLot: 5822046)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	88.7	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	106	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	97.2	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	98.6	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	107	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	76.6	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	81.7	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	81.1	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	101	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	77.9	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	93.0	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	83.1	65.2	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5822046) - continued								
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	88.5	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	98.4	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	81.4	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	79.9	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	84.7	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	74.8	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	84.1	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	77.9	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	87.5	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5822046)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	89.4	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	97.7	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	26.2	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	88.2	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	96.6	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	107	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	103	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	90.5	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	83.8	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	78.4	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	105	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	98.5	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	85.9	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	91.7	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	90.0	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	89.0	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	92.0	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	77.0	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	89.9	51.6	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 5821852)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	106	77.0	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	108	69.0	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	98.3	76.0	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 5821852) - continued								
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	93.7	77.0	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	90.8	73.0	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	91.2	79.0	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	95.1	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	105	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	104	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	107	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	103	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	105	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	103	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	104	65.0	123
EP074B: Oxygenated Compounds (QCLot: 5821852)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	103	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	87.5	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	113	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	87.9	65.0	137
EP074C: Sulfonated Compounds (QCLot: 5821852)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	95.5	72.8	127
EP074D: Fumigants (QCLot: 5821852)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	107	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	106	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	111	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	111	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	106	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 5821852)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	101	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	103	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	103	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	114	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	114	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	104	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	107	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	81.8	70.2	128

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5821852) - continued								
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	106	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	105	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	103	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	107	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	107	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	105	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	107	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	108	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	105	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	106	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	104	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	107	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	105	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	93.2	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	96.2	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	92.6	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	96.8	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	102	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	100	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	108	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5821852)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	107	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	105	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	104	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	102	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	103	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	100	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	104	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	101	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	103	67.0	123
EP074G: Trihalomethanes (QCLot: 5821852)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	107	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	102	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	102	65.0	115

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074G: Trihalomethanes (QCLot: 5821852) - continued								
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	88.3	73.5	126
EP074H: Naphthalene (QCLot: 5821852)								
EP074: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	107	72.0	122
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5822047)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	76.7	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	74.2	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	83.2	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	79.3	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	68.8	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	84.0	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	92.0	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	90.8	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	83.3	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	91.5	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	69.6	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	80.2	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	94.7	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	78.4	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	87.8	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	93.7	59.1	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5821853)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	86.7	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5822045)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	70.5	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	86.5	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	91.9	58.3	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5821853)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	86.8	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5822045)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	61.1	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	82.6	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	76.8	50.5	115
EP080: BTEXN (QCLot: 5821853)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 5821853) - continued								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	98.9	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.2	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	94.2	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	92.7	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	92.9	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	104	75.5	124
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5823690)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	93.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	99.9	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	90.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	103	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	90.8	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5823690)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	95.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	98.1	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	94.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	96.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	94.1	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	92.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	99.1	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	90.7	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.9	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	87.8	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5823690)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	98.7	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	89.2	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	84.8	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	96.4	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	92.3	57.6	145

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5823690) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	90.9	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	99.1	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5823690)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	87.9	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	108	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	90.2	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	83.4	71.4	144

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5827854)							
ES2417125-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	93.3	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	115	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	71.0	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	94.7	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	102	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5827851)							
ES2417071-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	91.8	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5821841)							
ES2417448-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	104	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5821840)							
ES2417448-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	75.6	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	87.3	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	93.4	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	89.4	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	91.7	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	75.2	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5821840)							
ES2417448-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	77.2	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5821840) - continued							
ES2417448-001	Anonymous	EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	82.6	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	79.3	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	80.9	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	75.6	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 5824149)							
ES2417394-004	DRUM01	EP074: Benzene	71-43-2	2.5 mg/kg	126	70.0	130
		EP074: Toluene	108-88-3	2.5 mg/kg	121	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5824149)							
ES2417394-004	DRUM01	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	124	70.0	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	125	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5824149)							
ES2417394-004	DRUM01	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	119	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5821839)							
ES2417448-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	90.9	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	97.7	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5821838)							
ES2417448-001	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	98.8	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	103	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	119	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5824148)							
ES2417394-004	DRUM01	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.9	60.4	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5821838)							
ES2417448-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	89.2	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	109	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	131	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5824148)							
ES2417394-004	DRUM01	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	80.8	61.1	142
EP080: BTEXN (QCLot: 5824148)							
ES2417394-004	DRUM01	EP080: Benzene	71-43-2	2.5 mg/kg	82.6	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	89.0	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	90.5	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	95.7	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	104	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	110	61.1	115
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5829111)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5829111) - continued							
ES2417478-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	104	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00125 mg/kg	112	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	106	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00125 mg/kg	113	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00125 mg/kg	118	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5829111)							
ES2417478-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	109	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	114	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	116	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	113	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	114	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	116	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	116	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	118	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	116	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	115	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	98.2	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5829111)							
ES2417478-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	107	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	111	71.6	129
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	104	69.8	131
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	103	68.7	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	104	65.1	134
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	110	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	102	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5829111)							
ES2417478-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	101	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	103	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	114	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	118	69.2	143

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5825331)							
ES2417412-005	Anonymous	EG020A-F: Arsenic	7440-38-2	2 mg/L	105	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.5 mg/L	105	70.0	130
		EG020A-F: Chromium	7440-47-3	2 mg/L	110	70.0	130
		EG020A-F: Copper	7440-50-8	2 mg/L	110	70.0	130
		EG020A-F: Lead	7439-92-1	2 mg/L	113	70.0	130
		EG020A-F: Nickel	7440-02-0	2 mg/L	102	70.0	130
		EG020A-F: Zinc	7440-66-6	2 mg/L	107	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 5825327)							
ES2417359-003	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	78.6	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 5825330)							
ES2417394-003	MW03	EG035F: Mercury	7439-97-6	0.01 mg/L	73.4	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 5821852)							
ES2417394-001	MW01	EP074: Benzene	71-43-2	25 µg/L	106	70.0	130
		EP074: Toluene	108-88-3	25 µg/L	102	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5821852)							
ES2417394-001	MW01	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	109	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	96.4	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5821852)							
ES2417394-001	MW01	EP074: Chlorobenzene	108-90-7	25 µg/L	102	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5821853)							
ES2417394-001	MW01	EP080: C6 - C9 Fraction	----	325 µg/L	75.6	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5821853)							
ES2417394-001	MW01	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	75.2	70.0	130
EP080: BTEXN (QCLot: 5821853)							
ES2417394-001	MW01	EP080: Benzene	71-43-2	25 µg/L	89.7	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	87.2	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	88.0	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	87.0	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	90.2	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	104	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5823690)							
ES2417263-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	94.8	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	88.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	79.6	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	95.6	69.0	134

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5823690) - continued							
ES2417263-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	86.3	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	73.8	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5823690)							
ES2417263-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	90.7	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	99.2	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	90.6	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	94.2	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.7	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	91.7	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	88.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	92.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	94.6	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	88.2	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	81.9	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5823690)							
ES2417263-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	89.3	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	80.4	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	85.4	62.6	147
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	92.4	66.0	145
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	82.9	57.6	145
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	82.5	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5823690)							
ES2417263-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	100	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	87.2	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	96.8	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	88.3	71.4	144

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2417394**	Page	: 1 of 14
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MRS Naomi Lukeman	Telephone	: +61-2-8784 8555
Project	: S20283 - PEW investigation	Date Samples Received	: 28-May-2024
Site	: Williamtown, NSW	Issue Date	: 04-Jun-2024
Sampler	: Megan Ferguson	No. of samples received	: 9
Order number	: ----	No. of samples analysed	: 9

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	ES2417478--002	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	35	8.57	10.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	35	2.86	5.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
DRUM01, DRUM02, DRUM03	**28-May-2024**	**----**	----	**----**	**31-May-2024**	11-Jun-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) DRUM01, DRUM02, DRUM03	**28-May-2024**	----	----	----	**29-May-2024**	24-Nov-2024	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) DRUM01, DRUM02, DRUM03	**28-May-2024**	**31-May-2024**	24-Nov-2024	✓	**03-Jun-2024**	24-Nov-2024	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) DRUM01, DRUM02, DRUM03	**28-May-2024**	**31-May-2024**	25-Jun-2024	✓	**04-Jun-2024**	25-Jun-2024	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) DRUM01, DRUM02, DRUM03	**28-May-2024**	**30-May-2024**	11-Jun-2024	✓	**01-Jun-2024**	09-Jul-2024	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) DRUM01, DRUM02, DRUM03	**28-May-2024**	**30-May-2024**	11-Jun-2024	✓	**31-May-2024**	09-Jul-2024	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) DRUM01, DRUM02, DRUM03	**28-May-2024**	**30-May-2024**	11-Jun-2024	✓	**31-May-2024**	09-Jul-2024	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**30-May-2024**	04-Jun-2024	✓
EP074B: Oxygenated Compounds							
Soil Glass Jar - Unpreserved (EP074) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**30-May-2024**	04-Jun-2024	✓
EP074C: Sulfonated Compounds							
Soil Glass Jar - Unpreserved (EP074) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**30-May-2024**	04-Jun-2024	✓
EP074D: Fumigants							
Soil Glass Jar - Unpreserved (EP074) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**30-May-2024**	04-Jun-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds							
Soil Glass Jar - Unpreserved (EP074) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**30-May-2024**	04-Jun-2024	✓
EP074F: Halogenated Aromatic Compounds							
Soil Glass Jar - Unpreserved (EP074) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**30-May-2024**	04-Jun-2024	✓
EP074G: Trihalomethanes							
Soil Glass Jar - Unpreserved (EP074) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**30-May-2024**	04-Jun-2024	✓
EP074H: Naphthalene							
Soil Glass Jar - Unpreserved (EP074) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**30-May-2024**	04-Jun-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) DRUM01, DRUM02, DRUM03	**28-May-2024**	**30-May-2024**	11-Jun-2024	✓	**31-May-2024**	09-Jul-2024	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP071) DRUM01, DRUM02, DRUM03	**28-May-2024**	**30-May-2024**	11-Jun-2024	✓	**31-May-2024**	09-Jul-2024	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP071) DRUM01, DRUM02, DRUM03	**28-May-2024**	**30-May-2024**	11-Jun-2024	✓	**31-May-2024**	09-Jul-2024	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) DRUM01, DRUM02, DRUM03	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) DRUM01, DRUM02, DRUM03	**28-May-2024**	**31-May-2024**	24-Nov-2024	✓	**04-Jun-2024**	10-Jul-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
DRUM01, DRUM02, DRUM03	**28-May-2024**	**31-May-2024**	24-Nov-2024	✓	**04-Jun-2024**	10-Jul-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
DRUM01, DRUM02, DRUM03	**28-May-2024**	**31-May-2024**	24-Nov-2024	✓	**04-Jun-2024**	10-Jul-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
DRUM01, DRUM02, DRUM03	**28-May-2024**	**31-May-2024**	24-Nov-2024	✓	**04-Jun-2024**	10-Jul-2024	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
DRUM01, DRUM02, DRUM03	**28-May-2024**	**31-May-2024**	24-Nov-2024	✓	**04-Jun-2024**	10-Jul-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
MW01, MW02, MW03, QC102, QC302	**28-May-2024**	**----**	----	----	**30-May-2024**	24-Nov-2024	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
MW01, MW02, MW03, QC102, QC302	**28-May-2024**	**----**	----	----	**03-Jun-2024**	25-Jun-2024	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066)							
MW01, MW02, MW03, QC102	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**31-May-2024**	08-Jul-2024	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
MW01, MW02, MW03, QC102	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**31-May-2024**	08-Jul-2024	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068)							
MW01, MW02, MW03, QC102	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**31-May-2024**	08-Jul-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP074) MW02	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP074) MW02	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP074) MW02	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP074) MW02	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP074) MW02	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP074) MW02	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP074) MW02	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074H: Naphthalene							
Amber VOC Vial - Sulfuric Acid (EP074) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP074) MW02	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) MW01, MW02, MW03, QC102, QC302	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**31-May-2024**	08-Jul-2024	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) MW01, MW02, MW03, QC102, QC302	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**30-May-2024**	08-Jul-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC401 - Trip Blank	**24-May-2024**	**29-May-2024**	07-Jun-2024	✓	**29-May-2024**	07-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW02, QC302	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) MW01, MW02, MW03, QC102, QC302	**28-May-2024**	**29-May-2024**	04-Jun-2024	✓	**30-May-2024**	08-Jul-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC401 - Trip Blank	**24-May-2024**	**29-May-2024**	07-Jun-2024	✓	**29-May-2024**	07-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW02, QC302	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) QC401 - Trip Blank	**24-May-2024**	**29-May-2024**	07-Jun-2024	✓	**29-May-2024**	07-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW01, MW03, QC102	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**29-May-2024**	11-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW02, QC302	**28-May-2024**	**29-May-2024**	11-Jun-2024	✓	**30-May-2024**	11-Jun-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
MW01, MW02, MW03, QC102, QC302	**28-May-2024**	**30-May-2024**	24-Nov-2024	✓	**31-May-2024**	24-Nov-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
MW01, MW02, MW03, QC102, QC302	**28-May-2024**	**30-May-2024**	24-Nov-2024	✓	**31-May-2024**	24-Nov-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
MW01, MW02, MW03, QC102, QC302	**28-May-2024**	**30-May-2024**	24-Nov-2024	✓	**31-May-2024**	24-Nov-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
MW01, MW02, MW03, QC102, QC302	**28-May-2024**	**30-May-2024**	24-Nov-2024	✓	**31-May-2024**	24-Nov-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
MW01, MW02, MW03, QC102, QC302	**28-May-2024**	**30-May-2024**	24-Nov-2024	✓	**31-May-2024**	24-Nov-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Matrix Spikes (MS) - Continued							
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	3	28	10.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	35	8.57	10.00	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	4	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	35	**2.86**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
Volatile Organic Compounds	EP074	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).

Preparation Methods	Method	Matrix	Method Descriptions
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2417394**

Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MRS Naomi Lukeman	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: naomi.lukeman@senversa.com.au	E-mail	: sandy.phan@alsglobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: S20283 - PEW investigation	Page	: 1 of 3
Order number	: ----	Quote number	: EB2023SENVER0001 (EN/000)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Williamtown, NSW		
Sampler	: Megan Ferguson		

Dates

Date Samples Received	: 28-May-2024 13:24	Issue Date	: 28-May-2024
Client Requested Due Date	: 04-Jun-2024	Scheduled Reporting Date	: **04-Jun-2024**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 6.2'C
Receipt Detail	:	No. of samples received / analysed	: 9 / 9

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Sample "QC202" has been forwarded to Eurofins.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231X (solids) PFAS - Full Suite (30 analytes)	SOIL - S-16 TRH/BTEXN/PAH/OC/OP/PCB/8Metals
ES2417394-004	28-May-2024 00:00	DRUM01	✓	✓	✓	✓
ES2417394-005	28-May-2024 00:00	DRUM02	✓	✓	✓	✓
ES2417394-006	28-May-2024 00:00	DRUM03	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA200 Asbestos Identification in Soils -
ES2417394-004	28-May-2024 00:00	DRUM01	✓
ES2417394-005	28-May-2024 00:00	DRUM02	✓
ES2417394-006	28-May-2024 00:00	DRUM03	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP074 (water) Volatile Organic Compounds	WATER - EP231X PFAS - Full Suite (30 analytes)	WATER - W-16 TRH/BTEXN/PAH/OC/OP/PCB/8 Metals
ES2417394-001	28-May-2024 00:00	MW01	✓	✓	✓
ES2417394-002	28-May-2024 00:00	MW02	✓	✓	✓
ES2417394-003	28-May-2024 00:00	MW03	✓	✓	✓
ES2417394-007	28-May-2024 00:00	QC102	✓	✓	✓

			WATER - EP074 (water) Volatile Organic Compounds	WATER - EP231X PFAS - Full Suite (30 analytes)	WATER - W-16 TRH/BTEXN/PAH/OC/OP/PCB/8 Metals
ES2417394-008	28-May-2024 00:00	QC302		✓	

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - W-18 TRH(C6 - C9)/BTEXN	WATER - W-26 TRH/BTEXN/PAH/8 Metals
ES2417394-008	28-May-2024 00:00	QC302		✓
ES2417394-009	24-May-2024 00:00	QC401 Trip Blank	✓	

Proactive Holding Time Report

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

Requested Deliverables

Megan Ferguson

- *AU Certificate of Analysis - NATA (COA)	Email	megan.ferguson@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	megan.ferguson@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	megan.ferguson@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	megan.ferguson@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	megan.ferguson@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	megan.ferguson@senversa.com.au
- EDI Format - XTab (XTAB)	Email	megan.ferguson@senversa.com.au

Naomi Lukeman

- *AU Certificate of Analysis - NATA (COA)	Email	naomi.lukeman@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	naomi.lukeman@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	naomi.lukeman@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	naomi.lukeman@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	naomi.lukeman@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	naomi.lukeman@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	naomi.lukeman@senversa.com.au
- EDI Format - XTab (XTAB)	Email	naomi.lukeman@senversa.com.au

SUPPLIER ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	supplieraccounts@senversa.com.au

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

CHAIN OF CUSTODY

Mandatory Fields

Page 1 of 1

CoC #: (if applicable)

CLIENT CODE:	*PROJECT MANAGER: Naomi Lukeman	SAMPLER: Megan Ferguson	
*CLIENT: Serversa	*PM MOBILE: 0447514268	SAMPLER MOBILE: 0455 981 953	
OFFICE: (Invoiced Office) Sydney	ALS QUOTE # (Client PL if blank)	PURCHASE ORDER NO.:	
PROJECT NO./PROJECT: S20283 - PFW ~~Grout~~ Investigation		SITE: Williamtown, NSW	
*INVOICE TO: (client default if nil) supplieraccounts@serversa.com.au		☑ CC Invoice to PM	
*EMAIL REPORTS TO: (default to PM if blank) megan.ferguson@serversa.com.au, naomi.lukeman@serversa.com.au			

*** STORAGE REQUIREMENTS** (Please check box →)

- ☑ Standard Storage
- ☐ Extended Storage

Standard Storage time from receipt of samples: Waters - 3 weeks; Solids - 2 months

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** (Please check box →)

(Not all tests can be expedited, contact Client Services for more information)

- ☑ 5+ days (no surcharge)
- ☐ 3 day (+15%)
- ☐ 2 day (+30%)
- ☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

BIOSECURITY

Country of Origin: (if not Australia)

Environmental Division Sydney
Work Order Reference
ES2417394

Telephone : +61-2-8784 8555

Comments:

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	TRH, BTEX	PAH	PFAS	Heavy metals	OCP/OPP	VOCs	PCBs	Asbestos (absence/presence)				Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
1	MW01		28/5/24		W	X	X	X	X	X	X	X					☐	☐	
2	MW02					X	X	X	X	X	X	X					☐	☐	
3	MW03					X	X	X	X	X	X	X					☐	☐	
4	DRUM01				S	X	X	X	X	X	X	X	X				☐	☐	
5	DRUM02				S	X	X	X	X	X	X	X	X				☐	☐	
6	DRUM03				S	X	X	X	X	X	X	X	X				☐	☐	
7	QC102				W	X	X	X	X	X	X	X					☐	☐	
—	QC202					X	X	X	X	X	X	X					☐	☐	
8	QC302					X	X	X	X								☐	☐	
9	QC401					X											☐	☐	

LAB OF ORIGIN: NEWCASTLE

E-MAILED

Forward to Eurofins

Subcontract / Forward Lab Split WO

Receipt Detail (Lab Use ONLY)	Chilling Method:	Ice: Frozen / Melted	Ice Bricks: Frozen / Thawed	(None)	Sample Temp at Receipt: 6.2 °C	°C	°C

Security Seal Intact (circle): Yes / No / (NA(None))

Carrier Details: ☐ Courier/Post ☐ Client

Con Note #

Packaging: (circle) Hard Esky / Foam Esky / Box/Bag/Other

Count: # # #

Relinquished by: Megan Ferguson	Signature:	Date/Time: 28/5/24 1:20pm	Received by: JN	Signature	PO No: 1330 Date/Time: 28-5-24
Relinquished by:	Signature:	Date/Time: 28/5/2482	Received by: C-C	Signature	Attached By PO / Internal Sheet: 19127 Date/Time: 28/5

EMFM (204/17)

Form Page 1 of 1

Approved Date: 13/02/2024

Mandatory Fields

CHAIN OF CUSTODY

Page 1 of 1

CoC #: (if applicable)

CLIENT CODE:

*PROJECT MANAGER: Naomi Lukeman

SAMPLER: Megan Ferguson

*CLIENT: Serversa

*PM MOBILE: 0447514 268

SAMPLER MOBILE: 0455 981953

OFFICE: (Invoiced Office) Sydney

ALS QUOTE # (Client PL if blank)

PURCHASE ORDER NO.:

PROJECT NO./PROJECT: S20283 - PFW ~~Trust~~ Investigation

SITE: Williamtown, NSW

*INVOICE TO: (client default if all) Supplieraccounts@serversa.com.au

☑ CC Invoice to PM

*EMAIL REPORTS TO: (default to PM if blank) megan.ferguson@serversa.com.au, naomi.lukeman@serversa.com.au

BIOSECURITY

Country of Origin: (if not Australia)

Environmental Division Sydney

Work Order Reference ES2417394

Telephone : +61-2-8784 8555

*** STORAGE REQUIREMENTS** Please check box. → Standard time from receipt of samples: Waters - 3 weeks; Soils - 2 months

☑ Standard Storage

☐ Extended Storage

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** Please check box. → (Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)

☐ 3 day (+15%)

☐ 2 day (+30%)

☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)

Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).

Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments:

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust(D), Product (P), Biota (B), Biosolid (BS)	TRH, BTEX	PAH	PFAS	Heavy metals	OCP/OPP	VOCs	PCBs	Asbestos (absence/presence)				Lab QC (additional bottles req.) Dup	MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
1	MW01		28/5/24		W	X	X	X	X	X	X	X					☐	☐	LAB OF ORIGIN: NEWCASTLE
2	MW02					X	X	X	X	X	X	X					☐	☐	
3	MW03					X	X	X	X	X	X	X					☐	☐	
4	DRUM01				S	X	X	X	X	X	X	X	X				☐	☐	
5	DRUM02				S	X	X	X	X	X	X	X	X				☐	☐	
6	DRUM03				S	X	X	X	X	X	X	X	X				☐	☐	E-MAILED
7	QC102				W	X	X	X	X	X	X	X					☐	☐	
—	QC202					X	X	X	X	X	X	X					☐	☐	
8	QC302					X	X	X	X								☐	☐	Forward to Eurofins
9	QC401					X											☐	☐	

Receipt Detail (Lab Use ONLY) Chilling Method: Ice: Frozen / Melted Ice Bricks: Frozen / Thawed None

Sample Temp at Receipt: 6.2 °C °C °C

Security Seal Intact (circle): Yes / No / NA(None)

Carrier Details: ☐ Courier/Post ☐ Client

Con Note #

Packaging: (Circle) Hard Esky Foam Esky Box/Bag/Other

Count: # # #

Relinquished by: Megan Ferguson Signature: Date/Time: 28/5/24 1:20pm

Received by: JW Signature

Relinquished by: Signature: Date/Time: 28/5/2482

Received by: C-C Signature

1330 Date/Time: 28-5-24

1912 Date/Time: 28/5

CERTIFICATE OF ANALYSIS

Work Order	: **ES2417817**	Page	: 1 of 38
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MEGAN FERGUSON	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: S20283 PEW Investigation	Date Samples Received	: 30-May-2024 15:51
Order number	: ----	Date Analysis Commenced	: 31-May-2024
C-O-C number	: ----	Issue Date	: 11-Jun-2024 16:13
Sampler	: Megan Ferguson		
Site	: ----		
Quote number	: EN/000		
No. of samples received	: 37		
No. of samples analysed	: 20		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

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

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

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

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

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- ASS: EA033 (CRS Suite): Analysis is performed as per the Acid Sulfate Soils Laboratory Methods Guidelines (2004) and the updated National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, Canberra, ACT (2018)
- ASS: EA033 (CRS Suite):Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): Laboratory determinations of ANC needs to be corroborated by effectiveness of the measured ANC in relation to incubation ANC. Unless corroborated, the results of ANC testing should be discounted when determining Net Acidity for comparison with action criteria, or for the determination of the acidity hazard and required liming amounts.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m3'.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.

- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where LISTED. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_0.0-0.1	MW01_1.0-1.1	MW01_1.1-1.2	MW01_1.4-1.5	MW01_3.8-3.9
				Sampling date / time	20-May-2024 10:20	20-May-2024 10:20	20-May-2024 11:17	20-May-2024 11:17	20-May-2024 11:17
Compound	CAS Number	LOR	Unit		ES2417817-001	ES2417817-003	ES2417817-004	ES2417817-005	ES2417817-008
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		7.2	6.9	8.0	13.5	19.4
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	----	----	----	----
Asbestos (Trace)	1332-21-4	-	-		No	----	----	----	----
Asbestos Type	1332-21-4	-	--		-	----	----	----	----
Synthetic Mineral Fibre	----	-	--		No	----	----	----	----
Organic Fibre	----	-	--		No	----	----	----	----
Sample weight (dry)	----	0.01	g		516	----	----	----	----
APPROVED IDENTIFIER:	----	-	--		J. PAGE	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		15	15	11	4	<2
Copper	7440-50-8	5	mg/kg		15	12	9	<5	<5
Lead	7439-92-1	5	mg/kg		<5	<5	5	<5	<5
Nickel	7440-02-0	2	mg/kg		11	10	6	<2	<2
Zinc	7440-66-6	5	mg/kg		34	34	35	<5	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_0.0-0.1	MW01_1.0-1.1	MW01_1.1-1.2	MW01_1.4-1.5	MW01_3.8-3.9
				Sampling date / time	20-May-2024 10:20	20-May-2024 10:20	20-May-2024 11:17	20-May-2024 11:17	20-May-2024 11:17
Compound	CAS Number	LOR	Unit		ES2417817-001	ES2417817-003	ES2417817-004	ES2417817-005	ES2417817-008
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_0.0-0.1	MW01_1.0-1.1	MW01_1.1-1.2	MW01_1.4-1.5	MW01_3.8-3.9
				Sampling date / time	20-May-2024 10:20	20-May-2024 10:20	20-May-2024 11:17	20-May-2024 11:17	20-May-2024 11:17
Compound	CAS Number	LOR	Unit		ES2417817-001	ES2417817-003	ES2417817-004	ES2417817-005	ES2417817-008
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW01_0.0-0.1	MW01_1.0-1.1	MW01_1.1-1.2	MW01_1.4-1.5	MW01_3.8-3.9
			Sampling date / time	20-May-2024 10:20	20-May-2024 10:20	20-May-2024 11:17	20-May-2024 11:17	20-May-2024 11:17
Compound	CAS Number	LOR	Unit	ES2417817-001	ES2417817-003	ES2417817-004	ES2417817-005	ES2417817-008
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_0.0-0.1	MW01_1.0-1.1	MW01_1.1-1.2	MW01_1.4-1.5	MW01_3.8-3.9
				Sampling date / time	20-May-2024 10:20	20-May-2024 10:20	20-May-2024 11:17	20-May-2024 11:17	20-May-2024 11:17
Compound	CAS Number	LOR	Unit		ES2417817-001	ES2417817-003	ES2417817-004	ES2417817-005	ES2417817-008
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0004**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	**0.0044**	**0.0014**	**0.0050**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_0.0-0.1	MW01_1.0-1.1	MW01_1.1-1.2	MW01_1.4-1.5	MW01_3.8-3.9
				Sampling date / time	20-May-2024 10:20	20-May-2024 10:20	20-May-2024 11:17	20-May-2024 11:17	20-May-2024 11:17
Compound	CAS Number	LOR	Unit		ES2417817-001	ES2417817-003	ES2417817-004	ES2417817-005	ES2417817-008
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	**0.0044**	**0.0014**	**0.0054**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	**0.0044**	**0.0014**	**0.0054**
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**99.8**	**84.8**	**94.5**	**70.2**	**73.6**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**117**	**114**	**128**	**90.9**	**87.6**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**93.8**	**84.3**	**96.0**	**56.0**	**53.3**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**87.7**	**87.3**	**84.0**	**85.0**	**86.7**
2-Chlorophenol-D4	93951-73-6	0.5	%		**96.2**	**94.5**	**89.4**	**93.2**	**96.2**
2.4.6-Tribromophenol	118-79-6	0.5	%		**70.3**	**65.2**	**62.8**	**64.6**	**62.3**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**90.8**	**89.3**	**88.8**	**87.3**	**86.3**
Anthracene-d10	1719-06-8	0.5	%		**96.3**	**94.7**	**94.1**	**92.9**	**89.4**
4-Terphenyl-d14	1718-51-0	0.5	%		**95.5**	**94.2**	**93.6**	**94.3**	**92.5**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**80.8**	**83.3**	**82.2**	**76.6**	**78.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_0.0-0.1	MW01_1.0-1.1	MW01_1.1-1.2	MW01_1.4-1.5	MW01_3.8-3.9
				Sampling date / time	20-May-2024 10:20	20-May-2024 10:20	20-May-2024 11:17	20-May-2024 11:17	20-May-2024 11:17
Compound	CAS Number	LOR	Unit		ES2417817-001	ES2417817-003	ES2417817-004	ES2417817-005	ES2417817-008
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		84.1	88.6	90.6	82.9	87.8
4-Bromofluorobenzene	460-00-4	0.2	%		91.8	89.0	89.0	83.1	90.2
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		100	101	110	97.5	99.1
13C8-PFOA	----	0.0002	%		105	115	114	109	106

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW01_4.5-4.6	MW02_0.0-0.1	MW02_2.0-2.1	MW02_2.4-2.5	MW02_3.0-3.1
			Sampling date / time	20-May-2024 11:18	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:06
Compound	CAS Number	LOR	Unit	ES2417817-009	ES2417817-012	ES2417817-016	ES2417817-017	ES2417817-018
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	**6.6**	----	----	**6.1**	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	----	----	**6**	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	<0.02	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	**0.010**	----	----	**0.012**	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	<10	----
EA033-C: Acid Neutralising Capacity								
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	**0.38**	----	----	----	----
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	**75**	----	----	----	----
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	**0.12**	----	----	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	**1.5**	----	----	**1.5**	----
Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	**0.02**	----
Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	**13**	----
Liming Rate	----	1	kg CaCO3/t	<1	----	----	**1**	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	**0.02**	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	**13**	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	**1**	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	----	**8.7**	**11.8**	----	**17.0**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	**No**	----	----	----
Asbestos (Trace)	1332-21-4	-	-	----	**No**	----	----	----
Asbestos Type	1332-21-4	-	--	----	**-**	----	----	----
Synthetic Mineral Fibre	----	-	--	----	**No**	----	----	----
Organic Fibre	----	-	--	----	**No**	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_4.5-4.6	MW02_0.0-0.1	MW02_2.0-2.1	MW02_2.4-2.5	MW02_3.0-3.1
				Sampling date / time	20-May-2024 11:18	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:06
Compound	CAS Number	LOR	Unit		ES2417817-009	ES2417817-012	ES2417817-016	ES2417817-017	ES2417817-018
					Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils - Continued									
Sample weight (dry)	----	0.01	g		----	543	----	----	----
APPROVED IDENTIFIER:	----	-	--		----	J. PAGE	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		----	<5	<5	----	<5
Cadmium	7440-43-9	1	mg/kg		----	<1	<1	----	<1
Chromium	7440-47-3	2	mg/kg		----	5	7	----	3
Copper	7440-50-8	5	mg/kg		----	6	<5	----	<5
Lead	7439-92-1	5	mg/kg		----	<5	<5	----	<5
Nickel	7440-02-0	2	mg/kg		----	2	<2	----	<2
Zinc	7440-66-6	5	mg/kg		----	22	<5	----	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	----	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	<0.1	----	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Aldrin	309-00-2	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	<0.05	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_4.5-4.6	MW02_0.0-0.1	MW02_2.0-2.1	MW02_2.4-2.5	MW02_3.0-3.1
				Sampling date / time	20-May-2024 11:18	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:06
Compound	CAS Number	LOR	Unit		ES2417817-009	ES2417817-012	ES2417817-016	ES2417817-017	ES2417817-018
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Dieldrin	60-57-1	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Endrin	72-20-8	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
Malathion	121-75-5	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Parathion	56-38-2	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_4.5-4.6	MW02_0.0-0.1	MW02_2.0-2.1	MW02_2.4-2.5	MW02_3.0-3.1
				Sampling date / time	20-May-2024 11:18	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:06
Compound	CAS Number	LOR	Unit		ES2417817-009	ES2417817-012	ES2417817-016	ES2417817-017	ES2417817-018
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Ethion	563-12-2	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	<0.05	----	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	<1	----	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		----	<2	<2	----	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_4.5-4.6	MW02_0.0-0.1	MW02_2.0-2.1	MW02_2.4-2.5	MW02_3.0-3.1
				Sampling date / time	20-May-2024 11:18	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:06
Compound	CAS Number	LOR	Unit		ES2417817-009	ES2417817-012	ES2417817-016	ES2417817-017	ES2417817-018
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		----	**0.6**	**0.6**	----	**0.6**
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		----	**1.2**	**1.2**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		----	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	----	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		----	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	----	<100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW01_4.5-4.6	MW02_0.0-0.1	MW02_2.0-2.1	MW02_2.4-2.5	MW02_3.0-3.1
				Sampling date / time	20-May-2024 11:18	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:06
Compound	CAS Number	LOR	Unit		ES2417817-009	ES2417817-012	ES2417817-016	ES2417817-017	ES2417817-018
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	----	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	<0.0002	<0.0002	----	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	<0.0002	<0.0002	----	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	**0.0190**	**0.0011**	----	**0.0011**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	<0.001	<0.001	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	<0.0002	<0.0002	----	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	<0.0002	----	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	<0.0002	----	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	<0.0002	<0.0002	----	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	<0.0005	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	<0.0005	----	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW01_4.5-4.6	MW02_0.0-0.1	MW02_2.0-2.1	MW02_2.4-2.5	MW02_3.0-3.1
			Sampling date / time	20-May-2024 11:18	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:05	20-May-2024 14:06
Compound	CAS Number	LOR	Unit	ES2417817-009	ES2417817-012	ES2417817-016	ES2417817-017	ES2417817-018
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	----	<0.0005	<0.0005	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	----	<0.0005	<0.0005	----	<0.0005
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	----	**0.0190**	**0.0011**	----	**0.0011**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	----	**0.0190**	**0.0011**	----	**0.0011**
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	**78.2**	**70.2**	----	**76.5**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	**97.9**	**89.7**	----	**93.9**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	**53.6**	**50.0**	----	**50.6**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	**97.6**	**83.2**	----	**82.8**
2-Chlorophenol-D4	93951-73-6	0.5	%	----	**101**	**92.5**	----	**89.4**
2.4.6-Tribromophenol	118-79-6	0.5	%	----	**60.0**	**60.5**	----	**60.3**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	**86.5**	**85.9**	----	**84.8**
Anthracene-d10	1719-06-8	0.5	%	----	**95.6**	**90.8**	----	**91.2**
4-Terphenyl-d14	1718-51-0	0.5	%	----	**97.5**	**93.4**	----	**92.9**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	----	**89.2**	**71.7**	----	**84.3**
Toluene-D8	2037-26-5	0.2	%	----	**94.5**	**89.4**	----	**89.3**
4-Bromofluorobenzene	460-00-4	0.2	%	----	**94.9**	**110**	----	**90.0**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	----	**95.8**	**94.0**	----	**96.6**
13C8-PFOA	----	0.0002	%	----	**105**	**115**	----	**113**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW02_5.0-5.1	MW03_0.0-0.1	MW03_1.5-1.6	MW03_1.9-2.0	MW03_3.5-3.6
			Sampling date / time	20-May-2024 14:06	20-May-2024 14:07	20-May-2024 14:08	20-May-2024 14:08	20-May-2024 14:08
Compound	CAS Number	LOR	Unit	ES2417817-020	ES2417817-023	ES2417817-026	ES2417817-027	ES2417817-029
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	**5.9**	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	**6**	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	----	----	<0.02	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	----	----	**0.008**	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	----	----	<10	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	**1.5**	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	<0.02	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	**10**	----
Liming Rate	----	1	kg CaCO3/t	----	----	----	<1	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	----	<0.02	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	----	**10**	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	----	<1	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**15.7**	**5.9**	**11.4**	----	**14.0**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	**No**	----	----	----
Asbestos (Trace)	1332-21-4	-	-	----	**No**	----	----	----
Asbestos Type	1332-21-4	-	--	----	**-**	----	----	----
Synthetic Mineral Fibre	----	-	--	----	**No**	----	----	----
Organic Fibre	----	-	--	----	**No**	----	----	----
Sample weight (dry)	----	0.01	g	----	**399**	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	**J. PAGE**	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	----	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW02_5.0-5.1	MW03_0.0-0.1	MW03_1.5-1.6	MW03_1.9-2.0	MW03_3.5-3.6
			Sampling date / time	20-May-2024 14:06	20-May-2024 14:07	20-May-2024 14:08	20-May-2024 14:08	20-May-2024 14:08
Compound	CAS Number	LOR	Unit	ES2417817-020	ES2417817-023	ES2417817-026	ES2417817-027	ES2417817-029
				Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued								
Chromium	7440-47-3	2	mg/kg	<2	**9**	<2	----	**2**
Copper	7440-50-8	5	mg/kg	<5	**9**	<5	----	<5
Lead	7439-92-1	5	mg/kg	<5	**6**	<5	----	<5
Nickel	7440-02-0	2	mg/kg	<2	**4**	<2	----	<2
Zinc	7440-66-6	5	mg/kg	<5	**34**	<5	----	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	----	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW02_5.0-5.1	MW03_0.0-0.1	MW03_1.5-1.6	MW03_1.9-2.0	MW03_3.5-3.6
				Sampling date / time	20-May-2024 14:06	20-May-2024 14:07	20-May-2024 14:08	20-May-2024 14:08	20-May-2024 14:08
Compound	CAS Number	LOR	Unit		ES2417817-020	ES2417817-023	ES2417817-026	ES2417817-027	ES2417817-029
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW02_5.0-5.1	MW03_0.0-0.1	MW03_1.5-1.6	MW03_1.9-2.0	MW03_3.5-3.6
			Sampling date / time	20-May-2024 14:06	20-May-2024 14:07	20-May-2024 14:08	20-May-2024 14:08	20-May-2024 14:08
Compound	CAS Number	LOR	Unit	ES2417817-020	ES2417817-023	ES2417817-026	ES2417817-027	ES2417817-029
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	----	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	----	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW02_5.0-5.1	MW03_0.0-0.1	MW03_1.5-1.6	MW03_1.9-2.0	MW03_3.5-3.6
				Sampling date / time	20-May-2024 14:06	20-May-2024 14:07	20-May-2024 14:08	20-May-2024 14:08	20-May-2024 14:08
Compound	CAS Number	LOR	Unit		ES2417817-020	ES2417817-023	ES2417817-026	ES2417817-027	ES2417817-029
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	----	**0.6**
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW02_5.0-5.1	MW03_0.0-0.1	MW03_1.5-1.6	MW03_1.9-2.0	MW03_3.5-3.6
				Sampling date / time	20-May-2024 14:06	20-May-2024 14:07	20-May-2024 14:08	20-May-2024 14:08	20-May-2024 14:08
Compound	CAS Number	LOR	Unit		ES2417817-020	ES2417817-023	ES2417817-026	ES2417817-027	ES2417817-029
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0006**	<0.0002	**0.0020**	----	**0.0006**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0006**	<0.0002	**0.0020**	----	**0.0006**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW02_5.0-5.1	MW03_0.0-0.1	MW03_1.5-1.6	MW03_1.9-2.0	MW03_3.5-3.6
			Sampling date / time	20-May-2024 14:06	20-May-2024 14:07	20-May-2024 14:08	20-May-2024 14:08	20-May-2024 14:08
Compound	CAS Number	LOR	Unit	ES2417817-020	ES2417817-023	ES2417817-026	ES2417817-027	ES2417817-029
				Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued								
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0006**	<0.0002	**0.0020**	**----**	**0.0006**
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**102**	**70.8**	**86.4**	**----**	**89.5**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**116**	**89.7**	**110**	**----**	**105**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**63.5**	**64.2**	**75.2**	**----**	**52.3**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**92.1**	**81.9**	**83.0**	**----**	**83.5**
2-Chlorophenol-D4	93951-73-6	0.5	%	**92.8**	**89.4**	**89.1**	**----**	**94.1**
2.4.6-Tribromophenol	118-79-6	0.5	%	**57.8**	**52.6**	**71.4**	**----**	**61.9**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**82.0**	**86.2**	**84.0**	**----**	**85.7**
Anthracene-d10	1719-06-8	0.5	%	**90.0**	**91.2**	**87.6**	**----**	**89.0**
4-Terphenyl-d14	1718-51-0	0.5	%	**91.4**	**93.4**	**91.9**	**----**	**91.7**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**90.7**	**80.2**	**81.1**	**----**	**79.3**
Toluene-D8	2037-26-5	0.2	%	**94.6**	**83.3**	**87.2**	**----**	**79.2**
4-Bromofluorobenzene	460-00-4	0.2	%	**91.7**	**87.4**	**87.3**	**----**	**80.5**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**92.6**	**107**	**103**	**----**	**101**
13C8-PFOA	----	0.0002	%	**112**	**116**	**109**	**----**	**107**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC100	QC101	----	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2417817-033	ES2417817-034	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**----**	**5.7**	----	----	----
Moisture Content	----	1.0	%		**6.3**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		**17**	----	----	----	----
Copper	7440-50-8	5	mg/kg		**14**	----	----	----	----
Lead	7439-92-1	5	mg/kg		<5	----	----	----	----
Nickel	7440-02-0	2	mg/kg		**12**	----	----	----	----
Zinc	7440-66-6	5	mg/kg		**35**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC100	QC101	----	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2417817-033	ES2417817-034	--------	--------	--------
					Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC100	QC101	----	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2417817-033	ES2417817-034	--------	--------	--------
					Result	Result	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC100	QC101	----	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2417817-033	ES2417817-034	--------	--------	--------
					Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	----	----	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC100	QC101	----	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2417817-033	ES2417817-034	--------	--------	--------
					Result	Result	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC100	QC101	----	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2417817-033	ES2417817-034	--------	--------	--------
					Result	Result	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**72.5**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**93.3**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**53.8**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**88.7**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**95.6**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**62.1**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**91.1**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**95.3**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**97.6**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**94.6**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**100**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**99.3**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**98.6**	**98.7**	----	----	----
13C8-PFOA	----	0.0002	%		**109**	**113**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC300	QC301	QC400	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	20-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417817-035	ES2417817-036	ES2417817-037	--------	--------
					Result	Result	Result	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ **Total Polychlorinated biphenyls**	----	1	µg/L		<1	<1	<1	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
beta-BHC	319-85-7	0.5	µg/L		<0.5	<0.5	<0.5	----	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	<0.5	<0.5	----	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	<0.5	<0.5	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	<0.5	<0.5	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
4.4`-DDE	72-55-9	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Endrin	72-20-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC300	QC301	QC400	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	20-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417817-035	ES2417817-036	ES2417817-037	--------	--------
					Result	Result	Result	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
4.4`-DDT	50-29-3	2.0	µg/L		<2.0	<2.0	<2.0	----	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Methoxychlor	72-43-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
^ **Total Chlordane (sum)**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	<2.0	<2.0	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	<2.0	<2.0	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	<2.0	<2.0	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC300	QC301	QC400	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	20-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417817-035	ES2417817-036	ES2417817-037	--------	--------
					Result	Result	Result	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Ethion	563-12-2	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC300	QC301	QC400	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	20-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417817-035	ES2417817-036	ES2417817-037	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	<100	<100	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	<100	<100	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC300	QC301	QC400	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	20-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417817-035	ES2417817-036	ES2417817-037	--------	--------
					Result	Result	Result	----	----
EP080: BTEXN - Continued									
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	<0.01	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	<0.01	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	<0.01	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC300	QC301	QC400	----	----
				Sampling date / time	20-May-2024 00:00	20-May-2024 00:00	20-May-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2417817-035	ES2417817-036	ES2417817-037	--------	--------
					Result	Result	Result	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		**116**	**105**	**93.0**	**----**	**----**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		**114**	**110**	**92.6**	**----**	**----**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		**92.3**	**85.5**	**70.5**	**----**	**----**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**27.8**	**26.4**	**19.2**	**----**	**----**
2-Chlorophenol-D4	93951-73-6	1.0	%		**56.3**	**48.6**	**37.0**	**----**	**----**
2.4.6-Tribromophenol	118-79-6	1.0	%		**40.7**	**35.8**	**27.6**	**----**	**----**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**82.4**	**95.8**	**92.6**	**----**	**----**
Anthracene-d10	1719-06-8	1.0	%		**85.9**	**84.5**	**72.6**	**----**	**----**
4-Terphenyl-d14	1718-51-0	1.0	%		**93.9**	**91.6**	**78.4**	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**97.7**	**99.0**	**96.3**	**----**	**----**
Toluene-D8	2037-26-5	2	%		**110**	**115**	**112**	**----**	**----**
4-Bromofluorobenzene	460-00-4	2	%		**117**	**119**	**117**	**----**	**----**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.1**	**----**	**97.1**	**----**	**----**
13C8-PFOA	----	0.02	%		**106**	**----**	**100**	**----**	**----**

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	MW01_0.0-0.1 - 20-May-2024 10:20	Soil sample.
EA200: Description	MW02_0.0-0.1 - 20-May-2024 14:05	Soil sample.
EA200: Description	MW03_0.0-0.1 - 20-May-2024 14:07	Soil sample.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	45	134
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	50	150
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	50	150
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EA033-B: Potential Acidity

(SOIL) EA033-C: Acid Neutralising Capacity

(SOIL) EA033-D: Retained Acidity

(SOIL) EA033-A: Actual Acidity

(SOIL) EA033-E: Acid Base Accounting

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

QUALITY CONTROL REPORT

Work Order	: **ES2417817**	Page	: 1 of 21
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MEGAN FERGUSON	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: S20283 PEW Investigation	Date Samples Received	: 30-May-2024
Order number	: ----	Date Analysis Commenced	: 31-May-2024
C-O-C number	: ----	Issue Date	: 11-Jun-2024
Sampler	: Megan Ferguson		
Site	: ----		
Quote number	: EN/000		
No. of samples received	: 37		
No. of samples analysed	: 20		

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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

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

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5827855)									
ES2417419-004	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	26	26	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	11	11	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	30	5.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	14	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	34	34	0.0	No Limit
ES2417817-008	MW01_3.8-3.9	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
EA033-A: Actual Acidity (QC Lot: 5845476)									
EB2419414-020	Anonymous	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	7	7	0.0	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	5.8	5.7	0.0	0% - 20%
ES2417817-017	MW02_2.4-2.5	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	6	6	0.0	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	6.1	6.0	0.0	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA033-B: Potential Acidity (QC Lot: 5845476)									
EB2419414-020	Anonymous	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.008	0.008	0.0	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.0	No Limit
ES2417817-017	MW02_2.4-2.5	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.012	0.010	21.3	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5827858)									
ES2417419-007	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	10.9	11.9	8.6	0% - 50%
ES2417817-020	MW02_5.0-5.1	EA055: Moisture Content	----	0.1 (1.0)*	%	15.7	16.4	3.9	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5829060)									
ES2417955-002	Anonymous	EA055: Moisture Content	----	0.1	%	85.3	85.1	0.3	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5827856)									
ES2417419-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2417817-008	MW01_3.8-3.9	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5827592)									
ES2417732-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2417817-023	MW03_0.0-0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5827591)									
ES2417732-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5827591) - continued									
ES2417732-001	Anonymous	EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2417817-023	MW03_0.0-0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5827591)									
ES2417732-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5827591) - continued									
ES2417732-001	Anonymous	EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2417817-023	MW03_0.0-0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5827590)									
ES2417732-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES2417817-023	MW03_0.0-0.1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 5827590) - continued									
ES2417817-023	MW03_0.0-0.1	EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5827590)									
ES2417732-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	1.6	1.8	9.5	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	1.1	1.2	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	11.1	12.4	11.1	0% - 20%
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	3.2	3.3	3.9	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	12.8	14.5	12.4	0% - 20%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	11.5	12.8	10.7	0% - 20%
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	5.4	5.5	1.9	0% - 50%
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	4.8	5.2	8.7	0% - 50%
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	5.3	5.5	3.6	0% - 50%
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	2.3	2.6	14.1	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	6.4	6.3	1.7	0% - 50%
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	3.0	3.2	4.5	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	0.9	0.9	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	2.9	3.1	4.7	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	72.3	78.3	8.0	0% - 20%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	9.0	9.0	0.0	0% - 50%
ES2417817-023	MW03_0.0-0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5827590) - continued									
ES2417817-023	MW03_0.0-0.1	EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5827589)									
ES2417732-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	180	210	12.2	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	120	130	10.6	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2417817-023	MW03_0.0-0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5827974)									
ES2417817-001	MW01_0.0-0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2417817-026	MW03_1.5-1.6	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5827589)									
ES2417732-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	280	300	6.5	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2417817-023	MW03_0.0-0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5827974)									
ES2417817-001	MW01_0.0-0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2417817-026	MW03_1.5-1.6	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 5827974)									
ES2417817-001	MW01_0.0-0.1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 5827974) - continued									
ES2417817-001	MW01_0.0-0.1	EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2417817-026	MW03_1.5-1.6	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5827846)									
ES2417450-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
ES2417817-008	MW01_3.8-3.9	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0004	0.0003	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0050	0.0047	5.2	0% - 20%
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5827846)									
ES2417450-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ES2417817-008	MW01_3.8-3.9	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5827846)									
ES2417450-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5827846) - continued									
ES2417450-001	Anonymous	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2417817-008	MW01_3.8-3.9	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5827479)									
ES2417859-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
ES2417803-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001 (0.0010)*	mg/L	<0.0010	<0.0010	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001 (0.010) *	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001 (0.010) *	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001 (0.010) *	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001 (0.010) *	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001 (0.010) *	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005 (0.050) *	mg/L	<0.050	<0.050	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 5827475)									
ES2417462-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2417803-005	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5828306)									
ES2417705-014	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5828306) - continued									
ES2417722-012	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5828306)									
ES2417705-014	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2417722-012	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 5828306)									
ES2417705-014	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2417722-012	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5828687)									
ES2417869-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	<0.01	82.2	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5828687)									
ES2417869-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5828687)									
ES2417869-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5827855)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	97.5	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	104	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	108	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	99.5	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	95.1	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	93.0	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	94.2	66.0	133
EA033-A: Actual Acidity (QCLot: 5845476)								
EA033: pH KCl (23A)	----	----	pH Unit	----	4.7 pH Unit	102	80.0	120
EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	23.5 mole H+ / t	107	80.0	120
EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-B: Potential Acidity (QCLot: 5845476)								
EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.246 % S	81.8	77.0	121
EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	----	----
EA033-C: Acid Neutralising Capacity (QCLot: 5845476)								
EA033: Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	<0.01	10 % CaCO3	104	91.0	112
EA033: acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	<10	----	----	----	----
EA033: sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	<0.01	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5827856)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	91.8	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5827592)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	94.8	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 5827591)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	82.8	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	81.8	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	76.1	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.4	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	83.8	69.0	115

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5827591) - continued								
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	80.6	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.0	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	82.4	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	76.8	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	92.5	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.0	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	93.4	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5827591)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	75.7	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	79.7	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	79.6	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.9	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	82.5	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	78.4	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	82.7	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	81.6	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	82.7	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	77.2	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.1	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.9	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	77.9	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	77.7	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.9	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	73.2	41.0	123

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 5827590)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	89.1	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	89.5	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	89.6	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	89.4	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	80.8	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	95.6	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	89.4	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	89.6	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	96.4	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	71.7	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	71.1	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	28.8	10.0	80.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5827590)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	98.0	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	90.4	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	92.0	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	93.6	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	93.0	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	93.6	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	93.0	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	95.1	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.2	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	103	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	90.8	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	97.7	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	88.8	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	89.3	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	96.2	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	96.1	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5827589)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	102	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	101	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	110	71.0	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5827974)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	84.4	72.2	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5827589)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	107	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	108	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	109	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5827974)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	86.8	72.4	133
EP080: BTEXN (QCLot: 5827974)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	93.3	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	95.6	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	93.3	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	95.1	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	101	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	98.4	78.8	122
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5827846)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.8	72.0	128
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	81.4	67.0	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.7	68.0	136
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5827846)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	98.2	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.3	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.2	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.5	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5827846)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	123	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	96.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	95.0	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	108	69.2	143

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5827479)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5827479) - continued								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.4	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.9	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.8	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	94.2	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	91.8	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.4	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 5827475)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.4	83.0	105
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5827915)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	98.1	68.9	113
EP068A: Organochlorine Pesticides (OC) (QCLot: 5827913)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	84.8	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	83.7	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	81.4	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	86.6	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	86.5	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	87.2	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.4	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	85.9	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	94.1	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	91.0	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	89.3	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	98.9	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	93.8	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	81.5	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	86.6	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	84.3	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	88.0	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	99.6	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	96.4	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	104	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	106	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5827913)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
				Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)
						LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5827913) - continued								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	74.6	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	89.7	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.5	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	80.7	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	92.5	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	88.7	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	80.8	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	85.3	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	87.9	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	90.9	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	80.6	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	89.5	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	85.7	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	89.7	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	81.4	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	91.1	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	88.6	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	100	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	89.7	51.6	128
EP075(SIM)A: Phenolic Compounds (QCLot: 5827914)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	45.8	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	76.9	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	78.6	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	59.5	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	70.3	48.0	100
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	67.4	49.0	99.0
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	71.0	53.0	105
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	78.6	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	69.4	53.0	99.0
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	79.8	50.0	106
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	77.1	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	42.4	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5827914)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	75.4	50.0	94.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5827914) - continued								
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	75.7	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	80.3	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	78.0	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	75.6	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	70.4	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	85.0	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	84.7	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	78.2	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	78.2	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	82.4	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	67.4	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	75.0	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	70.8	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	71.6	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	72.5	59.1	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5827912)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	60.8	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	83.1	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	75.5	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5828306)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	84.2	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5827912)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	59.7	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	73.1	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	62.4	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5828306)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	83.4	75.0	127
EP080: BTEXN (QCLot: 5828306)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.6	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	98.5	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	104	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	99.6	76.4	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 5828306) - continued								
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	112	75.5	124
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5828687)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	79.6	72.0	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	92.8	68.0	131
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	96.6	65.0	140
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5828687)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	88.7	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.3	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	94.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	96.7	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	101	71.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5828687)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	92.2	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	104	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	119	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	126	71.4	144

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5827855)							
ES2417419-004	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	91.2	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	93.3	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	94.7	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	95.5	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	92.8	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	92.8	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	96.6	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5827856)							
ES2417419-004	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	93.3	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5827592)							
ES2417732-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	94.1	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5827591)							
ES2417732-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	93.8	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	93.0	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	83.8	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	97.8	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	90.3	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	84.1	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5827591)							
ES2417732-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	85.1	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	78.5	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	85.4	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	82.1	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	89.2	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5827590)							
ES2417732-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	88.1	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	89.5	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	77.8	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	86.4	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	70.8	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5827590)							
ES2417732-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	90.7	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	94.4	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5827589)							
ES2417732-001	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	98.0	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	104	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	113	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5827974)							
ES2417817-001	MW01_0.0-0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	71.9	60.4	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5827589)							
ES2417732-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	94.4	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	120	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	123	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5827974)							
ES2417817-001	MW01_0.0-0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	72.5	61.1	142
EP080: BTEXN (QCLot: 5827974)							
ES2417817-001	MW01_0.0-0.1	EP080: Benzene	71-43-2	2.5 mg/kg	77.5	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	81.1	66.6	119

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 5827974) - continued							
ES2417817-001	MW01_0.0-0.1	EP080: Ethylbenzene	100-41-4	2.5 mg/kg	80.5	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	79.1	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	86.6	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	71.4	61.1	115
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5827846)							
ES2417450-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	94.2	72.0	128
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	80.8	67.0	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	112	68.0	136
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5827846)							
ES2417450-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	101	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	93.5	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	98.5	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	95.4	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	103	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5827846)							
ES2417450-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	122	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	89.6	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	105	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	114	69.2	143

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5827479)							
ES2417803-002	Anonymous	EG020A-F: Arsenic	7440-38-2	10 mg/L	93.2	70.0	130
		EG020A-F: Cadmium	7440-43-9	2.5 mg/L	92.0	70.0	130
		EG020A-F: Chromium	7440-47-3	10 mg/L	88.4	70.0	130
		EG020A-F: Copper	7440-50-8	10 mg/L	86.8	70.0	130
		EG020A-F: Lead	7439-92-1	10 mg/L	88.3	70.0	130
		EG020A-F: Nickel	7440-02-0	10 mg/L	86.5	70.0	130
		EG020A-F: Zinc	7440-66-6	10 mg/L	88.5	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 5827475)							
ES2417462-004	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	87.6	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5828306)							
ES2417705-014	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	75.6	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5828306)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5828306) - continued							
ES2417705-014	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	76.4	70.0	130
EP080: BTEXN (QCLot: 5828306)							
ES2417705-014	Anonymous	EP080: Benzene	71-43-2	25 µg/L	80.4	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	93.7	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	91.7	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	93.5	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	94.1	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	93.9	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2417817**	Page	: 1 of 15
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MEGAN FERGUSON	Telephone	: +61-2-8784 8555
Project	: S20283 PEW Investigation	Date Samples Received	: 30-May-2024
Site	: ----	Issue Date	: 11-Jun-2024
Sampler	: Megan Ferguson	No. of samples received	: 37
Order number	: ----	No. of samples analysed	: 20

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP066: Polychlorinated Biphenyls (PCB)						
Amber Glass Bottle - Unpreserved						
QC300, QC301, QC400	31-May-2024	27-May-2024	**4**	----	----	----
EP068A: Organochlorine Pesticides (OC)						
Amber Glass Bottle - Unpreserved						
QC300, QC301, QC400	31-May-2024	27-May-2024	**4**	----	----	----
EP068B: Organophosphorus Pesticides (OP)						
Amber Glass Bottle - Unpreserved						
QC300, QC301, QC400	31-May-2024	27-May-2024	**4**	----	----	----
EP075(SIM)A: Phenolic Compounds						
Amber Glass Bottle - Unpreserved						
QC300, QC301, QC400	31-May-2024	27-May-2024	**4**	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Amber Glass Bottle - Unpreserved						
QC300, QC301, QC400	31-May-2024	27-May-2024	**4**	----	----	----
EP080/071: Total Petroleum Hydrocarbons						
Amber Glass Bottle - Unpreserved						
QC300, QC301, QC400	31-May-2024	27-May-2024	**4**	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						
Amber Glass Bottle - Unpreserved						
QC300, QC301, QC400	31-May-2024	27-May-2024	**4**	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Analytical Methods	Method	Count		Rate (%)		Quality Control Specification
		QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Matrix Spikes (MS)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA033-A: Actual Acidity								
Snap Lock Bag - frozen (EA033)								
MW01_4.5-4.6,	MW02_2.4-2.5,	**20-May-2024**	**10-Jun-2024**	20-May-2025	✓	**10-Jun-2024**	08-Sep-2024	✓
MW03_1.9-2.0								
EA033-B: Potential Acidity								
Snap Lock Bag - frozen (EA033)								
MW01_4.5-4.6,	MW02_2.4-2.5,	**20-May-2024**	**10-Jun-2024**	20-May-2025	✓	**10-Jun-2024**	08-Sep-2024	✓
MW03_1.9-2.0								
EA033-C: Acid Neutralising Capacity								
Snap Lock Bag - frozen (EA033)								
MW01_4.5-4.6,	MW02_2.4-2.5,	**20-May-2024**	**10-Jun-2024**	20-May-2025	✓	**10-Jun-2024**	08-Sep-2024	✓
MW03_1.9-2.0								
EA033-D: Retained Acidity								
Snap Lock Bag - frozen (EA033)								
MW01_4.5-4.6,	MW02_2.4-2.5,	**20-May-2024**	**10-Jun-2024**	20-May-2025	✓	**10-Jun-2024**	08-Sep-2024	✓
MW03_1.9-2.0								
EA033-E: Acid Base Accounting								
Snap Lock Bag - frozen (EA033)								
MW01_4.5-4.6,	MW02_2.4-2.5,	**20-May-2024**	**10-Jun-2024**	20-May-2025	✓	**10-Jun-2024**	08-Sep-2024	✓
MW03_1.9-2.0								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
MW01_0.0-0.1,	MW01_1.0-1.1,	**20-May-2024**	**----**	----	**----**	**31-May-2024**	03-Jun-2024	✓
MW01_1.1-1.2,	MW01_1.4-1.5,							
MW01_3.8-3.9,	MW02_0.0-0.1,							
MW02_2.0-2.1,	MW02_3.0-3.1,							
MW02_5.0-5.1,	MW03_0.0-0.1,							
MW03_1.5-1.6,	MW03_3.5-3.6,							
QC100,	QC101							
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)								
MW01_0.0-0.1,	MW02_0.0-0.1,	**20-May-2024**	**----**	----	**----**	**31-May-2024**	16-Nov-2024	✓
MW03_0.0-0.1								
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
MW01_0.0-0.1,	MW01_1.0-1.1,	**20-May-2024**	**31-May-2024**	16-Nov-2024	✓	**03-Jun-2024**	16-Nov-2024	✓
MW01_1.1-1.2,	MW01_1.4-1.5,							
MW01_3.8-3.9,	MW02_0.0-0.1,							
MW02_2.0-2.1,	MW02_3.0-3.1,							
MW02_5.0-5.1,	MW03_0.0-0.1,							
MW03_1.5-1.6,	MW03_3.5-3.6,							
QC100								
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
MW01_0.0-0.1,	MW01_1.0-1.1,	**20-May-2024**	**31-May-2024**	17-Jun-2024	✓	**04-Jun-2024**	17-Jun-2024	✓
MW01_1.1-1.2,	MW01_1.4-1.5,							
MW01_3.8-3.9,	MW02_0.0-0.1,							
MW02_2.0-2.1,	MW02_3.0-3.1,							
MW02_5.0-5.1,	MW03_0.0-0.1,							
MW03_1.5-1.6,	MW03_3.5-3.6,							
QC100								
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
MW01_1.4-1.5,	MW01_3.8-3.9,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**01-Jun-2024**	10-Jul-2024	✓
MW02_0.0-0.1,	MW02_2.0-2.1,							
MW02_3.0-3.1,	MW02_5.0-5.1,							
MW03_0.0-0.1,	MW03_1.5-1.6,							
MW03_3.5-3.6,	QC100							
Soil Glass Jar - Unpreserved (EP066)								
MW01_0.0-0.1,	MW01_1.0-1.1,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**31-May-2024**	10-Jul-2024	✓
MW01_1.1-1.2								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
MW01_0.0-0.1,	MW01_1.0-1.1,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**01-Jun-2024**	10-Jul-2024	✓
MW01_1.1-1.2,	MW01_1.4-1.5,							
MW01_3.8-3.9,	MW02_0.0-0.1,							
MW02_2.0-2.1,	MW02_3.0-3.1,							
MW02_5.0-5.1								
Soil Glass Jar - Unpreserved (EP068)								
MW03_0.0-0.1,	MW03_1.5-1.6,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**02-Jun-2024**	10-Jul-2024	✓
MW03_3.5-3.6,	QC100							
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068)								
MW01_0.0-0.1,	MW01_1.0-1.1,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**01-Jun-2024**	10-Jul-2024	✓
MW01_1.1-1.2,	MW01_1.4-1.5,							
MW01_3.8-3.9,	MW02_0.0-0.1,							
MW02_2.0-2.1,	MW02_3.0-3.1,							
MW02_5.0-5.1								
Soil Glass Jar - Unpreserved (EP068)								
MW03_0.0-0.1,	MW03_1.5-1.6,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**02-Jun-2024**	10-Jul-2024	✓
MW03_3.5-3.6,	QC100							
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM))								
MW01_1.1-1.2,	MW01_1.4-1.5,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**01-Jun-2024**	10-Jul-2024	✓
MW01_3.8-3.9,	MW02_0.0-0.1,							
MW02_2.0-2.1,	MW02_3.0-3.1,							
MW02_5.0-5.1,	MW03_0.0-0.1,							
MW03_1.5-1.6,	MW03_3.5-3.6,							
QC100								
Soil Glass Jar - Unpreserved (EP075(SIM))								
MW01_0.0-0.1,	MW01_1.0-1.1	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**31-May-2024**	10-Jul-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
MW01_1.1-1.2,	MW01_1.4-1.5,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**01-Jun-2024**	10-Jul-2024	✓
MW01_3.8-3.9,	MW02_0.0-0.1,							
MW02_2.0-2.1,	MW02_3.0-3.1,							
MW02_5.0-5.1,	MW03_0.0-0.1,							
MW03_1.5-1.6,	MW03_3.5-3.6,							
QC100								
Soil Glass Jar - Unpreserved (EP075(SIM))								
MW01_0.0-0.1,	MW01_1.0-1.1	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**31-May-2024**	10-Jul-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071)							
MW01_0.0-0.1, MW01_1.0-1.1, MW01_1.1-1.2, MW01_1.4-1.5, MW01_3.8-3.9, MW02_0.0-0.1, MW02_2.0-2.1, MW02_3.0-3.1, MW02_5.0-5.1, MW03_0.0-0.1, MW03_1.5-1.6, MW03_3.5-3.6, QC100	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**01-Jun-2024**	10-Jul-2024	✓
Soil Glass Jar - Unpreserved (EP080)							
MW02_2.0-2.1	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**03-Jun-2024**	03-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP080)							
MW01_0.0-0.1, MW01_1.0-1.1, MW01_1.1-1.2, MW01_1.4-1.5, MW01_3.8-3.9, MW02_0.0-0.1, MW02_3.0-3.1, MW02_5.0-5.1, MW03_0.0-0.1, MW03_1.5-1.6, MW03_3.5-3.6, QC100	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**31-May-2024**	03-Jun-2024	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP071)							
MW01_0.0-0.1, MW01_1.0-1.1, MW01_1.1-1.2, MW01_1.4-1.5, MW01_3.8-3.9, MW02_0.0-0.1, MW02_2.0-2.1, MW02_3.0-3.1, MW02_5.0-5.1, MW03_0.0-0.1, MW03_1.5-1.6, MW03_3.5-3.6, QC100	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**01-Jun-2024**	10-Jul-2024	✓
Soil Glass Jar - Unpreserved (EP080)							
MW02_2.0-2.1	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**03-Jun-2024**	03-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP080)							
MW01_0.0-0.1, MW01_1.0-1.1, MW01_1.1-1.2, MW01_1.4-1.5, MW01_3.8-3.9, MW02_0.0-0.1, MW02_3.0-3.1, MW02_5.0-5.1, MW03_0.0-0.1, MW03_1.5-1.6, MW03_3.5-3.6, QC100	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**31-May-2024**	03-Jun-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
MW02_2.0-2.1	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**03-Jun-2024**	03-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP080)							
MW01_0.0-0.1, MW01_1.0-1.1, MW01_1.1-1.2, MW01_1.4-1.5, MW01_3.8-3.9, MW02_0.0-0.1, MW02_3.0-3.1, MW02_5.0-5.1, MW03_0.0-0.1, MW03_1.5-1.6, MW03_3.5-3.6, QC100	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**31-May-2024**	03-Jun-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
MW01_0.0-0.1, MW01_1.0-1.1, MW01_1.1-1.2, MW01_1.4-1.5, MW01_3.8-3.9, MW02_0.0-0.1, MW02_2.0-2.1, MW02_3.0-3.1, MW02_5.0-5.1, MW03_0.0-0.1, MW03_1.5-1.6, MW03_3.5-3.6, QC100, QC101	**20-May-2024**	**31-May-2024**	16-Nov-2024	✓	**03-Jun-2024**	10-Jul-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
MW01_0.0-0.1, MW01_1.0-1.1, MW01_1.1-1.2, MW01_1.4-1.5, MW01_3.8-3.9, MW02_0.0-0.1, MW02_2.0-2.1, MW02_3.0-3.1, MW02_5.0-5.1, MW03_0.0-0.1, MW03_1.5-1.6, MW03_3.5-3.6, QC100, QC101	**20-May-2024**	**31-May-2024**	16-Nov-2024	✓	**03-Jun-2024**	10-Jul-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
MW01_0.0-0.1, MW01_1.0-1.1, MW01_1.1-1.2, MW01_1.4-1.5, MW01_3.8-3.9, MW02_0.0-0.1, MW02_2.0-2.1, MW02_3.0-3.1, MW02_5.0-5.1, MW03_0.0-0.1, MW03_1.5-1.6, MW03_3.5-3.6, QC100, QC101	**20-May-2024**	**31-May-2024**	16-Nov-2024	✓	**03-Jun-2024**	10-Jul-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X)								
MW01_0.0-0.1,	MW01_1.0-1.1,	**20-May-2024**	**31-May-2024**	16-Nov-2024	✓	**03-Jun-2024**	10-Jul-2024	✓
MW01_1.1-1.2,	MW01_1.4-1.5,							
MW01_3.8-3.9,	MW02_0.0-0.1,							
MW02_2.0-2.1,	MW02_3.0-3.1,							
MW02_5.0-5.1,	MW03_0.0-0.1,							
MW03_1.5-1.6,	MW03_3.5-3.6,							
QC100,	QC101							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
QC300,	QC301,	**20-May-2024**	**----**	----	----	**31-May-2024**	16-Nov-2024	✓
QC400								
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
QC300,	QC301,	**20-May-2024**	**----**	----	----	**03-Jun-2024**	17-Jun-2024	✓
QC400								
EP066: Polychlorinated Biphenyls (PCB)								
Amber Glass Bottle - Unpreserved (EP066)								
QC300,	QC301,	**20-May-2024**	**31-May-2024**	27-May-2024	×	**03-Jun-2024**	10-Jul-2024	✓
QC400								
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
QC300,	QC301,	**20-May-2024**	**31-May-2024**	27-May-2024	×	**04-Jun-2024**	10-Jul-2024	✓
QC400								
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068)								
QC300,	QC301,	**20-May-2024**	**31-May-2024**	27-May-2024	×	**04-Jun-2024**	10-Jul-2024	✓
QC400								
EP075(SIM)A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
QC300,	QC301,	**20-May-2024**	**31-May-2024**	27-May-2024	×	**03-Jun-2024**	10-Jul-2024	✓
QC400								
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
QC300,	QC301,	**20-May-2024**	**31-May-2024**	27-May-2024	×	**03-Jun-2024**	10-Jul-2024	✓
QC400								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
QC300, QC400	QC301,	**20-May-2024**	**31-May-2024**	27-May-2024	×	**03-Jun-2024**	10-Jul-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
QC300, QC400	QC301,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**31-May-2024**	03-Jun-2024	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
QC300, QC400	QC301,	**20-May-2024**	**31-May-2024**	27-May-2024	×	**03-Jun-2024**	10-Jul-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
QC300, QC400	QC301,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**31-May-2024**	03-Jun-2024	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
QC300, QC400	QC301,	**20-May-2024**	**31-May-2024**	03-Jun-2024	✓	**31-May-2024**	03-Jun-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
QC300,	QC400	**20-May-2024**	**03-Jun-2024**	16-Nov-2024	✓	**04-Jun-2024**	16-Nov-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
QC300,	QC400	**20-May-2024**	**03-Jun-2024**	16-Nov-2024	✓	**04-Jun-2024**	16-Nov-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
QC300,	QC400	**20-May-2024**	**03-Jun-2024**	16-Nov-2024	✓	**04-Jun-2024**	16-Nov-2024	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
QC300,	QC400	**20-May-2024**	**03-Jun-2024**	16-Nov-2024	✓	**04-Jun-2024**	16-Nov-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Chromium Suite for Acid Sulphate Soils	EA033	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	3	23	**13.04**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Suite for Acid Sulphate Soils	EA033	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Suite for Acid Sulphate Soils	EA033	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Matrix Spikes (MS) - Continued							
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	10	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	3	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	5	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Polychlorinated Biphenyls (PCB)	EP066	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Chromium Suite for Acid Sulphate Soils	EA033	SOIL	In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions

Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2417817**

Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Megan Ferguson	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: megan.ferguson@senversa.com.au	E-mail	: sandy.phan@alsglobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: S20283 PEW Investigation	Page	: 1 of 4
Order number	: ----	Quote number	: EB2023SENVER0001 (EN/000)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Megan Ferguson		

Dates

Date Samples Received	: 30-May-2024 15:51	Issue Date	: 31-May-2024
Client Requested Due Date	: 12-Jun-2024	Scheduled Reporting Date	: **04-Jun-2024**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 8.2 - Ice present
Receipt Detail	:	No. of samples received / analysed	: 37 / 20

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Sample QC200 and QC201 to be forwarded to Eurofins as per COC's.
- 31/05/2024: This is an updated SRN which indicates add Chromium sulfur reducible suite to sample #27 for this work order.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **The final report will be completed by the scheduled reporting date listed in this SRN. A Preliminary report will be available on 04/06/2024 with the exception of Chromium sulfur reducible suite analysis**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Chromium sulfur reducible suite analysis will be conducted by ALS Brisbane.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **Chromium sulfur reducible suite could not be conducted for sample MW03_1.5-1.6 as there was no ASS bag received.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA033 Chromium Suite for Acid Sulphate Soils	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils -	SOIL - EP231 (solids) PFAS - Short Suite (12 analytes)	SOIL - S-19 TRH/BTEXN/PAH/Ph/OC/OP/PCB/8 metals
ES2417817-001	20-May-2024 10:20	MW01_0.0-0.1			✓	✓	✓	✓
ES2417817-002	20-May-2024 10:20	MW01_0.5-0.6	✓					
ES2417817-003	20-May-2024 10:20	MW01_1.0-1.1			✓		✓	✓
ES2417817-004	20-May-2024 11:17	MW01_1.1-1.2			✓		✓	✓
ES2417817-005	20-May-2024 11:17	MW01_1.4-1.5			✓		✓	✓
ES2417817-006	20-May-2024 11:17	MW01_1.7-1.8	✓					
ES2417817-007	20-May-2024 11:17	MW01_2.5-2.6	✓					
ES2417817-008	20-May-2024 11:17	MW01_3.8-3.9			✓		✓	✓
ES2417817-009	20-May-2024 11:18	MW01_4.5-4.6		✓				
ES2417817-010	20-May-2024 11:18	MW01_5.5-5.6	✓					
ES2417817-011	20-May-2024 11:18	MW01_6.9-7.0	✓					
ES2417817-012	20-May-2024 14:05	MW02_0.0-0.1			✓	✓	✓	✓
ES2417817-013	20-May-2024 14:05	MW02_0.5-0.6	✓					
ES2417817-014	20-May-2024 14:05	MW02_1.0-1.1	✓					
ES2417817-015	20-May-2024 14:05	MW02_1.4-1.5	✓					
ES2417817-016	20-May-2024 14:05	MW02_2.0-2.1			✓		✓	✓
ES2417817-017	20-May-2024 14:05	MW02_2.4-2.5		✓				
ES2417817-018	20-May-2024 14:06	MW02_3.0-3.1			✓		✓	✓
ES2417817-019	20-May-2024 14:06	MW02_4.0-4.1	✓					
ES2417817-020	20-May-2024 14:06	MW02_5.0-5.1			✓		✓	✓
ES2417817-021	20-May-2024 14:06	MW02_6.0-6.1	✓					
ES2417817-022	20-May-2024 14:06	MW02_6.9-7.0	✓					
ES2417817-023	20-May-2024 14:07	MW03_0.0-0.1			✓	✓	✓	✓
ES2417817-024	20-May-2024 14:08	MW03_0.5-0.6	✓					
ES2417817-025	20-May-2024 14:08	MW03_1.0-1.1	✓					
ES2417817-026	20-May-2024 14:08	MW03_1.5-1.6			✓		✓	✓
ES2417817-027	20-May-2024 14:08	MW03_1.9-2.0		✓				
ES2417817-028	20-May-2024 14:08	MW03_2.5-2.6	✓					
ES2417817-029	20-May-2024 14:08	MW03_3.5-3.6			✓		✓	✓
ES2417817-030	20-May-2024 14:09	MW03_4.5-4.6	✓					
ES2417817-031	20-May-2024 14:09	MW03_6.0-6.1	✓					
ES2417817-032	20-May-2024 14:09	MW03_6.9-7.0	✓					
ES2417817-033	20-May-2024 00:00	QC100			✓		✓	✓
ES2417817-034	20-May-2024 00:00	QC101			✓		✓	

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231 PFAS - Short Suite (12 analytes)
ES2417817-035	20-May-2024 00:00	QC300	✓
ES2417817-037	20-May-2024 00:00	QC400	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-19 TRH/BTEXN/PAH/Phenols/OC/OP/PCB/8 metals
ES2417817-035	20-May-2024 00:00	QC300	✓
ES2417817-036	20-May-2024 00:00	QC301	✓
ES2417817-037	20-May-2024 00:00	QC400	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EP066: Polychlorinated Biphenyls (PCB)							
QC300	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
QC301	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
QC400	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
EP068: Pesticides by GCMS							
QC300	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
QC301	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
QC400	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
EP071: TRH - Semivolatile Fraction							
QC300	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
QC301	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
QC400	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
EP075(SIM): PAH/Phenols (GC/MS - SIM)							
QC300	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
QC301	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×
QC400	Amber Glass Bottle - Unpreserve	27-May-2024	10-Jul-2024	30-May-2024	×	30-May-2024	×

Requested Deliverables

Megan Ferguson

- *AU Certificate of Analysis - NATA (COA)	Email	megan.ferguson@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	megan.ferguson@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	megan.ferguson@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	megan.ferguson@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	megan.ferguson@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	megan.ferguson@senversa.com.au

Naomi Lukeman

- *AU Certificate of Analysis - NATA (COA)	Email	naomi.lukeman@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	naomi.lukeman@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	naomi.lukeman@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	naomi.lukeman@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	naomi.lukeman@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	naomi.lukeman@senversa.com.au

SUPPLIER ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	supplieraccounts@senversa.com.au

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EA033-B: Potential Acidity

(SOIL) EA033-C: Acid Neutralising Capacity

(SOIL) EA033-D: Retained Acidity

(SOIL) EA033-A: Actual Acidity

(SOIL) EA033-E: Acid Base Accounting

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

senversa

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 360

Chain of Custody Documentation

Laboratory: ALS NSW
Address: 5/585 Maitland Road, Mayfield West
Contact: Sample receipt
Email: samples.newcastle@alsglobal.com

TAT

Subcon / Lab / Split WO:
Lab / Analysis: BR Sbave ASS.
Organised By / Date: Newcastle Asbestos
Relinquished By / Date: EurofinS QC200 QC201
Connote / Courier:
WO No: ES2417817
Attached By PO / Internal Sheet:

Job number:	S20283	Purchase Order:			
Project Name:	PFW Investigation	Quote Number:			
Sampled By:	Megan Ferguson	Turn Around time	Standard		
Project Manager:	Naomi Lukeman	Page:	1	of	1
Email Report To:	megan.ferguson@senversa.com.au, naomi.lukeman@senversa.com.au	Phone/Mobile	0455 381 853		

						15	3	18	19	3	0	0	0	0	0	0	0	0	0	0	0	0	
Sample Name	Location	Depth Top	Depth Base	Date Time	Matrix	HM, BTEX, PAH, phenols, OCP, OPP, PCB, 6 metals (incl digestion)	Asbestos absence/presence	PFAS - short suite (12 analytes)	Hold	Chromium sulfur reducible suite												HOLD	Comments
S20283	LocationDetails.LocationID	DepthTop	DepthBase	DateTimeSampled	Type																		
MW01_0.0-0.1	MW01	0	0.1	20/05/2024 10:20	Soil	X	X	X															Glass jar, PFAS, Asbestos
MW01_0.5-0.6	MW01	0.5	0.6	20/05/2024 10:20	Soil				X														Glass jar, PFAS, Asbestos
MW01_1.0-1.1	MW01	1	1.1	20/05/2024 10:20	Soil	X		X															Glass jar, PFAS, Asbestos
MW01_1.1-1.2	MW01	1.1	1.2	20/05/2024 11:17	Soil	X		X															Glass jar, PFAS
MW01_1.4-1.5	MW01	1.4	1.5	20/05/2024 11:17	Soil	X		X															Glass jar, PFAS, ASS
MW01_1.7-1.8	MW01	1.7	1.8	20/05/2024 11:17	Soil				X														Glass jar, PFAS
MW01_2.5-2.6	MW01	2.5	2.6	20/05/2024 11:17	Soil				X														Glass jar, PFAS
MW01_3.8-3.9	MW01	3.8	3.9	20/05/2024 11:17	Soil	X		X															Glass jar, PFAS, ASS
MW01_4.5-4.6	MW01	4.5	4.6	20/05/2024 11:18	Soil					X													Glass jar, PFAS, ASS
MW01_5.5-5.6	MW01	5.5	5.6	20/05/2024 11:18	Soil				X														Glass jar, PFAS, ASS
MW01_6.9-7.0	MW01	6.9	7	20/05/2024 11:18	Soil				X														Glass jar, PFAS
MW02_0.0-0.1	MW02	0	0.1	20/05/2024 14:05	Soil	X	X	X															Glass jar, PFAS, Asbestos
MW02_0.5-0.6	MW02	0.5	0.6	20/05/2024 14:05	Soil				X														Glass jar, PFAS, Asbestos
MW02_1.0-1.1	MW02	1	1.1	20/05/2024 14:05	Soil				X														Glass jar, PFAS, Asbestos
MW02_1.4-1.5	MW02	1.4	1.5	20/05/2024 14:05	Soil				X														Glass jar, PFAS, Asbestos
MW02_2.0-2.1	MW02	2	2.1	20/05/2024 14:05	Soil	X		X															Glass jar, PFAS
MW02_2.4-2.5	MW02	2.4	2.5	20/05/2024 14:05	Soil					X													Glass jar, PFAS, ASS
MW02_3.0-3.1	MW02	3	3.1	20/05/2024 14:06	Soil	X		X															Glass jar, PFAS
MW02_4.0-4.1	MW02	4	4.1	20/05/2024 14:06	Soil				X														Glass jar, PFAS, ASS
MW02_5.0-5.1	MW02	5	5.1	20/05/2024 14:06	Soil	X		X															Glass jar, PFAS, ASS
MW02_6.0-6.1	MW02	6	6.1	20/05/2024 14:06	Soil				X														Glass jar, PFAS, ASS
MW02_6.9-7.0	MW02	6.9	7	20/05/2024 14:06	Soil				X														Glass jar, PFAS
MW03_0.0-0.1	MW03	0	0.1	20/05/2024 14:07	Soil	X	X	X															Glass jar, PFAS, Asbestos
MW03_0.5-0.6	MW03	0.5	0.6	20/05/2024 14:08	Soil				X														Glass jar, PFAS, Asbestos
MW03_1.0-1.1	MW03	1	1.1	20/05/2024 14:08	Soil				X														Glass jar, PFAS, Asbestos
MW03_1.5-1.6	MW03	1.5	1.6	20/05/2024 14:08	Soil	X		X		X													Glass jar, PFAS
MW03_1.9-2.0	MW03	1.9	2	20/05/2024 14:08	Soil				X														Glass jar, PFAS, ASS
MW03_2.5-2.6	MW03	2.5	2.6	20/05/2024 14:08	Soil				X														Glass jar, PFAS
MW03_3.5-3.6	MW03	3.5	3.6	20/05/2024 14:08	Soil	X		X															Glass jar, PFAS, ASS
MW03_4.5-4.6	MW03	4.5	4.6	20/05/2024 14:09	Soil				X														Glass jar, PFAS, ASS
MW03_6.0-6.1	MW03	6	6.1	20/05/2024 14:09	Soil				X														Glass jar, PFAS, ASS
MW03_6.9-7.0	MW03	6.9	7	20/05/2024 14:09	Soil				X														Glass jar, PFAS
QC100				20/05/2024	Soil	X		X															
QC200				20/05/2024	Soil	X		X															Please forward to Eurofins
QC101				20/05/2024	Soil			X															
QC201				20/05/2024	Soil			X															Please forward to Eurofins
QC300				20/05/2024	Water	X		X															
QC301				20/05/2024	Water				X														
QC400				20/05/2024	Water			X															

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Signature: Megan Ferguson

Date 20/05/2024

Relinquished By:			Method of Shipment (if applic	Received by:	
Name/Signature:	Megan Ferguson	Date: 20/05/2024	Carrier / Reference #:	Name/Signature:	Date:
Of:	Senversa	Time: 4:45pm	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd/Zn Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium Thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; UA = Unpreserved Amber Glass; LA = Lead Acetate preserved white plastic bottle; BP = Boric acid preserved plastic bottle; AV = Ascorbic acid preserved clear amber glass vial

E-MAILED
LAB OF ORIGIN:
NEWCASTLE

Environmental Division
Sydney
Work Order Reference
ES2417817

Telephone : + 61-2-8784 8555

REC 29/5 6:30pm
8.2 ice
Rec. [illegible] 30/05/24 19 45

Phoung Tran

From: Megan Ferguson <Megan.Ferguson@senversa.com.au>
Sent: Friday, 31 May 2024 9:27 AM
To: Sandy Phan
Cc: Naomi Lukeman
Subject: [EXTERNAL] - FW: SRN for ALS Workorder : ES2417817 | Your Reference: S20283 PEW Investigation
Attachments: ES2417817_0_SRN_240530215454.pdf; ES2417817_COC.pdf

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi Sandy,

Regarding the attached SRN, could we please change the analysis for Chromium sulfur reducible suite to sample MW03_1.9-2.0 instead of MW03_1.5-1.6?

Kind regards,

senversa

Megan Ferguson
Project Environmental Scientist
M +61 455 981 953
www.senversa.com.au
144 Parry Street, Awabakal Country,
Newcastle West, NSW, 2302, Australia

Environmental Division
Sydney
Work Order Reference
ES2417817

Telephone : +61-2-8784 8555

From: angel-no-reply@alsglobal.com <angel-no-reply@alsglobal.com>
Sent: Thursday, May 30, 2024 9:55 PM
To: Megan Ferguson <Megan.Ferguson@senversa.com.au>
Subject: SRN for ALS Workorder : ES2417817 | Your Reference: S20283 PEW Investigation

Deliverables for ALS Workorder ES2417817

Project: S20283 PEW Investigation

Dear Megan Ferguson,

Please find enclosed the following deliverables for **ES2417817**:

- ES2417817_0_SRN_240530215454.pdf
- ES2417817_COC.pdf

Report Recipients

- Megan Ferguson
  - ES2417817_0_SRN_240530215454.pdf (Email)
  - ES2417817_COC.pdf (Email)
- Naomi Lukeman
  - ES2417817_0_SRN_240530215454.pdf (Email, Email)
  - ES2417817_COC.pdf (Email, Email)

CERTIFICATE OF ANALYSIS

Work Order	: **ES2417818**	Page	: 1 of 32
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MEGAN FERGUSON	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: S20283 PEW Investigation	Date Samples Received	: 30-May-2024 15:51
Order number	: ----	Date Analysis Commenced	: 31-May-2024
C-O-C number	: ----	Issue Date	: 11-Jun-2024 16:12
Sampler	: MEGAN FERGUSON		
Site	: ----		
Quote number	: EN/000		
No. of samples received	: 30		
No. of samples analysed	: 20		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

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

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

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

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

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- ASS: EA033 (CRS Suite): Analysis is performed as per the Acid Sulfate Soils Laboratory Methods Guidelines (2004) and the updated National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, Canberra, ACT (2018)
- ASS: EA033 (CRS Suite):Retained Acidity not required because pH KCl greater than or equal to 4.5
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEXN only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- ASS: EA033 (CRS Suite): Laboratory determinations of ANC needs to be corroborated by effectiveness of the measured ANC in relation to incubation ANC. Unless corroborated, the results of ANC testing should be discounted when determining Net Acidity for comparison with action criteria, or for the determination of the acidity hazard and required liming amounts.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m3'.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.

- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where LISTED. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP01_0.0-0.1	TP01_0.4-0.5	TP01_0.8-0.9	TP01_1.3-1.4	TP02_0.0-0.1
			Sampling date / time	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:33	29-May-2024 10:10
Compound	CAS Number	LOR	Unit	ES2417818-001	ES2417818-003	ES2417818-004	ES2417818-005	ES2417818-006
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	**6.3**	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	<2	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	----	----	<0.02	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	----	----	**0.014**	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	----	----	<10	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	**1.5**	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	<0.02	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	<10	----
Liming Rate	----	1	kg CaCO3/t	----	----	----	<1	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	----	<0.02	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	----	<10	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	----	<1	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**5.5**	**3.6**	**10.2**	----	**7.5**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	----	----	----	**No**
Asbestos (Trace)	1332-21-4	-	-	**No**	----	----	----	**No**
Asbestos Type	1332-21-4	-	--	**-**	----	----	----	**-**
Synthetic Mineral Fibre	----	-	--	**No**	----	----	----	**No**
Organic Fibre	----	-	--	**No**	----	----	----	**No**
Sample weight (dry)	----	0.01	g	**508**	----	----	----	**538**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	----	----	----	**B.SCHRADER**
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	----	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP01_0.0-0.1	TP01_0.4-0.5	TP01_0.8-0.9	TP01_1.3-1.4	TP02_0.0-0.1
			Sampling date / time	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:33	29-May-2024 10:10
Compound	CAS Number	LOR	Unit	ES2417818-001	ES2417818-003	ES2417818-004	ES2417818-005	ES2417818-006
				Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued								
Chromium	7440-47-3	2	mg/kg	**12**	**2**	<2	----	**11**
Copper	7440-50-8	5	mg/kg	**12**	<5	<5	----	**10**
Lead	7439-92-1	5	mg/kg	**6**	<5	<5	----	**6**
Nickel	7440-02-0	2	mg/kg	**6**	<2	<2	----	**4**
Zinc	7440-66-6	5	mg/kg	**42**	**8**	<5	----	**35**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	----	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.0-0.1	TP01_0.4-0.5	TP01_0.8-0.9	TP01_1.3-1.4	TP02_0.0-0.1
				Sampling date / time	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:33	29-May-2024 10:10
Compound	CAS Number	LOR	Unit		ES2417818-001	ES2417818-003	ES2417818-004	ES2417818-005	ES2417818-006
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.0-0.1	TP01_0.4-0.5	TP01_0.8-0.9	TP01_1.3-1.4	TP02_0.0-0.1
				Sampling date / time	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:33	29-May-2024 10:10
Compound	CAS Number	LOR	Unit		ES2417818-001	ES2417818-003	ES2417818-004	ES2417818-005	ES2417818-006
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	----	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	----	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.0-0.1	TP01_0.4-0.5	TP01_0.8-0.9	TP01_1.3-1.4	TP02_0.0-0.1
				Sampling date / time	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:33	29-May-2024 10:10
Compound	CAS Number	LOR	Unit		ES2417818-001	ES2417818-003	ES2417818-004	ES2417818-005	ES2417818-006
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	----	**0.6**
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.0-0.1	TP01_0.4-0.5	TP01_0.8-0.9	TP01_1.3-1.4	TP02_0.0-0.1
				Sampling date / time	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:33	29-May-2024 10:10
Compound	CAS Number	LOR	Unit		ES2417818-001	ES2417818-003	ES2417818-004	ES2417818-005	ES2417818-006
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0010**	----	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0002**	**0.0011**	**0.0059**	----	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0002**	**0.0011**	**0.0069**	----	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.0-0.1	TP01_0.4-0.5	TP01_0.8-0.9	TP01_1.3-1.4	TP02_0.0-0.1
				Sampling date / time	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:23	29-May-2024 14:33	29-May-2024 10:10
Compound	CAS Number	LOR	Unit		ES2417818-001	ES2417818-003	ES2417818-004	ES2417818-005	ES2417818-006
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		0.0002	0.0011	0.0069	----	<0.0002
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		95.0	99.7	91.3	----	102
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		94.9	96.6	93.4	----	121
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		71.8	62.9	67.7	----	80.3
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		77.0	70.7	78.4	----	76.5
2-Chlorophenol-D4	93951-73-6	0.5	%		86.8	79.6	86.9	----	85.6
2.4.6-Tribromophenol	118-79-6	0.5	%		71.1	70.5	68.6	----	64.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		91.1	83.5	91.2	----	90.2
Anthracene-d10	1719-06-8	0.5	%		110	101	109	----	109
4-Terphenyl-d14	1718-51-0	0.5	%		122	127	103	----	116
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		88.5	87.7	78.9	----	93.4
Toluene-D8	2037-26-5	0.2	%		92.2	94.1	92.6	----	94.1
4-Bromofluorobenzene	460-00-4	0.2	%		106	98.1	90.9	----	102
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		102	95.6	102	----	94.4
13C8-PFOA	----	0.0002	%		90.6	88.2	88.6	----	91.3

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP02_1.2-1.3	TP02_1.3-1.4	TP03_0.0-0.1	TP03_0.4-0.5	TP03_1.1-1.2
			Sampling date / time	29-May-2024 10:10	29-May-2024 10:11	29-May-2024 10:49	29-May-2024 10:49	29-May-2024 11:02
Compound	CAS Number	LOR	Unit	ES2417818-009	ES2417818-010	ES2417818-011	ES2417818-012	ES2417818-014
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	**6.2**	----	----	**8.4**
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	----	----	<2
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	<0.02	----	----	<0.02
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	**0.012**	----	----	**0.013**
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	<10	----	----	<10
EA033-C: Acid Neutralising Capacity								
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	----	----	----	----	**0.62**
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	----	----	----	----	**124**
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	----	----	----	----	**0.20**
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	**1.5**	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	----	----	<10
Liming Rate	----	1	kg CaCO3/t	----	<1	----	----	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	<0.02	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	<10	----	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	<1	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**11.5**	----	**7.6**	**8.9**	**12.5**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	**No**	----
Asbestos (Trace)	1332-21-4	-	-	----	----	----	**No**	----
Asbestos Type	1332-21-4	-	--	----	----	----	-	----
Synthetic Mineral Fibre	----	-	--	----	----	----	**No**	----
Organic Fibre	----	-	--	----	----	----	**No**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_1.2-1.3	TP02_1.3-1.4	TP03_0.0-0.1	TP03_0.4-0.5	TP03_1.1-1.2
				Sampling date / time	29-May-2024 10:10	29-May-2024 10:11	29-May-2024 10:49	29-May-2024 10:49	29-May-2024 11:02
Compound	CAS Number	LOR	Unit		ES2417818-009	ES2417818-010	ES2417818-011	ES2417818-012	ES2417818-014
					Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils - Continued									
Sample weight (dry)	----	0.01	g		----	----	----	600	----
APPROVED IDENTIFIER:	----	-	--		----	----	----	B.SCHRADER	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		4	----	13	12	<2
Copper	7440-50-8	5	mg/kg		<5	----	14	12	<5
Lead	7439-92-1	5	mg/kg		<5	----	8	7	<5
Nickel	7440-02-0	2	mg/kg		<2	----	7	6	<2
Zinc	7440-66-6	5	mg/kg		14	----	36	37	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP02_1.2-1.3	TP02_1.3-1.4	TP03_0.0-0.1	TP03_0.4-0.5	TP03_1.1-1.2
			Sampling date / time	29-May-2024 10:10	29-May-2024 10:11	29-May-2024 10:49	29-May-2024 10:49	29-May-2024 11:02
Compound	CAS Number	LOR	Unit	ES2417818-009	ES2417818-010	ES2417818-011	ES2417818-012	ES2417818-014
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_1.2-1.3	TP02_1.3-1.4	TP03_0.0-0.1	TP03_0.4-0.5	TP03_1.1-1.2
				Sampling date / time	29-May-2024 10:10	29-May-2024 10:11	29-May-2024 10:49	29-May-2024 10:49	29-May-2024 11:02
Compound	CAS Number	LOR	Unit		ES2417818-009	ES2417818-010	ES2417818-011	ES2417818-012	ES2417818-014
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_1.2-1.3	TP02_1.3-1.4	TP03_0.0-0.1	TP03_0.4-0.5	TP03_1.1-1.2
				Sampling date / time	29-May-2024 10:10	29-May-2024 10:11	29-May-2024 10:49	29-May-2024 10:49	29-May-2024 11:02
Compound	CAS Number	LOR	Unit		ES2417818-009	ES2417818-010	ES2417818-011	ES2417818-012	ES2417818-014
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	<100	<100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02_1.2-1.3	TP02_1.3-1.4	TP03_0.0-0.1	TP03_0.4-0.5	TP03_1.1-1.2
				Sampling date / time	29-May-2024 10:10	29-May-2024 10:11	29-May-2024 10:49	29-May-2024 10:49	29-May-2024 11:02
Compound	CAS Number	LOR	Unit		ES2417818-009	ES2417818-010	ES2417818-011	ES2417818-012	ES2417818-014
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	**0.0003**	<0.0002	**0.0006**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0013**	----	**0.0024**	**0.0003**	**0.0017**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP02_1.2-1.3	TP02_1.3-1.4	TP03_0.0-0.1	TP03_0.4-0.5	TP03_1.1-1.2
			Sampling date / time	29-May-2024 10:10	29-May-2024 10:11	29-May-2024 10:49	29-May-2024 10:49	29-May-2024 11:02
Compound	CAS Number	LOR	Unit	ES2417818-009	ES2417818-010	ES2417818-011	ES2417818-012	ES2417818-014
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	----	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	----	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0013**	----	**0.0027**	**0.0003**	**0.0023**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0013**	----	**0.0027**	**0.0003**	**0.0023**
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**81.5**	----	**104**	**83.6**	**95.2**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**75.0**	----	**124**	**97.4**	**89.5**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**70.8**	----	**108**	**82.0**	**70.5**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**71.4**	----	**75.8**	**76.9**	**74.9**
2-Chlorophenol-D4	93951-73-6	0.5	%	**79.5**	----	**85.2**	**86.0**	**85.5**
2.4.6-Tribromophenol	118-79-6	0.5	%	**63.9**	----	**62.0**	**60.3**	**67.5**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**83.1**	----	**89.6**	**89.0**	**86.7**
Anthracene-d10	1719-06-8	0.5	%	**101**	----	**109**	**109**	**106**
4-Terphenyl-d14	1718-51-0	0.5	%	**125**	----	**119**	**118**	**114**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**89.8**	----	**83.8**	**83.8**	**83.3**
Toluene-D8	2037-26-5	0.2	%	**80.5**	----	**85.0**	**84.5**	**85.6**
4-Bromofluorobenzene	460-00-4	0.2	%	**102**	----	**98.9**	**94.8**	**96.6**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**98.0**	----	**98.5**	**95.4**	**93.2**
13C8-PFOA	----	0.0002	%	**82.6**	----	**85.2**	**89.9**	**88.3**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP04_0.0-0.1	TP04_1.2-1.3	TP04_1.3-1.4	TP05_0.0-0.1	TP05_1.2-1.3
			Sampling date / time	29-May-2024 12:00	29-May-2024 12:01	29-May-2024 12:01	29-May-2024 13:22	29-May-2024 13:43
Compound	CAS Number	LOR	Unit	ES2417818-016	ES2417818-019	ES2417818-020	ES2417818-021	ES2417818-024
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	----	**6.8**	----	**6.5**
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	<2	----	<2
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	----	<0.02	----	<0.02
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	----	**0.012**	----	**0.009**
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	----	<10	----	<10
EA033-C: Acid Neutralising Capacity								
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	----	----	**0.59**	----	**0.36**
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	----	----	**119**	----	**72**
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	----	----	**0.19**	----	**0.12**
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	**1.5**	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	----	----	<0.02	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	<10	----	<10
Liming Rate	----	1	kg CaCO3/t	----	----	<1	----	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	<0.02	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	<10	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	<1	----	<1
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**6.8**	**7.4**	----	**7.8**	**17.8**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	----	----	**No**	----
Asbestos (Trace)	1332-21-4	-	-	**No**	----	----	**No**	----
Asbestos Type	1332-21-4	-	--	**-**	----	----	**-**	----
Synthetic Mineral Fibre	----	-	--	**No**	----	----	**No**	----
Organic Fibre	----	-	--	**No**	----	----	**No**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04_0.0-0.1	TP04_1.2-1.3	TP04_1.3-1.4	TP05_0.0-0.1	TP05_1.2-1.3
				Sampling date / time	29-May-2024 12:00	29-May-2024 12:01	29-May-2024 12:01	29-May-2024 13:22	29-May-2024 13:43
Compound	CAS Number	LOR	Unit		ES2417818-016	ES2417818-019	ES2417818-020	ES2417818-021	ES2417818-024
					Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils - Continued									
Sample weight (dry)	----	0.01	g		**586**	**----**	**----**	**648**	**----**
APPROVED IDENTIFIER:	----	-	--		**B.SCHRADER**	**----**	**----**	**B.SCHRADER**	**----**
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**5**	<5	**----**	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	**----**	<1	<1
Chromium	7440-47-3	2	mg/kg		**7**	**8**	**----**	**9**	<2
Copper	7440-50-8	5	mg/kg		**20**	**6**	**----**	**6**	<5
Lead	7439-92-1	5	mg/kg		**10**	<5	**----**	<5	**5**
Nickel	7440-02-0	2	mg/kg		**5**	**3**	**----**	**3**	<2
Zinc	7440-66-6	5	mg/kg		**48**	**23**	**----**	**24**	**12**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	**----**	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	**----**	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	**----**	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04_0.0-0.1	TP04_1.2-1.3	TP04_1.3-1.4	TP05_0.0-0.1	TP05_1.2-1.3
				Sampling date / time	29-May-2024 12:00	29-May-2024 12:01	29-May-2024 12:01	29-May-2024 13:22	29-May-2024 13:43
Compound	CAS Number	LOR	Unit		ES2417818-016	ES2417818-019	ES2417818-020	ES2417818-021	ES2417818-024
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP04_0.0-0.1	TP04_1.2-1.3	TP04_1.3-1.4	TP05_0.0-0.1	TP05_1.2-1.3
			Sampling date / time	29-May-2024 12:00	29-May-2024 12:01	29-May-2024 12:01	29-May-2024 13:22	29-May-2024 13:43
Compound	CAS Number	LOR	Unit	ES2417818-016	ES2417818-019	ES2417818-020	ES2417818-021	ES2417818-024
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	----	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	----	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP04_0.0-0.1	TP04_1.2-1.3	TP04_1.3-1.4	TP05_0.0-0.1	TP05_1.2-1.3
			Sampling date / time	29-May-2024 12:00	29-May-2024 12:01	29-May-2024 12:01	29-May-2024 13:22	29-May-2024 13:43
Compound	CAS Number	LOR	Unit	ES2417818-016	ES2417818-019	ES2417818-020	ES2417818-021	ES2417818-024
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg	**0.6**	**0.6**	----	**0.6**	**0.6**
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg	**1.2**	**1.2**	----	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	<100	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg	<50	<50	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	<10	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg	<10	<10	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	<100	<100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04_0.0-0.1	TP04_1.2-1.3	TP04_1.3-1.4	TP05_0.0-0.1	TP05_1.2-1.3
				Sampling date / time	29-May-2024 12:00	29-May-2024 12:01	29-May-2024 12:01	29-May-2024 13:22	29-May-2024 13:43
Compound	CAS Number	LOR	Unit		ES2417818-016	ES2417818-019	ES2417818-020	ES2417818-021	ES2417818-024
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0003**	<0.0002	----	<0.0002	**0.0008**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0018**	**0.0035**	----	**0.0082**	**0.0296**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	----	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04_0.0-0.1	TP04_1.2-1.3	TP04_1.3-1.4	TP05_0.0-0.1	TP05_1.2-1.3
				Sampling date / time	29-May-2024 12:00	29-May-2024 12:01	29-May-2024 12:01	29-May-2024 13:22	29-May-2024 13:43
Compound	CAS Number	LOR	Unit		ES2417818-016	ES2417818-019	ES2417818-020	ES2417818-021	ES2417818-024
					Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0021**	**0.0035**	----	**0.0082**	**0.0304**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0021**	**0.0035**	----	**0.0082**	**0.0304**
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**93.5**	**86.3**	----	**105**	**114**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**95.5**	**105**	----	**120**	**114**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**80.3**	**85.4**	----	**92.4**	**97.6**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**70.1**	**74.0**	----	**72.6**	**76.9**
2-Chlorophenol-D4	93951-73-6	0.5	%		**78.8**	**83.7**	----	**81.8**	**86.6**
2.4.6-Tribromophenol	118-79-6	0.5	%		**54.1**	**59.2**	----	**58.6**	**74.3**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**83.5**	**85.6**	----	**84.9**	**88.1**
Anthracene-d10	1719-06-8	0.5	%		**102**	**105**	----	**104**	**106**
4-Terphenyl-d14	1718-51-0	0.5	%		**125**	**129**	----	**109**	**106**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**90.0**	**85.9**	----	**80.9**	**86.0**
Toluene-D8	2037-26-5	0.2	%		**85.5**	**99.6**	----	**92.5**	**90.8**
4-Bromofluorobenzene	460-00-4	0.2	%		**94.4**	**98.5**	----	**93.6**	**108**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**101**	**97.6**	----	**100**	**102**
13C8-PFOA	----	0.0002	%		**93.3**	**95.4**	----	**90.8**	**84.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC103	QC104	QC402	QC500	TSC
				Sampling date / time	29-May-2024 00:00	29-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417818-026	ES2417818-027	ES2417818-028	ES2417818-029	ES2417818-030
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**7.7**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		**10**	----	----	----	----
Copper	7440-50-8	5	mg/kg		**8**	----	----	----	----
Lead	7439-92-1	5	mg/kg		**6**	----	----	----	----
Nickel	7440-02-0	2	mg/kg		**4**	----	----	----	----
Zinc	7440-66-6	5	mg/kg		**31**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC103	QC104	QC402	QC500	TSC
				Sampling date / time	29-May-2024 00:00	29-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417818-026	ES2417818-027	ES2417818-028	ES2417818-029	ES2417818-030
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC103	QC104	QC402	QC500	TSC
				Sampling date / time	29-May-2024 00:00	29-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417818-026	ES2417818-027	ES2417818-028	ES2417818-029	ES2417818-030
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC103	QC104	QC402	QC500	TSC
				Sampling date / time	29-May-2024 00:00	29-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00
Compound	CAS Number	LOR	Unit		ES2417818-026	ES2417818-027	ES2417818-028	ES2417818-029	ES2417818-030
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	----	----	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC103	QC104	QC402	QC500	TSC
			Sampling date / time	29-May-2024 00:00	29-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00
Compound	CAS Number	LOR	Unit	ES2417818-026	ES2417818-027	ES2417818-028	ES2417818-029	ES2417818-030
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	<0.2	<0.2	**0.2**
Toluene	108-88-3	0.5	mg/kg	<0.5	----	<0.5	**5.6**	**7.6**
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	<0.5	**6.6**	**8.2**
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	<0.5	**6.9**	**8.6**
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	<0.5	**2.9**	**3.6**
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	<0.2	**22.0**	**28.2**
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	<0.5	**9.8**	**12.2**
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	**0.0094**	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC103	QC104	QC402	QC500	TSC
			Sampling date / time	29-May-2024 00:00	29-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00	24-May-2024 00:00
Compound	CAS Number	LOR	Unit	ES2417818-026	ES2417818-027	ES2417818-028	ES2417818-029	ES2417818-030
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	**0.0094**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	**0.0094**	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**95.2**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**107**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**76.3**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**73.2**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**80.9**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**61.4**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**85.2**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	**104**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**129**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**78.7**	----	**94.6**	**86.4**	**85.7**
Toluene-D8	2037-26-5	0.2	%	**84.4**	----	**95.1**	**91.0**	**90.8**
4-Bromofluorobenzene	460-00-4	0.2	%	**94.2**	----	**113**	**88.1**	**88.1**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**100**	**97.0**	----	----	----
13C8-PFOA	----	0.0002	%	**90.3**	**93.6**	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	TP01_0.0-0.1 - 29-May-2024 14:23	A soil sample.
EA200: Description	TP02_0.0-0.1 - 29-May-2024 10:10	A soil sample.
EA200: Description	TP03_0.4-0.5 - 29-May-2024 10:49	A soil sample.
EA200: Description	TP04_0.0-0.1 - 29-May-2024 12:00	A soil sample.
EA200: Description	TP05_0.0-0.1 - 29-May-2024 13:22	A soil sample.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EA033-B: Potential Acidity

(SOIL) EA033-C: Acid Neutralising Capacity

(SOIL) EA033-D: Retained Acidity

(SOIL) EA033-A: Actual Acidity

(SOIL) EA033-E: Acid Base Accounting

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

QUALITY CONTROL REPORT

Work Order	: **ES2417818**	Page	: 1 of 16
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MEGAN FERGUSON	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: S20283 PEW Investigation	Date Samples Received	: 30-May-2024
Order number	: ----	Date Analysis Commenced	: 31-May-2024
C-O-C number	: ----	Issue Date	: 11-Jun-2024
Sampler	: MEGAN FERGUSON		
Site	: ----		
Quote number	: EN/000		
No. of samples received	: 30		
No. of samples analysed	: 20		

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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

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

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5831934)									
ES2417818-009	TP02_1.2-1.3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	4	3	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	14	14	0.0	No Limit
ES2417775-011	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	6	5	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	5	5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	23	18	25.4	No Limit
EA033-A: Actual Acidity (QC Lot: 5845476)									
EB2419414-020	Anonymous	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	7	7	0.0	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	5.8	5.7	0.0	0% - 20%
ES2417817-017	Anonymous	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.0	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	6	6	0.0	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	6.1	6.0	0.0	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA033-B: Potential Acidity (QC Lot: 5845476)									
EB2419414-020	Anonymous	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.008	0.008	0.0	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.0	No Limit
ES2417817-017	Anonymous	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.012	0.010	21.3	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5831936)									
ES2417775-013	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	13.7	13.9	1.3	0% - 50%
ES2417818-014	TP03_1.1-1.2	EA055: Moisture Content	----	0.1 (1.0)*	%	12.5	12.2	2.0	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5831933)									
ES2417818-011	TP03_0.0-0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2417775-011	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5827924)									
ES2417818-001	TP01_0.0-0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2417818-021	TP05_0.0-0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5827923)									
ES2417818-001	TP01_0.0-0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5827923) - continued									
ES2417818-021	TP05_0.0-0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5827923)									
ES2417818-001	TP01_0.0-0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5827923) - continued									
ES2417818-001	TP01_0.0-0.1	EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2417818-021	TP05_0.0-0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5827921)									
ES2417818-001	TP01_0.0-0.1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES2417818-021	TP05_0.0-0.1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)A: Phenolic Compounds (QC Lot: 5827921) - continued									
ES2417818-021	TP05_0.0-0.1	EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5827921)									
ES2417818-001	TP01_0.0-0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES2417818-021	TP05_0.0-0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5827921) - continued									
ES2417818-021	TP05_0.0-0.1	EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5827922)									
ES2417818-001	TP01_0.0-0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2417818-021	TP05_0.0-0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5828424)									
ES2417775-011	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2417849-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5829258)									
ES2417980-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2417845-006	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5827922)									
ES2417818-001	TP01_0.0-0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2417818-021	TP05_0.0-0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5828424)									
ES2417775-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2417849-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5829258)									
ES2417980-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5829258) - continued									
ES2417845-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 5828424)									
ES2417775-011	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2417849-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 5829258)									
ES2417980-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2417845-006	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5831783)									
ES2417818-001	TP01_0.0-0.1	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
ES2417818-021	TP05_0.0-0.1	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0082	0.0077	6.5	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5831783)									
ES2417818-001	TP01_0.0-0.1	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ES2417818-021	TP05_0.0-0.1	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5831783)									
ES2417818-001	TP01_0.0-0.1	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2417818-021	TP05_0.0-0.1	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5831934)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	97.1	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	110	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	111	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	101	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	101	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	95.4	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	86.7	66.0	133
EA033-A: Actual Acidity (QCLot: 5845476)								
EA033: pH KCl (23A)	----	----	pH Unit	----	4.7 pH Unit	102	80.0	120
EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	23.5 mole H+ / t	107	80.0	120
EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-B: Potential Acidity (QCLot: 5845476)								
EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.246 % S	81.8	77.0	121
EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	----	----
EA033-C: Acid Neutralising Capacity (QCLot: 5845476)								
EA033: Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	<0.01	10 % CaCO3	104	91.0	112
EA033: acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	<10	----	----	----	----
EA033: sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	<0.01	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5831933)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	109	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5827924)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	83.5	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 5827923)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.7	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	80.4	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	78.8	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	82.9	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.7	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	69.0	115

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5827923) - continued								
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	86.1	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	100	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.9	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	88.6	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.5	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	83.0	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	86.1	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	85.2	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5827923)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	104	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.6	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	94.2	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	76.2	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	83.7	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	89.8	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	84.5	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.9	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	93.0	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	74.3	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.8	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	87.9	41.0	123

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 5827921)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	73.7	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	94.7	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	90.2	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	92.8	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	76.0	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	71.2	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	78.5	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	78.5	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	89.2	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	77.9	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	83.1	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	33.6	10.0	80.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5827921)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	85.4	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	85.1	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	76.4	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	75.5	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	77.2	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	80.4	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	79.4	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	80.0	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	72.9	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	81.7	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	74.5	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	81.3	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	74.5	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	73.2	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	68.4	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	69.2	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5827922)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	95.8	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	103	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	93.5	71.0	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5828424)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	72.8	72.2	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5829258)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	91.4	72.2	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5827922)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	102	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	98.8	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	89.0	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5828424)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	72.9	72.4	133
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5829258)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	89.8	72.4	133
EP080: BTEXN (QCLot: 5828424)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	90.9	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	109	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	89.7	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	91.5	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	91.6	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	90.4	78.8	122
EP080: BTEXN (QCLot: 5829258)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	104	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	93.9	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	93.2	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	93.6	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	96.4	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	96.8	78.8	122
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5831783)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	72.0	128
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	122	67.0	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	107	68.0	136
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5831783)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	108	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.7	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	70.0	132

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5831783) - continued								
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	119	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.8	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5831783)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	119	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	86.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	80.0	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	94.2	69.2	143

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5831934)							
ES2417775-011	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	88.0	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	83.5	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	80.2	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	87.0	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	86.8	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	81.9	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	81.9	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5831933)							
ES2417775-011	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	96.0	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5827924)							
ES2417818-001	TP01_0.0-0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	99.0	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5827923)							
ES2417818-001	TP01_0.0-0.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	78.8	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	93.7	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	79.0	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	90.4	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	92.7	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	84.6	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5827923)							
ES2417818-001	TP01_0.0-0.1	EP068: Diazinon	333-41-5	0.5 mg/kg	114	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5827923) - continued							
ES2417818-001	TP01_0.0-0.1	EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	89.2	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	111	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	80.8	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	81.5	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5827921)							
ES2417818-001	TP01_0.0-0.1	EP075(SIM): Phenol	108-95-2	10 mg/kg	73.9	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	99.1	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	72.9	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	75.0	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	50.0	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5827921)							
ES2417818-001	TP01_0.0-0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	75.7	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	73.0	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5827922)							
ES2417818-001	TP01_0.0-0.1	EP071: C10 - C14 Fraction	----	480 mg/kg	102	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	112	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	124	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5828424)							
ES2417849-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	62.1	60.4	142
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5829258)							
ES2417980-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	79.7	60.4	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5827922)							
ES2417818-001	TP01_0.0-0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	98.0	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	115	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	125	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5828424)							
ES2417849-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	61.2	61.1	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5829258)							
ES2417980-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	77.3	61.1	142
EP080: BTEXN (QCLot: 5828424)							
ES2417849-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	81.1	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	73.6	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	83.0	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	80.5	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	76.8	70.7	121

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080: BTEXN (QCLot: 5828424) - continued							
ES2417849-001	Anonymous	EP080: Naphthalene	91-20-3	2.5 mg/kg	77.2	61.1	115
EP080: BTEXN (QCLot: 5829258)							
ES2417980-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	82.0	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	79.3	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	81.2	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	82.2	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	83.9	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	84.7	61.1	115
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5831783)							
ES2417818-001	TP01_0.0-0.1	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	109	72.0	128
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	124	67.0	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	98.0	68.0	136
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5831783)							
ES2417818-001	TP01_0.0-0.1	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	108	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	94.5	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	112	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	122	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	83.4	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5831783)							
ES2417818-001	TP01_0.0-0.1	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	123	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	82.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	79.1	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	101	69.2	143

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2417818**	Page	: 1 of 11
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MEGAN FERGUSON	Telephone	: +61-2-8784 8555
Project	: S20283 PEW Investigation	Date Samples Received	: 30-May-2024
Site	: ----	Issue Date	: 11-Jun-2024
Sampler	: MEGAN FERGUSON	No. of samples received	: 30
Order number	: ----	No. of samples analysed	: 20

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-A: Actual Acidity							
Snap Lock Bag - frozen (EA033)							
TP01_1.3-1.4, TP02_1.3-1.4, TP03_1.1-1.2, TP04_1.3-1.4, TP05_1.2-1.3	**29-May-2024**	**10-Jun-2024**	29-May-2025	✓	**10-Jun-2024**	08-Sep-2024	✓
EA033-B: Potential Acidity							
Snap Lock Bag - frozen (EA033)							
TP01_1.3-1.4, TP02_1.3-1.4, TP03_1.1-1.2, TP04_1.3-1.4, TP05_1.2-1.3	**29-May-2024**	**10-Jun-2024**	29-May-2025	✓	**10-Jun-2024**	08-Sep-2024	✓
EA033-C: Acid Neutralising Capacity							
Snap Lock Bag - frozen (EA033)							
TP01_1.3-1.4, TP02_1.3-1.4, TP03_1.1-1.2, TP04_1.3-1.4, TP05_1.2-1.3	**29-May-2024**	**10-Jun-2024**	29-May-2025	✓	**10-Jun-2024**	08-Sep-2024	✓
EA033-D: Retained Acidity							
Snap Lock Bag - frozen (EA033)							
TP01_1.3-1.4, TP02_1.3-1.4, TP03_1.1-1.2, TP04_1.3-1.4, TP05_1.2-1.3	**29-May-2024**	**10-Jun-2024**	29-May-2025	✓	**10-Jun-2024**	08-Sep-2024	✓
EA033-E: Acid Base Accounting							
Snap Lock Bag - frozen (EA033)							
TP01_1.3-1.4, TP02_1.3-1.4, TP03_1.1-1.2, TP04_1.3-1.4, TP05_1.2-1.3	**29-May-2024**	**10-Jun-2024**	29-May-2025	✓	**10-Jun-2024**	08-Sep-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
TP01_0.0-0.1, TP01_0.4-0.5, TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2, TP04_0.0-0.1, TP04_1.2-1.3, TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**----**	----	----	**03-Jun-2024**	12-Jun-2024	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
TP01_0.0-0.1, TP02_0.0-0.1, TP03_0.4-0.5, TP04_0.0-0.1, TP05_0.0-0.1	**29-May-2024**	**----**	----	----	**05-Jun-2024**	25-Nov-2024	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
TP01_0.0-0.1, TP01_0.4-0.5, TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2, TP04_0.0-0.1, TP04_1.2-1.3, TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**03-Jun-2024**	25-Nov-2024	✓	**05-Jun-2024**	25-Nov-2024	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
TP01_0.0-0.1, TP01_0.4-0.5, TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2, TP04_0.0-0.1, TP04_1.2-1.3, TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**03-Jun-2024**	26-Jun-2024	✓	**05-Jun-2024**	26-Jun-2024	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
TP01_0.0-0.1, TP01_0.4-0.5, TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**03-Jun-2024**	10-Jul-2024	✓
Soil Glass Jar - Unpreserved (EP066)							
TP03_1.1-1.2, TP04_0.0-0.1, TP04_1.2-1.3, TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**04-Jun-2024**	10-Jul-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
TP01_0.0-0.1, TP01_0.4-0.5	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**03-Jun-2024**	10-Jul-2024	✓
Soil Glass Jar - Unpreserved (EP068)							
TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2, TP04_0.0-0.1, TP04_1.2-1.3, TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**05-Jun-2024**	10-Jul-2024	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
TP01_0.0-0.1, TP01_0.4-0.5	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**03-Jun-2024**	10-Jul-2024	✓
Soil Glass Jar - Unpreserved (EP068)							
TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2, TP04_0.0-0.1, TP04_1.2-1.3, TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**05-Jun-2024**	10-Jul-2024	✓
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP01_0.0-0.1, TP01_0.4-0.5, TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2, TP04_0.0-0.1, TP04_1.2-1.3	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**03-Jun-2024**	10-Jul-2024	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**04-Jun-2024**	10-Jul-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP01_0.0-0.1, TP01_0.4-0.5, TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2, TP04_0.0-0.1, TP04_1.2-1.3	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**03-Jun-2024**	10-Jul-2024	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**04-Jun-2024**	10-Jul-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QC402	**24-May-2024**	**31-May-2024**	07-Jun-2024	✓	**01-Jun-2024**	07-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP080) TP04_0.0-0.1, TP04_1.2-1.3, TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**01-Jun-2024**	12-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP071) TP01_0.0-0.1, TP01_0.4-0.5, TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2, TP04_0.0-0.1, TP04_1.2-1.3, TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**04-Jun-2024**	10-Jul-2024	✓
Soil Glass Jar - Unpreserved (EP080) TP01_0.0-0.1, TP01_0.4-0.5, TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**31-May-2024**	12-Jun-2024	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) QC402	**24-May-2024**	**31-May-2024**	07-Jun-2024	✓	**01-Jun-2024**	07-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP080) TP04_0.0-0.1, TP04_1.2-1.3, TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**01-Jun-2024**	12-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP071) TP01_0.0-0.1, TP01_0.4-0.5, TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2, TP04_0.0-0.1, TP04_1.2-1.3, TP05_0.0-0.1, TP05_1.2-1.3, QC103	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**04-Jun-2024**	10-Jul-2024	✓
Soil Glass Jar - Unpreserved (EP080) TP01_0.0-0.1, TP01_0.4-0.5, TP01_0.8-0.9, TP02_0.0-0.1, TP02_1.2-1.3, TP03_0.0-0.1, TP03_0.4-0.5, TP03_1.1-1.2	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**31-May-2024**	12-Jun-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
QC402, TSC	QC500,	**24-May-2024**	**31-May-2024**	07-Jun-2024	✓	**01-Jun-2024**	07-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP080)								
TP04_0.0-0.1, TP05_0.0-0.1, QC103	TP04_1.2-1.3, TP05_1.2-1.3,	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**01-Jun-2024**	12-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP080)								
TP01_0.0-0.1, TP01_0.8-0.9, TP02_1.2-1.3, TP03_0.4-0.5,	TP01_0.4-0.5, TP02_0.0-0.1, TP03_0.0-0.1, TP03_1.1-1.2	**29-May-2024**	**31-May-2024**	12-Jun-2024	✓	**31-May-2024**	12-Jun-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)								
TP01_0.0-0.1, TP01_0.8-0.9, TP02_1.2-1.3, TP03_0.4-0.5, TP04_0.0-0.1, TP05_0.0-0.1, QC103,	TP01_0.4-0.5, TP02_0.0-0.1, TP03_0.0-0.1, TP03_1.1-1.2, TP04_1.2-1.3, TP05_1.2-1.3, QC104	**29-May-2024**	**04-Jun-2024**	25-Nov-2024	✓	**05-Jun-2024**	14-Jul-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X)								
TP01_0.0-0.1, TP01_0.8-0.9, TP02_1.2-1.3, TP03_0.4-0.5, TP04_0.0-0.1, TP05_0.0-0.1, QC103,	TP01_0.4-0.5, TP02_0.0-0.1, TP03_0.0-0.1, TP03_1.1-1.2, TP04_1.2-1.3, TP05_1.2-1.3, QC104	**29-May-2024**	**04-Jun-2024**	25-Nov-2024	✓	**05-Jun-2024**	14-Jul-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE Soil Jar (EP231X)								
TP01_0.0-0.1, TP01_0.8-0.9, TP02_1.2-1.3, TP03_0.4-0.5, TP04_0.0-0.1, TP05_0.0-0.1, QC103,	TP01_0.4-0.5, TP02_0.0-0.1, TP03_0.0-0.1, TP03_1.1-1.2, TP04_1.2-1.3, TP05_1.2-1.3, QC104	**29-May-2024**	**04-Jun-2024**	25-Nov-2024	✓	**05-Jun-2024**	14-Jul-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X)								
TP01_0.0-0.1,	TP01_0.4-0.5,	**29-May-2024**	**04-Jun-2024**	25-Nov-2024	✓	**05-Jun-2024**	14-Jul-2024	✓
TP01_0.8-0.9,	TP02_0.0-0.1,							
TP02_1.2-1.3,	TP03_0.0-0.1,							
TP03_0.4-0.5,	TP03_1.1-1.2,							
TP04_0.0-0.1,	TP04_1.2-1.3,							
TP05_0.0-0.1,	TP05_1.2-1.3,							
QC103,	QC104							

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Chromium Suite for Acid Sulphate Soils	EA033	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	34	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Suite for Acid Sulphate Soils	EA033	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Suite for Acid Sulphate Soils	EA033	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Chromium Suite for Acid Sulphate Soils	EA033	SOIL	In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2417818**

Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Megan Ferguson	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: megan.ferguson@senversa.com.au	E-mail	: sandy.phan@alsglobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: S20283 PEW Investigation	Page	: 1 of 3
Order number	: ----	Quote number	: EB2023SENVER0001 (EN/000)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Megan Ferguson		

Dates

Date Samples Received	: 30-May-2024 15:51	Issue Date	: 30-May-2024
Client Requested Due Date	: 12-Jun-2024	Scheduled Reporting Date	: **12-Jun-2024**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 8.2 - Ice present
Receipt Detail	:	No. of samples received / analysed	: 30 / 20

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **The final report will be completed by the scheduled reporting date listed in this SRN. A Preliminary report will be available on 06/06/2024 with the exception of Chromium sulfur reducible suite analysis**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Sample QC203 and QC204 to be forwarded to Eurofins as per COC**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **Chromium sulfur reducible suite analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA033 Chromium Suite for Acid Sulphate Soils	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils -	SOIL - EP231 (solids) PFAS - Short Suite (12 analytes)	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-19 TRH/BTEXN/PAH/Ph/OC/OP/PCB/8 metals
ES2417818-001	29-May-2024 14:23	TP01_0.0-0.1			✓	✓	✓		✓
ES2417818-002	29-May-2024 14:23	TP01_0.2-0.3	✓						
ES2417818-003	29-May-2024 14:23	TP01_0.4-0.5			✓		✓		✓
ES2417818-004	29-May-2024 14:23	TP01_0.8-0.9			✓		✓		✓
ES2417818-005	29-May-2024 14:33	TP01_1.3-1.4		✓					
ES2417818-006	29-May-2024 10:10	TP02_0.0-0.1			✓	✓	✓		✓
ES2417818-007	29-May-2024 10:10	TP02_0.4-0.5	✓						
ES2417818-008	29-May-2024 10:10	TP02_1.0-1.1	✓						
ES2417818-009	29-May-2024 10:10	TP02_1.2-1.3			✓		✓		✓
ES2417818-010	29-May-2024 10:11	TP02_1.3-1.4		✓					
ES2417818-011	29-May-2024 10:49	TP03_0.0-0.1			✓		✓		✓
ES2417818-012	29-May-2024 10:49	TP03_0.4-0.5			✓	✓	✓		✓
ES2417818-013	29-May-2024 10:49	TP03_0.7-0.8	✓						
ES2417818-014	29-May-2024 11:02	TP03_1.1-1.2		✓	✓		✓		✓
ES2417818-015	29-May-2024 11:02	TP03_1.3-1.4	✓						
ES2417818-016	29-May-2024 12:00	TP04_0.0-0.1			✓	✓	✓		✓
ES2417818-017	29-May-2024 12:01	TP04_0.4-0.5	✓						
ES2417818-018	29-May-2024 12:01	TP04_1.0-1.1	✓						
ES2417818-019	29-May-2024 12:01	TP04_1.2-1.3			✓		✓		✓
ES2417818-020	29-May-2024 12:01	TP04_1.3-1.4		✓					
ES2417818-021	29-May-2024 13:22	TP05_0.0-0.1			✓	✓	✓		✓
ES2417818-022	29-May-2024 13:23	TP05_0.3-0.4	✓						
ES2417818-023	29-May-2024 13:29	TP05_0.8-0.9	✓						
ES2417818-024	29-May-2024 13:43	TP05_1.2-1.3		✓	✓		✓		✓
ES2417818-025	29-May-2024 13:43	TP05_1.3-1.4	✓						
ES2417818-026	29-May-2024 00:00	QC103			✓		✓		✓
ES2417818-027	29-May-2024 00:00	QC104			✓		✓		
ES2417818-028	24-May-2024 00:00	QC402						✓	

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EP080 BTEXN
ES2417818-029	24-May-2024 00:00	QC500	✓
ES2417818-030	24-May-2024 00:00	TSC	✓

Proactive Holding Time Report

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

Requested Deliverables

Megan Ferguson

- *AU Certificate of Analysis - NATA (COA)	Email	megan.ferguson@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	megan.ferguson@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	megan.ferguson@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	megan.ferguson@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	megan.ferguson@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	megan.ferguson@senversa.com.au

Naomi Lukeman

- *AU Certificate of Analysis - NATA (COA)	Email	naomi.lukeman@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	naomi.lukeman@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	naomi.lukeman@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	naomi.lukeman@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	naomi.lukeman@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	naomi.lukeman@senversa.com.au

SUPPLIER ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	supplieraccounts@senversa.com.au

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EA033-B: Potential Acidity
(SOIL) EA033-C: Acid Neutralising Capacity
(SOIL) EA033-D: Retained Acidity
(SOIL) EA033-A: Actual Acidity
(SOIL) EA033-E: Acid Base Accounting

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

TAT

Sub-Contract / Split WO:
Lab / Analysis: BRTSbane ASS
Organised By / Date: Eurofns. @C203 @C204
Relinquished By / Date:
Connote / Courier:
WO No: ES2417818
Attached By RO / Internal Sheet:

senversa
Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Chain of Custody Documentation

Laboratory: ALS NSW
Address: 5/585 Maitland Road, Mayfield West
Contact: Sample Receipt
Email: [redacted]

Job number:	S20283	Purchase Order:			
Project Name:	PFW Investigation	Quote Number:			
Sampled By:	Megan Ferguson	Turn Around Time:	Standard		
Project Manager:	Naomi Lukeman	Page:	1	of	1
Email Report To:	megan.ferguson@senversa.com.au, naomi.lukeman@senversa.com.au	Phone/Mobile:	0455 981 953		

Sample Name		Location	Depth Top	Depth Base	Date Time	Matrix	14 (TRH, BTEX, PAH, phenols, OCP, OPP, PCB, 8 metals (incl digestion))	5 Asbestos absence/presence	16 PFAS - Short Suite (12 analytes)	5 Chromium sulfur reducible suite	3 TRH, BTEXN	10 HOLD	0	0	0	0	0	0	0	0	0	0	0	Comments
TP01_0.0-0.1	1	TP01	0	0.1	29/05/2024 14:23	Soil	X	X	X															
TP01_0.2-0.3	2	TP01	0.2	0.3	29/05/2024 14:23	Soil						X												
TP01_0.4-0.5	3	TP01	0.4	0.5	29/05/2024 14:23	Soil	X		X															
TP01_0.8-0.9	4	TP01	0.8	0.9	29/05/2024 14:23	Soil	X		X															
TP01_1.3-1.4	5	TP01	1.3	1.4	29/05/2024 14:38	Soil				X														
TP02_0.0-0.1	6	TP02	0	0.1	29/05/2024 10:10	Soil	X	X	X															
TP02_0.4-0.5	7	TP02	0.4	0.5	29/05/2024 10:10	Soil						X												
TP02_1.0-1.1	8	TP02	1	1.1	29/05/2024 10:10	Soil						X												
TP02_1.2-1.3	9	TP02	1.2	1.3	29/05/2024 10:10	Soil	X		X															
TP02_1.3-1.4	10	TP02	1.3	1.4	29/05/2024 10:11	Soil				X														
TP03_0.0-0.1	11	TP03	0	0.1	29/05/2024 10:49	Soil	X		X															
TP03_0.4-0.5	12	TP03	0.4	0.5	29/05/2024 10:49	Soil	X	X	X															
TP03_0.7-0.8	13	TP03	0.7	0.8	29/05/2024 10:49	Soil						X												
TP03_1.1-1.2	14	TP03	1.1	1.2	29/05/2024 11:02	Soil	X		X	X														
TP03_1.3-1.4	15	TP03	1.3	1.4	29/05/2024 11:02	Soil						X												
TP04_0.0-0.1	16	TP04	0	0.1	29/05/2024 12:00	Soil	X	X	X															
TP04_0.4-0.5	17	TP04	0.4	0.5	29/05/2024 12:01	Soil						X												
TP04_1.0-1.1	18	TP04	1	1.1	29/05/2024 12:01	Soil						X												
TP04_1.2-1.3	19	TP04	1.2	1.3	29/05/2024 12:01	Soil	X		X															
TP04_1.3-1.4	20	TP04	1.3	1.4	29/05/2024 12:01	Soil				X														
TP05_0.0-0.1	21	TP05	0	0.1	29/05/2024 13:22	Soil	X	X	X															
TP05_0.3-0.4	22	TP05	0.3	0.4	29/05/2024 13:23	Soil						X												
TP05_0.8-0.9	23	TP05	0.8	0.9	29/05/2024 13:29	Soil						X												
TP05_1.2-1.3	24	TP05	1.2	1.3	29/05/2024 13:43	Soil	X		X	X														
TP05_1.3-1.4	25	TP05	1.3	1.4	29/05/2024 13:43	Soil						X												
QC103	26				29/05/2024	Soil	X		X															
QC203	—				29/05/2024	Soil	X		X															Please forward to Eurofins
QC104	27				29/05/2024	Soil			X															
QC204	—				29/05/2024	Soil			X															Please forward to Eurofins
QC402	28				29/05/2024	Soil					X													
QC500	29				29/05/2024	Soil					X													Trip spike
TSC	30										X													

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples: Signature: M Ferguson Date: 29/05/2024

Relinquished By:			Method of Shipment (if applic	Received by:	
Name/Signature:	Megan Ferguson	Date: 29/05/2024	Carrier / Reference #:	Name/Signature:	Date:
Of:	Senversa	Time: 4pm	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lagoi's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar.

LAB OF ORIGIN:
NEWCASTLE

E-MAILED

Environmental Division
Sydney
Work Order Reference
ES2417818

Telephone : +61-2-8784 8555

REC 29/5 @ 3:40pm
8.2 ice
Rel JN 30.5.24 1700
Rec. Rcpt 30/05/24 1945

CERTIFICATE OF ANALYSIS

Work Order	: **ES2421089**	Page	: 1 of 4
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MEGAN FERGUSON	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: S20283 PEW Investigation	Date Samples Received	: 30-May-2024 15:51
Order number	: ----	Date Analysis Commenced	: 27-Jun-2024
C-O-C number	: ----	Issue Date	: 27-Jun-2024 16:46
Sampler	: MEGAN FERGUSON		
Site	: ----		
Quote number	: EN/000		
No. of samples received	: 5		
No. of samples analysed	: 5		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW

General Comments

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

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

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

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

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP01_0.0-0.1	TP02_0.0-0.1	TP03_0.4-0.5	TP04_0.0-0.1	TP05_0.0-0.1
			Sampling date / time	29-May-2024 14:23	29-May-2024 10:10	29-May-2024 10:49	29-May-2024 12:00	29-May-2024 13:22
Compound	CAS Number	LOR	Unit	ES2421089-001	ES2421089-002	ES2421089-003	ES2421089-004	ES2421089-005
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	**-**	**-**
Asbestos (Trace)	1332-21-4	-	-	**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g	**508**	**538**	**600**	**586**	**648**
Synthetic Mineral Fibre	----	-	--	**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	-	--	**No**	**No**	**No**	**No**	**No**
APPROVED IDENTIFIER:	----	-	--	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**	**B.SCHRADER**
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø Asbestos Containing Material	1332-21-4	0.1	g	<0.1	<0.1	<0.1	<0.1	<0.1
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
ø Weight Used for % Calculation	----	0.0001	kg	**0.508**	**0.538**	**0.600**	**0.586**	**0.648**
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	TP01_0.0-0.1 - 29-May-2024 14:23	A soil sample.
EA200: Description	TP02_0.0-0.1 - 29-May-2024 10:10	A soil sample.
EA200: Description	TP03_0.4-0.5 - 29-May-2024 10:49	A soil sample.
EA200: Description	TP04_0.0-0.1 - 29-May-2024 12:00	A soil sample.
EA200: Description	TP05_0.0-0.1 - 29-May-2024 13:22	A soil sample.

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200N: Asbestos Quantification (non-NATA)

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

QUALITY CONTROL REPORT

Work Order	: **ES2421089**	Page	: 1 of 3
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MEGAN FERGUSON	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: S20283 PEW Investigation	Date Samples Received	: 30-May-2024
Order number	: ----	Date Analysis Commenced	: 27-Jun-2024
C-O-C number	: ----	Issue Date	: 27-Jun-2024
Sampler	: MEGAN FERGUSON		
Site	: ----		
Quote number	: EN/000		
No. of samples received	: 5		
No. of samples analysed	: 5		

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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

Matrix Spike (MS) Report

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

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2421089**	Page	: 1 of 4
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MEGAN FERGUSON	Telephone	: +61-2-8784 8555
Project	: S20283 PEW Investigation	Date Samples Received	: 30-May-2024
Site	: ----	Issue Date	: 27-Jun-2024
Sampler	: MEGAN FERGUSON	No. of samples received	: 5
Order number	: ----	No. of samples analysed	: 5

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
TP01_0.0-0.1, TP02_0.0-0.1, TP03_0.4-0.5, TP04_0.0-0.1, TP05_0.0-0.1	**29-May-2024**	**----**	----	----	**27-Jun-2024**	25-Nov-2024	✓
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
TP01_0.0-0.1, TP02_0.0-0.1, TP03_0.4-0.5, TP04_0.0-0.1, TP05_0.0-0.1	**29-May-2024**	**----**	----	----	**27-Jun-2024**	25-Nov-2024	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM with Confirmation of Identification by AS 4964 - Gravimetric determination of Asbestos Containing Material, Fibrous Asbestos, Asbestos Fines and sample weight and calculation of percentage concentrations per NEPM protocols. Asbestos (Fines and Fibrous FA+AF) is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2421089**

Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MEGAN FERGUSON	Contact	: Sandy Phan
Address	: 144 Parry Street Newcastle West	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: megan.ferguson@senversa.com.au	E-mail	: sandy.phan@alsglobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: S20283 PEW Investigation	Page	: 1 of 2
Order number	: ----	Quote number	: EB2023SENVER0001 (EN/000)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: MEGAN FERGUSON		

Dates

Date Samples Received	: 30-May-2024 15:51	Issue Date	: 27-Jun-2024
Client Requested Due Date	: 27-Jun-2024	Scheduled Reporting Date	: **27-Jun-2024**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: 8.2'C - Ice present
Receipt Detail	: Rebatch of ES2417818	No. of samples received / analysed	: 5 / 5

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- This is a rebatch of ES2417818.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by
ES2421089-001	29-May-2024 14:23	TP01_0.0-0.1	✓
ES2421089-002	29-May-2024 10:10	TP02_0.0-0.1	✓
ES2421089-003	29-May-2024 10:49	TP03_0.4-0.5	✓
ES2421089-004	29-May-2024 12:00	TP04_0.0-0.1	✓
ES2421089-005	29-May-2024 13:22	TP05_0.0-0.1	✓

Proactive Holding Time Report

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

Requested Deliverables

MEGAN FERGUSON

- *AU Certificate of Analysis - NATA (COA)	Email	megan.ferguson@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	megan.ferguson@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	megan.ferguson@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	megan.ferguson@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	megan.ferguson@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	megan.ferguson@senversa.com.au

Naomi Lukeman

- *AU Certificate of Analysis - NATA (COA)	Email	naomi.lukeman@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	naomi.lukeman@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	naomi.lukeman@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	naomi.lukeman@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	naomi.lukeman@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	naomi.lukeman@senversa.com.au

SUPPLIER ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	supplieraccounts@senversa.com.au

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).
(SOIL) EA200N: Asbestos Quantification (non-NATA)
(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

27_6

Fadi Soro

FADI
27/6/24

From: Sandy Phan
Sent: Wednesday, 26 June 2024 5:34 PM
To: rebatches.sydney; Newcastle Fast TAT
Subject: REBATCH of ES2417818 SENVER 24hr TAT asbestos

Importance: High

Categories: Rebatch

Hi Rebatches,

Can you please rebatch the below urgently for asbestos 500 mL NEPM analysis (FA + AF)

1	001	SOIL	Logged	29/05/2024 2:23:00 PM	☐	TP01_0.0-0.1
2	006	SOIL	Logged	29/05/2024 10:10:00 AM	☐	TP02_0.0-0.1
3	012	SOIL	Logged	29/05/2024 10:49:00 AM	☐	TP03_0.4-0.5
4	016	SOIL	Logged	29/05/2024 12:00:00 PM	☐	TP04_0.0-0.1
5	021	SOIL	Logged	29/05/2024 1:22:00 PM	☐	TP05_0.0-0.1

trays: asbestos bags kept at EN as per NC bottles map.

gin ☐ ES2417818

Hi @Newcastle Fast TAT,

Are you able to report this Thursday (27/6) or Friday if not?

I understand Thursday is less than 24hr TAT

TAT

Environmental Division
Sydney
Work Order Reference
ES2421089

Telephone : +61-2-8784 8555

Kind Regards,

Sandy Phan
Client Services Officer, Environmental
Sydney, NSW

O: +61 2 8784 8555 D: +61 2 8784 8511
277-289 Woodpark Road, Smithfield NSW 2164

From: Megan Ferguson <Megan.Ferguson@senversa.com.au>
Sent: Wednesday, June 26, 2024 4:12 PM
To: Sandy Phan <sandy.phan@ALSGlobal.com>; ALSEnviro Newcastle <ALSEnviro.Newcastle@ALSGlobal.com>
Cc: Naomi Lukeman <naomi.lukeman@senversa.com.au>
Subject: [EXTERNAL] - FW: RESULTS & EDD for ALS Workorder : ES2417818 | Your Reference: S20283 PEW Investigation

Hi there,

Regarding the attached workorder, could we please add asbestos 500 mL NEPM analysis (FA + AF) to the following five samples on a **24 hour TAT**?

- TP01_0.0_0.1
- TP02_0.0-0.1
- TP03_0.4-0.5
- TP04_0.0-0.1
- TP05_0.0-0.1

Kind regards,

Megan Ferguson
Project Environmental Scientist
M: +61 455 981 953
www.senversa.com.au
144 Parry Street, Awabakal Country,
Newcastle West, NSW, 2302, Australia

From: angel-no-reply@alsglobal.com <angel-no-reply@alsglobal.com>
Sent: Tuesday, June 11, 2024 4:17 PM
To: Megan Ferguson <Megan.Ferguson@senversa.com.au>
Subject: RESULTS & EDD for ALS Workorder : ES2417818 | Your Reference: S20283 PEW Investigation

Deliverables for ALS Workorder ES2417818

Project: S20283 PEW Investigation

Dear MEGAN FERGUSON,

Please find enclosed the following deliverables for **ES2417818**:

- ES2417818_0_COA.pdf
- ES2417818_0_QC.pdf
- ES2417818_0_QCI.pdf
- S20283 PEW Investigation.ESDAT_ES2417818_0.Chemistry2e.CSV
- S20283 PEW Investigation.ESDAT_ES2417818_0.Header.XML
- S20283 PEW Investigation.ESDAT_ES2417818_0.Sample2e.CSV
- ES2417818_COC.pdf

Report Recipients

- MEGAN FERGUSON
  - ES2417818_0_COA.pdf (Email)
  - ES2417818_0_QC.pdf (Email)

- ES2417818_0_QCI.pdf (Email)
- S20283 PEW Investigation.ESDAT_ES2417818_0.Chemistry2e.CSV
- S20283 PEW Investigation.ESDAT_ES2417818_0.Header.XML
- S20283 PEW Investigation.ESDAT_ES2417818_0.Sample2e.CSV
- ES2417818_COC.pdf (Email)

- SUPPLIER ACCOUNTS
  - ES2417818_COC.pdf (Email, Email, Email, Email, Email, Email, Email)
- Naomi Lukeman
  - ES2417818_0_COA.pdf (Email, Email, Email, Email, Email, Email, Email)
  - ES2417818_0_QC.pdf (Email, Email, Email, Email, Email, Email, Email)
  - ES2417818_0_QCI.pdf (Email, Email, Email, Email, Email, Email, Email)
  - S20283 PEW Investigation.ESDAT_ES2417818_0.Chemistry2e.CSV
  - S20283 PEW Investigation.ESDAT_ES2417818_0.Header.XML
  - S20283 PEW Investigation.ESDAT_ES2417818_0.Sample2e.CSV
  - ES2417818_COC.pdf (Email, Email, Email, Email, Email, Email, Email)

Senversa Pty Ltd

ABN 89 132 231 380
www.senversa.com.au
enquiries@senversa.com.au
LinkedIn: Senversa
Facebook: Senversa

To the extent permissible by law, Senversa shall not be liable for any errors, omissions, defects or misrepresentations, or for any loss or damage suffered by any persons (including for reasons of negligence or otherwise).

©2024 Senversa Pty Ltd