



Preliminary Site Investigation

56-76 Mandalong Road, Morisset, NSW

Prepared for: TSA Management Pty Ltd c/- Winarch Capital
EP1934.001 24 May 2021



QMS Certification Services



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56-76 Mandalong Road, Morisset, NSW

TSA Management Pty Ltd c/- Winarch Capital
Level 4, 25 Watt Street
Newcastle NSW 2300

24 May 2021

Our Ref: EP1934.001

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Executive Summary

Introduction

EP Risk Management Pty Ltd (EP Risk) was engaged by TSA Management Pty Ltd c/- Winarch Capital to undertake a Preliminary Site Investigation (PSI) of a property located at 56-76 Mandalong Road, Morisset, New South Wales (NSW) (the Site). It is understood that the Site is proposed to be redeveloped into a Bulky Goods Centre (Proposed Development), and that the Assessment is required to assist in the Development Application (DA) process in accordance with State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55).

Objective

The objective of the PSI was to assess whether contaminating activities are likely to have occurred at the Site which may present a risk to the Proposed Development.

Site Condition and Surrounding Environment

The Site comprised of three irregular shaped lots situated to the north of Mandalong Road. The land use comprised of a mix of residential and commercial/business use. Vegetation across the Site comprised of large mature trees with smaller undergrowth predominately covering the north eastern portion. Large areas of cleared land were located in the southern areas of the Site around the residential properties. An overhead power easement dissects the Site running north east to south west. Two large dams were situated in the northern portion of the central lot.

Surrounding land uses comprised of environmental conservation zoned land adjacent to the north, Mandalong Road with Business Park zoned land to the south, Environmental Management and Business Park zoned land to the east and Environmental Management and Business Park zoned land to the west. Topographically the Site had gentle sloping gradients facing north west with elevations ranging from 15 metres above the Australian Height Datum (AHD) in the south eastern portions to 2 m AHD in the north western corner. A small creek named Mullards Creek dissects the north western and north eastern corners of the Site and runs to the south west and south east on the adjacent land. Drainage at the Site consists of surface runoff migrating as overland flow to the north western portion.

The Site is underlain by the Triassic aged Narrabeen Group, which typically comprises sandstone, siltstone, conglomerate and claystone, with most of the Site located within the Gorokan soil landscape and a small portion on the north west boundary located within the Wyong soil landscape. The Lake Macquarie Local Environment Plan (LEP) (2014) identified most of the Site to be within a Class 5 acid sulfate soil classification, where acid sulfate soils are not typically found. It is noted a Class 2 area is located within 200 m north of the Site. One registered groundwater bore is located on-site and used for domestic/stock purposes with 13 registered bores located within 2km of the Site used for domestic/stock, monitoring and test purposes. The depth of the bores ranged from 3.6 to 234 metres below ground level (m BGL) with groundwater levels reported between 8 and 16 m BGL. Porous and extensive aquifers of low to moderate productivity were identified at the Site. Regional groundwater flow direction is expected to be predominantly to the north east towards Lake Macquarie. The Site is located within the West Lake mining subsidence district.

Site History Review

Based on the review of the historical information, the Site has mostly been used for rural lifestyle purposes with the exception for a period between the early to mid 2000's when Lot 2 in DP 529914 was used as a market garden. A number of buildings had been constructed and removed from the Site with the most recent being the residential dwelling on Lot 11 DP 777024. Significant clearing of vegetation has occurred across the Site,

predominantly during the period of 1950 to 1970. Recent aerial photographs show stockpiled anthropogenic material in the south eastern corner of the Site on Lot 12 DP 777024. Surrounding land use comprised of native bushland or rural/agricultural land up until the early 2000s when significant commercial/industrial development began construction to the south of Mandalong Road.

Fieldwork

Fieldwork comprised of a site walkover and collection of soil samples from 21 test pits and nine boreholes at grid and targeted based sampling locations across the Site to a maximum depth of 4.5 m BGL. Subsurface profile generally comprised of fill / topsoil overlying residual sandy clay / clayey sand overlying bedrock comprising of extremely weathered sandstone and siltstone. Several locations of stockpiled anthropogenic material were observed across the Site. There was no visual or olfactory evidence of hydrocarbon or other contamination.

Results of Analytical Testing

Results of analytical testing of soil samples reported concentration of the concentrations of potential concern (COPC) below laboratory limit of reporting (LOR) or adopted health and/or ecological based criteria in all samples collected except for a bonded (non-friable) fragment of asbestos containing material (ACM) reported on the surface at TP11. Elevated titratable actual acidity (TAA) concentrations for the chromium reducible sulfur suite analysis were reported in excess of the adopted action criteria for coarse textured soils, should more than 1,000 tonnes of soil be disturbed. However, based upon visual inspection of the soil during sampling, no jarosite was identified in the soil sample and given that the pH_{KCL} was reported above 4.5, calculation of KCl and HCl extractable sulfur was not undertaken in accordance with laboratory protocols, indicating that there is likely to be negligible sulfur present in the sample. Therefore, as there is no correlation between the TAA and the sulfur present, the soil is naturally occurring acidic soil rather than actual acid sulfate soil (ASS) material.

Three surface water and sediment samples were collected from Mullards Creek and the two dams located at the Site. All results of analytical testing were reported below the adopted criteria except copper and zinc above freshwater criteria and *E. Coli* and faecal coliforms above drinking water criteria. The elevated copper and zinc concentrations were reported at all sampling locations and are likely representative of background concentrations. Microbiological impact was reported in all sample locations with the highest concentrations reported in the sample collected from Mullards Creek, which is likely to be attributable to background concentrations in the larger catchment and not representative of a contamination issue at the Site. It is understood that the dams from which these samples were collected are likely to be dewatered and decommissioned during construction of the Proposed Development and therefore unlikely to present a future ecological risk at the Site.

Conclusion and Recommendations

Based on the results of the Site history review, site inspection and analytical results, the Site is considered to present a low risk of contamination. The results of analytical testing have been reported at levels that would not preclude the proposed development of the Site for commercial land use, subject to completion of the recommended works in **Section 11**.

In order to address minor issues at the Site, EP Risk recommends that the following management works are undertaken:

- Removal and disposal of anthropogenic waste in areas identified in **Figure 3**.
- Emu picking of bonded (non-friable) ACM fragments in the vicinity of TP11.
- An unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be identified during the proposed redevelopment works.

Table of Contents

1	Introduction	1
1.1	Objective	1
1.2	Scope of Work	1
1.3	Site Identification	2
2	Technical Framework	3
3	Site Condition and Surrounding Environment	4
3.1	Land Use and Layout	4
3.2	Surrounding Land Use	5
3.3	Topography and Drainage	5
3.4	Geology	5
3.5	Soil Landscapes	5
3.6	Natural Occurring Asbestos Potential	5
3.7	Acid Sulfate Soils	5
3.8	Hydrology and Hydrogeology	5
3.9	Mining Subsidence	6
3.10	Current Mining Exploration Titles	6
3.11	Regulatory Searches	6
3.12	Licensed Activities Under the Protection of the Environment Operations Act 1997	7
3.13	Delicensed Activities Still Regulated by the NSW EPA	7
3.14	Former Licensed Activities under the POEO Act, now Surrendered	8
4	Site History	9
4.1	Historical Title Deed Search	9
4.1.1	Lot 11 in DP 777034	9
4.1.2	Lot 12 in DP 777034	9
4.1.3	Lot 2 in DP 529914	9
4.2	Review of Historical Aerial Photos	9
4.3	Business Directory Search	11
4.4	Summary of Site History	11
5	Sampling and Analysis	12
5.1	Data Quality Objectives	12
5.2	Data Quality Indicators	17
5.3	Sampling and Analysis Methodology	18
5.3.1	Soil Sampling Methodology	18
5.3.2	Sediment Sampling Methodology	19
5.3.3	Surface Water Sampling Methodology	19
5.4	Analytical Testing	19
5.5	Field and Laboratory Quality Assurance and Quality Control (QA/QC)	20
6	Environmental Quality Criteria	22
6.1	Soil Criteria	22
6.2	Sediment Criteria	23
6.3	Surface Water Criteria	23
7	Results	24
7.1	Subsurface Conditions	24
7.2	Soil Vapour Screening	25
7.3	Analytical Testing – Soil	25
7.3.1	TRH/BTEXN/PAH/OCP/OPP/PCB/Heavy Metals	26
7.3.2	Asbestos	26
7.3.3	Acid Sulfate Soil	26
7.3.4	Microbiological	26
7.4	Analytical Testing – Sediment	26
7.4.1	PAH/OCP/PCB/Heavy Metals	26
7.4.2	Microbiological	26
7.5	Analytical Testing – Surface Water	26
7.5.1	TRH/BTEXN/PAH/OCP/OPP	26

7.5.2	Heavy Metals	27
7.5.3	Microbiological	27
8	Discussion	28
9	Conceptual Site Model.....	31
9.1	Contaminating Activities	31
9.2	Affected Media.....	31
9.3	Human and Ecological Receptors.....	31
9.4	Potential and Complete Exposure Pathways	31
10	Conclusion.....	33
11	Recommendations.....	35

List of Tables in Body of Report

Table 1 – Site Identification	2
Table 2 – Historical Mining Exploration Titles	6
Table 3 – Regulatory Searches.....	6
Table 4 – Licensed Activities Under the POEO Act	7
Table 5 – Delicensed Activities still regulated by the NSW EPA	7
Table 6 – Former licensed activities under the POEO Act, now surrendered.....	8
Table 7 – Historical Aerial Photograph Review.....	9
Table 8 – Business Directory Records 1950-1991 Road or Area Matches.....	11
Table 9 – Summary of Decision Rules.....	13
Table 10 – DQO, Requirements and Indicators	17
Table 11 – Analytical Testing of Primary Samples	19
Table 12 – DQI Results Summary	20
Table 13 – Adopted Soil Criteria	22
Table 14 – Geotechnical Units	24
Table 15 – Summary of subsurface conditions.....	24
Table 16 – Assessment of Decision Rules	28
Table 17 – Source-Pathway-Receptor Linkages.....	32

List of Attached Figures

Figure 1	Site Location and Layout
Figure 2	Areas of Environmental Concern
Figure 3	Sampling Locations

List of Appendices

Appendix A	Subdivision Plans
Appendix B	Lot Search Environmental Report (2021)
Appendix C	Site Photographs
Appendix D	Historical Title Dead Search
Appendix E	Test Pit Logs
Appendix F	NATA Accredited Laboratory Reports

1 Introduction

EP Risk Management Pty Ltd (EP Risk) was engaged by TSA Management Pty Ltd c/- Winarch Capital to undertake a Preliminary Site Investigation (PSI) of a property located at 56-76 Mandalong Road, Morisset, New South Wales (NSW) (the Site). The Site location and regional map is illustrated in **Figure 1**.

It is understood that the Site is proposed to be redeveloped into a Bulky Goods Centre (Proposed Development), and that the Assessment is required to assist in the Development Application (DA) process in accordance with State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55). Subdivision plans of the Proposed Development were provided for the purposes of undertaking the PSI and are attached as **Appendix A**.

1.1 Objective

The objective of the PSI was to assess whether contaminating activities are likely to have occurred at the Site which may present a human health or ecological risk to the Proposed Development.

1.2 Scope of Work

The scope of work completed to achieve the objective was:

- Conduct a site visit to observe on-site and off-site conditions.
- Undertake a desktop study for a Site history review, based upon:
 - Historical title deed search.
 - Historical aerial photography.
 - Historical business directories.
- Identification of areas and contaminants of potential concern (COPC) for the Site based upon the site history information and site inspection.
- Collection of soil samples from 20 grid and targeted based locations across the Site, three (3) sediment and three (3) surface water samples from the farm dam and the creek at the Site.
- Submission of selected soil, sediment and surface water samples to a National Association of Testing Authorities (NATA) accredited laboratory for analysis of the identified COPC.
- Preparation of a report summarising the findings for the preliminary site investigation in accordance with the NSW Environment Protection Authority (NSW EPA) (2020) *Guideline for Consultants Reporting on Contaminated Land* and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (ASC NEPM 2013)

1.3 Site Identification

The Site Identification details are presented in **Table 1**.

Table 1 – Site Identification	
Item	Description
Address	56-76 Mandalong Road, Morisset, NSW (Figure 1)
Legal description	Lot 11 and 12 in Deposited Plan (DP) 777034 & Lot 2 in DP 529914
Approximate Area	13 hectares (ha)
Municipality	Lake Macquarie City Council (Council)
Zoning	The Lake Macquarie LEP 2014 identifies the Site as B7 Business Park, E2 Environmental Conservation and SP2 Infrastructure

2 Technical Framework

The PSI was conducted in general accordance with:

- ASC NEPM (2013).
- 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.
- AS 4482.2-1999: Guide to the investigation and sampling of sites with potentially contaminated soil, Part 2: Volatile substances.
- Department of Urban Affairs and Planning and Environment Protection Authority (EPA) (1998) *Managing Land Contamination, Planning Guidelines, SEPP 55 – Remediation of Land*.
- Friebel, E & Nadebaum, P 2011, Health Screening Levels for Petroleum Hydrocarbons in soil and Groundwater. Part 1: Technical development document, CRC CARE Technical Report no. 10, CRC for Contamination Assessment and Remediation of the Environment (CRC CARE), Adelaide, Australia.
- ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia.
- National Health and Medical Research Council (NHMRC) (2008) *Guidelines for Managing Risk in Recreational Waters*.
- NHMRC and National Resource Management Ministerial Council (NRMMC) (2011) National Water Quality Management Strategy, Australian Drinking Water Guidelines 6, 2011 (version 3.5 updated August 2018) (ADWG 2011).
- NSW Environment Protection Authority (EPA) (1995) *Sampling Design Guidelines*.
- NSW EPA (2017) Guidelines for the NSW Auditor Scheme (3rd Edition) (NSW Auditor Guidelines).
- NSW EPA 2020.
- NSW EPA (2000) Use and Disposal of Biosolids Products (NSW EPA 2000).
- United State Environment Protection Agency (USEPA) (2006) Guidance on Systematic Planning Using the Data Quality Objectives Process, ref: EPA QA/G-4.
- Acid Sulfate Soil Manual (1998), *NSW Acid Sulfate Soils Management Advisory Committee* (NSW ASS Manual).
- National Acid Sulfate Soils Guidance (2018) National Acid Sulfate Soils Sampling and Identification Methods Manual), Water Quality Australia (National ASS Guidance).
- Western Australian (WA) Department of Health (DOH) (2009) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia ('DOH 2009').
- SafeWork NSW (2014) Managing Asbestos in or on Soil.
- SafeWork Australia (2018) How to Manage and Control Asbestos in the Workplace.

3 Site Condition and Surrounding Environment

The majority of information provided in the following sections was obtained from Lotsearch Environmental Risk and Planning Report (Lotsearch 2020). A copy of the Lotsearch (2020) report is attached as **Appendix B**.

3.1 Land Use and Layout

As of 27 January 2021, the Site comprised of three irregular shaped lots situated to the north of Mandalong Road. The land use comprised of a mix of residential and commercial/business use. EP Risk undertook a site inspection on 14 January 2021 comprising of a site walkover and visual assessment to determine suitable locations for subsurface investigations. The majority of the Site was relatively flat with the exception of the south eastern portion where elevations increased towards Mandalong Road. A small creek named Mullards Creek dissects the north western and north eastern corners of the Site and runs to the south west and south east on the adjacent land. Drainage at the Site consists of surface runoff migrating as overland flow towards the north western portion.

Vegetation across the Site comprised of large mature trees with smaller undergrowth predominately covering the north eastern portion. Large areas of cleared land were located in the southern areas of the Site around the residential properties. An overhead power easement dissects the Site running north east to south west. Two large dams were situated in the northern portion of the central lot. Site features observed during the site inspection are summarised below with photos attached as **Appendix C**.

- Dwelling used for commercial signage business on Lot 12 DP777034 (**Plate 1**);
- Stockpiled concrete slabs in the south eastern corner of the Site (**Plate 2**);
- Stockpiled fill material in south western corner of the Site (**Plate 3 and 4**);
- Stockpiled anthropogenic material comprising of steel and plastic on Lot 12 DP 777034 (**Plate 5**);
- Car seat and plastic chair in the central portion of Lot 12 DP 777034 (**Plate 6**);
- Mullards Creek in north western corner of Lot 12 DP 777034 (**Plate 7**);
- Old broken-down motor bike, farm vehicles in the northern portion of Lot 12 DP 777034 (**Plates 8 to 11**);
- Buried anthropogenic waste in central portion of Lot 11 DP 777034 (**Plates 12 and 14**);
- Dam located in northern portion of Lot 2 DP 529914 (**Plates 13**);
- Imported gravel material used for access road on Lot 11 DP 777034 (**Plate 15**);
- Driveway to former dwelling off Mandalong road to Lot 11 DP 777034 (**Plate 16**);
- Septic tank for Dwelling located on Lot 2 DP 529914 (**Plate 17**);
- Fill mounds located in the central portion of Lot 2 DP 529914 (**Plate 19 and 20**); and
- Stockpiled building materials around dwelling on Lot 12 DP777034 (**Plate 21**).

3.2 Surrounding Land Use

The Site is located within an area of mixed zoned use comprising B7 Business Park and E2 Environmental Conservation. As of 21st December 2020, surrounding land uses comprised:

- North: Environmental Conservation zoned land adjacent.
- South: Mandalong Road with Business Park zoned land beyond.
- East: Environmental Management and Business Park zoned land adjacent.
- West: Environmental Management and Business Park zoned land adjacent.

3.3 Topography and Drainage

Topographically the Site had gentle sloping gradients facing north west with elevations ranging from 15 metres above Australian Height Datum (m AHD) in the south eastern portions of the Site to 2 m AHD in the north western corner of the Site. A small creek named Mullards Creek dissects the north western and north eastern corners of the Site and runs to the south west and south east on the adjacent land. The Site drainage is considered to consist of surface runoff migrating across the Site as overland flow leaving the Site in the north western portion of the Site. A plan showing the topographical contours of the Site is provided within the Lotsearch (2020) Report in **Appendix B**.

3.4 Geology

Based on the information contained in the Newcastle Coalfield Regional Geological Map 9231 (Edition 1, 1995) the Site is underlain by the Triassic aged Narrabeen Group, which typically comprises sandstone, siltstone, conglomerate and claystone.

3.5 Soil Landscapes

Based on the soil landscapes data sourced from the NSW Office of Environment and Heritage (OEH) (Lotsearch, 2020) most of the Site is located within the Gorokan soil landscape with a small portion on the north west boundary located within Wyong soil landscape.

3.6 Natural Occurring Asbestos Potential

No reported naturally occurring asbestos potential has been identified within 1 km of the Site.

3.7 Acid Sulfate Soils

The Lake Macquarie Local Environment Plan (LEP) (2014) identified most of the Site to be within a Class 5 acid sulfate soil classification, where acid sulfate soils are not typically found. It is noted a Class 2 area is located within 200 m north of the Site.

3.8 Hydrology and Hydrogeology

A search of the NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation undertaken by Lotsearch (2020) indicated that there is one registered bore located on-site used for domestic/stock purposes. In addition to the registered bore onsite, 13 registered bores are located within 2km of the Site. The authorised purposes for the off-site bores in the buffer zone include domestic/stock, monitoring

and test. The depth of the bores ranged from 3.6 to 234 metres below ground level (m BGL) with standing water levels (SWLs) recorded between 8 and 16 m BGL.

Review of the Hydrogeology Map of Australia, Lotsearch (2020) identified porous, extensive aquifers of low to moderate productivity. Regional groundwater flow direction is expected to be predominantly to the north east towards Lake Macquarie.

3.9 Mining Subsidence

With reference to the Mining Subsidence District Data Source (2016), the Site is located within the West Lake mining subsidence district.

3.10 Current Mining Exploration Titles

With reference to the NSW Department of Industry mining exploration titles database, the current mining and exploration titles identified at and within 1 km of the Site are provided in **Table 2**.

Table 2 – Historical Mining Exploration Titles				
Holder	Start Date	End Date	Resource	Distance from Site
Centennial Mandalong Pty Ltd	16/09/91	13/01/22	Coal	Onsite
	23/10/92	23/10/17	Coal	Onsite
	1/03/99	28/02/20	Coal	442 m south west
	18/3/88	31/07/17	Coal	782 south west

3.11 Regulatory Searches

A summary of the regulatory searches performed by Lotsearch (2020) are summarised in **Table 3**.

Table 3 – Regulatory Searches	
Search	Results
SEPP Protected Areas	No SEPP State Significant Precincts have been identified at or within 1 km of the Site.
SEPP Major Developments	No SEPP Major Development Areas have been identified at or within 1 km of the Site.
Contaminated Sites Notified to the NSW EPA	As of 21 st December 2020, there is one (1) record of a contaminated site within 500m west of the Site that has been notified to the NSW EPA in accordance with the <i>Contaminated Land Management Act 1979</i> (CLM Act). This site is identified to be Mandalong Mine. Given the separation distance it is considered that the activities of the mine are unlikely to impact the Site from a contamination perspective.
Contaminated Land: Records of Notice	No contaminated land records of notices have been identified within 1 km of the Site.
Former Gasworks	No former gasworks have been identified within 1 km of the Site.
NSW EPA per- and poly-fluoroalkyl substances ('PFAS') Investigation and Management Programs	No sites under the NSW PFAS Investigation Program, Defence PFAS Investigation Program, Defence PFAS Management Program or Airservices Australian National PFAS Management Program were identified within 1 km of the Site.

Table 3 – Regulatory Searches	
Search	Results
Defence 3 Year Regional Contamination Investigation Program	No sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program were identified within 1 km of the Site.
Waste Management Facilities	No records of waste management facilities were reported at or within 1 km of the Site.
National Liquid Fuel Facilities	The Caltex Morisset Service Station was identified within 100 m of the Site. Given the separation distance, and down hydraulic gradient location to the Site, it is considered that the activities of the service station are unlikely to impact the Site from a contamination perspective.

3.12 Licensed Activities Under the Protection of the Environment Operations Act 1997

A summary of the licensed activities under the *Protection of the Environment Operations Act 1997* (POEO Act) being undertaken within 1 km of the Site is provided in **Table 4**.

Table 4 – Licensed Activities Under the POEO Act			
EPL ¹	Organisation	Activity	Distance from Site
6332	Council	Other activities	Onsite
365	Centennial Mandalong Pty Limited	Coal works	443 m west
21230	EDL CSM (NSW) Pty Ltd	Generation of electrical power from gas	543 m west
12208	Sydney Trains	Railway systems activities	827 m east

The licensed activities in **Table 4** are considered to present a low risk of contamination based upon the nature of the activities.

3.13 Delicensed Activities Still Regulated by the NSW EPA

Delicensed activities still regulated by the NSW EPA have been identified within 1 km of the Site is provided in **Table 5**.

Table 5 – Delicensed Activities still regulated by the NSW EPA				
Licence No.	Organisation	Location	Activity	Distance from Site
678	Hanson Construction Materials Pty Ltd	230 Mandalong Rd, Morisset	Concrete works	402 m east

The delicensed activity in **Table 5** are considered to present a low risk of contamination based due to the separation distance to the site and the nature of the activity.

¹ EPL – Environment Protection License.

3.14 Former Licensed Activities under the POEO Act, now Surrendered

Former licensed activities under the POEO Act, now surrendered identified within 1 km of the Site are provided in **Table 6**.

Table 6 – Former licensed activities under the POEO Act, now surrendered				
Licence No.	Organisation	Location	Activity	Distance from Site
4653	Luhrmann Environment Management Pty Ltd	Waterways throughout NSW	Other activities - Application of herbicides	Onsite
4838	Robert Orchard			
6630	Sydney Weed and Pest Management Pty Ltd			

The former licensed activities in **Table 6** are considered to present a low risk of contamination based upon the nature of the activities.

4 Site History

The Site history sources utilised during the review included:

- Historical title deed search.
- Historical aerial photography.
- Historical business directories.

4.1 Historical Title Deed Search

4.1.1 Lot 11 in DP 777034

Historical certificates of title details were reviewed and identified that the title was created in 1905 with the proprietor of the Site being James Thomas Walker and Arthur John Mackenzie (esquire). Since the title's creation, the title had been transferred twenty times with the proprietors of note comprising of graziers, market garden/poultry farmer, farmer and building contractor. Certificates of title, plans of subdivision/title plans and title history search documents are attached as **Appendix D**.

4.1.2 Lot 12 in DP 777034

Historical certificates of title details were reviewed and identified that the title was created in 1905 with the proprietor of the Site being James Thomas Walker and Arthur John Mackenzie (esquire). Since the title's creation, the proprietors were identified to be those holding the title to Lot 11 in DP 777034 up until 1988. The title transferred three more times until the current title holder purchased the title in 2017. Certificates of title, plans of subdivision/title plans and title history search documents are attached as **Appendix D**.

4.1.3 Lot 2 in DP 529914

Historical certificates of title details were reviewed and identified that the title was created in 1905 with the proprietor of the Site being James Thomas Walker and Arthur John Mackenzie (esquire). Since the title's creation, the proprietors were identified to be those holding the title to Lot 11 and Lot 12 in DP 777034 up until 1988. The title transferred three more times until the current title holder purchased the title in 2017. Certificates of title, plans of subdivision/title plans and title history search documents are attached as **Appendix D**.

4.2 Review of Historical Aerial Photos

Aerial photographs from 1954, 1965, 1976, 1984, 1994, 2002, 2005, 2010, 2015 and 2012 were reviewed to identify past land uses of the Site and surroundings. **Table 7** provides a summary of the review.

Table 7 – Historical Aerial Photograph Review	
Year	Description
1954	Site: The Site comprises of a residential dwelling, cleared land in the central-eastern portion of the Site, native bushland to the west and an easement running in a north east – south west direction. Surroundings: Mandalong Road is visible to the south, with surrounding land comprising of native bushland and continuation of the easement.
1965	Site: Additional structures have been constructed and some clearing of land has occurred on the eastern section of the Site.

Table 7 – Historical Aerial Photograph Review

Year	Description
	Surroundings: Adjacent land to the north west and east have been cleared significantly for possible agricultural purposes. Some structures are visible on land to the west.
1976	Site: The entire Site has been mostly cleared with the exception of a small section in the south western corner. More structures have been built in the south eastern corner of the Site. Farm dams have been constructed in the north eastern portion of the Site. Mullards Creek is visible in the north western corner of the Site. Surroundings: Significant clearing has occurred on adjacent land to the south. Further development of adjacent properties to the west has occurred.
1984	Site: No significant changes have occurred. surroundings: No significant changes have occurred.
1994	Site: A residential dwelling with detached shed has been constructed in the south western corner of the Site. Significant disturbance to the ground surface is visible with access tracks/roads constructed. Surroundings: Development of land to the south west has occurred.
2002	Site: A larger shed has been constructed in close proximity to the dwelling in the south western corner of the Site. A new dwelling and large shed have been constructed in the south eastern corner of the Site. Market garden polytunnels are also visible in the eastern portion of the site. A second large dam has been constructed in the northern portion of the Site. Surroundings: Land has been cleared and structures built to the south and south east of the site. A roundabout has been constructed on Mandalong Road.
2005	Site: The polytunnels have been removed with the exception of one. Surroundings: Multiple commercial structures built to the south to the Site
2010	Site: The remaining polytunnel has been removed from the Site. Surroundings: Additional structures built on adjacent land south of the Site.
2015	Site: No significant changes. Surroundings: Buildings constructed to the south of the Site on the northern side of Mandalong Road. Further development on southern side of Mandalong Road.
2020	Site: The middle dwelling in the southern portion of the Site has been removed. Stockpiles of anthropogenic material are visible surrounding and to the west of the dwelling located in the south western portion of the Site. Surroundings: Further development on southern side of Mandalong Road.

The aerial photographs reviewed are provided in the Lotsearch (2020) report provided as **Appendix A**.

4.3 Business Directory Search

A search of the Universal Business Directory (UBD) (Lotsearch 2020), spanning circa 1950 to 1991 identified adjacent commercial uses during this period. These are provided in **Table 8**.

Table 8 – Business Directory Records 1950-1991 Road or Area Matches			
Business Activity	Premise	Year	Distance to road Corridor or Area
-	Central Truck Rentals, 173 Mandalong Rd, Morisset	1991	0 m
-	Pioneer Concrete (NSW) Pty Ltd, Mandalong Rd, Morisset	1991	0 m
-	Turf, 173 Mandalong Rd, Morisset	1991	0 m
-	Grange Mobile Home Village, The Gimberts Rd, Morisset	1991	0 m
Motor garages and engineers	Fennel, L. F., Newcastle St Morisset	1950	234 m

The identified commercial uses in **Table 8** are considered to present a low risk of contamination based upon the nature of the activities and distance from the Site.

4.4 Summary of Site History

Based on the review of the historical information, the Site has mostly been used for rural lifestyle purposes with the exception for a period between the early to mid-2000s when Lot 2 in DP 529914 was used for market garden purposes. A number of buildings had been constructed and removed from the Site with the most recent being the residential dwelling on Lot 11 DP 777024. Significant clearing of vegetation has occurred across the Site, mostly occurring from the 1950s to 1970s. Recent aerial photographs show stockpiled anthropogenic material in the south eastern corner of the Site on Lot 12 DP 777024.

Surrounding land use comprised of native bushland or rural/agricultural land up until the early 2000s when significant commercial/industrial development began construction to the south of Mandalong Road.

5 Sampling and Analysis

5.1 Data Quality Objectives

To assess whether an appropriate sampling strategy was adopted for the PSI, EP Risk adopted the data quality objectives (DQOs) planning process as:

- Recommended in the ASC NEPM 2013.
- Required within the NSW EPA (2017), *Guidelines for the NSW Site Auditors Scheme (3rd edition)*.
- With consideration to technical details outlined in US EPA (2006) *Guidance on Systematic Planning Using the Data Quality Objectives Process*, ref: EPA QA/G-4 and AS 4482.1-2005 *Guide to the investigation and sampling of sites with potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds*.

State the Problem

The PSI was required to assess whether any contaminating activities are likely to have occurred at the Site which may present a human health or ecological risk to the proposed development of the Site for commercial land use.

Identify the Decision

To assess the soil conditions at the Site, the following decisions need to be addressed:

1. Does the assessment follow all applicable guidelines?
2. Have any aesthetic issues relating to site soils been adequately addressed?
3. Has soil been assessed against relevant health-based investigation levels and potential for migration of contamination from soil to groundwater been considered?
4. Have any aesthetic issues relating to site soils been adequately addressed?
5. Has groundwater been assessed against relevant investigation levels?
6. Have hazardous ground gases (where relevant) been assessed against relevant health-based investigation levels and screening values?
7. Are there any impacts of chemical mixtures?
8. Are there any potential human health and/or ecological risks to the identified receptors?
9. Is there any evidence of, or potential for, migration of contaminants off-site?
10. Is a DSI required?

Identify Inputs into the Decision

The inputs required to make the decision include the following:

- Site history investigation.
- Environmental data as collected by sampling and analysis and site observations made during this investigation.

- Assessment criteria to be achieved on the Site as based on the proposed development of the Site for commercial land use and project objectives, as defined by the Tier 1 assessment criteria nominated in **Section 6**.
- Confirmation that data generated by sampling and analysis are of an acceptable quality to allow reliable comparison to adopted assessment criteria as undertaken by assessment of quality assurance / quality control (QA/QC) as per the data quality indicators (DQIs) established in **Section 5.2**.

Define the Boundaries of the Study

The spatial boundaries of the PSI comprised Lot 11 and 12 in DP 777034 and Lot 2 in DP 529914, with the maximum proposed depth for the investigation has been set at 4.5 m BGL and the approximate boundaries identified in **Figure 2**.

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

Develop a Decision Rule to Identify the Decision

The assessment criteria for the contaminants of concern are presented in **Section 6**. These criteria have been adopted to determine whether additional assessment is required and whether the Site is suitable for the proposed land use. The decision-making process for assessing urban redevelopment sites was adopted and summarised in **Table 9**.

Table 9 – Summary of Decision Rules	
Decision	Rule
1. Does the assessment follow all applicable guidelines?	If the assessment follows all applicable guidelines, then the decision is Yes; otherwise, the decision is No.
2. Have any aesthetic issues relating to site soils been adequately addressed?	The following criteria was adopted with respect to aesthetic issues relating to site soils: Either: the reported concentrations are all below the adopted physical and aesthetic management limits; Or: Were any chemically discoloured or stained soils, odorous soil, chemical residues, putrescible refuse, anthropogenic materials, hydrocarbon odour of staining identified? If the criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is Yes. Otherwise, the decision is No.
3. Has soil been assessed against relevant health-based investigation levels and potential for migration of contamination from soil to groundwater been considered?	The nature and extent of soil impacts was assessed, and soil analytical data was compared against the adopted health and ecological criteria (refer to Section 6). Assessment of the potential for migration of contamination from soil to groundwater includes further assessment of soil leachate and / or assessment of groundwater where Tier 1 criteria have been exceeded. The following statistical criteria was adopted with respect to soil and soil leachate (where applicable):

Table 9 – Summary of Decision Rules

Decision	Rule
	Either: the reported concentrations are all below the adopted site criteria; Or: the average site concentration for each analyte must be below the adopted site criterion; no single analyte concentration exceeds 250% of the adopted site criterion; and the standard deviation of the results must be less than 50% of the site criteria. And: the 95% upper confidence limit of the arithmetic mean (UCL_{mean}) for each analyte must be below the adopted site criterion. If the criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is No. Otherwise, the decision is Yes.
4. Have any aesthetic issues relating to site soils been adequately addressed?	The following criteria was adopted with respect to aesthetic issues relating to site soils: Either: the reported concentrations are all below the adopted physical and aesthetic management limits; Or: Were any chemically discoloured or stained soils, chemical residues, putrescible refuse, anthropogenic materials, hydrocarbon sheens on groundwater identified? If the criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is No. Otherwise, the decision is Yes.
5. Has groundwater been assessed against relevant investigation levels?	Where there is the potential for migration of contamination from soil to groundwater then assessment of groundwater will be required and analytical data compared against the adopted criteria. The following statistical criteria was adopted with respect to groundwater where assessment is required: Either: the reported concentrations are all below the adopted site criteria; Or: The reported concentrations are below upgradient concentrations and are therefore considered representative of background data. If the criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is No. Otherwise, the decision is Yes.
6. Have hazardous ground gases (where relevant) been assessed against relevant health-based investigation levels and screening values?	Where there is the potential for hazardous ground gases to be present then they will need to be assessed and analytical data compared against the adopted criteria.

Table 9 – Summary of Decision Rules	
Decision	Rule
	The following statistical criteria was adopted with respect to ground gases (where likely to be present): Either: the reported soil vapour concentrations (where relevant) are all below the adopted site criteria; Or: The reported soil and groundwater concentrations were below the criteria for vapour intrusion. If the criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is No. Otherwise, the decision is Yes.
7. Are there any impacts of chemical mixtures?	The following criteria was adopted with respect to chemical mixtures: The impacts of chemical mixtures have been considered and are not present. If the criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is No. Otherwise, the decision is Yes.
8. Are there any potential human health and/or ecological risks to the identified receptors?	Are the statistical criteria stated above satisfied, and has an assessment of risk indicated no unacceptable risks? If yes, the decision is No. Otherwise, the decision is Yes.
97. Is there any evidence of, or potential for, migration of contaminants off-site?	Were soil and groundwater concentrations exceeding the adopted health and ecological criteria identified near the site boundary and found off-site. If so, the decision is Yes. Otherwise the decision is No.
10. Is a DSI required?	Is the answer to any of the above decisions Yes? If yes, further Tier 2 and / or Tier 3 assessment and a site management strategy may be required to be developed. If no, a DSI is not required.

Specify Acceptable Limits of Decision Errors

The acceptable limits were as follows:

- I. Individual or 95% UCL_{mean} concentrations to be below the adopted criteria or background concentrations.
- II. 95% of the data must satisfy the data quality indicators ('DQIs') which were determined for completeness, representativeness, precision and accuracy of both field and laboratory data. Therefore, the limit on the decision error was 5% that a conclusive statement may be incorrect.

- III. A comprehensive quality assurance/quality control ('QA/QC') program was undertaken including representative sampling and sampling at an appropriate density for the purpose of the investigation.

The acceptable limit of error for sampling techniques and laboratory analysis was defined by the DQIs as follows:

Data Representativeness

Expresses the accuracy and precision with which sample data represents an environmental condition. Data representativeness was achieved by the collection of samples at an appropriate pattern and density as well as consistent and repeatable sampling techniques and procedures.

Completeness

Refers to, the percentage of data that can be considered valid data. Sufficient data was required to enable an assessment of the Decision Rules.

Comparability

A qualitative comparison of the confidence with which one data set can be compared to another. This was achieved through consistent sampling and analytical testing and reporting techniques.

Precision

A measure of the reproducibility of on measurements under a given set of conditions. The relative percent difference (RPD) has been adopted to assess the precision of data between duplicate sample pairs according to the following equation.

$$RPD\% = \frac{[C_p - C_d]}{C_p + C_d} \times 200$$

Where:

C_p = Primary sample

C_d = Duplicate Sample

An acceptance criterion of ±30% had been adopted for inorganic field duplicates and triplicates and ±50% for organic field duplicates and triplicates. However, it should be noted that exceedances of these criteria are common for heterogeneous soil or fill or for low analyte concentrations.

Accuracy

A measure of the bias in the analytical results and can often be attributed to field contamination; insufficient preservation or sample preparation; or inappropriate analytical techniques. Accuracy of the analytical data is assessed by consideration of laboratory control samples and laboratory spikes.

Optimise the Design for Obtaining Data

A grid and targeted-based sampling pattern was adopted based upon the review of historical information and site inspection. A comprehensive suite of COPC was selectively adopted for the assessment to provide characterisation of the status of soil, sediment and surface water at the Site. The adopted sampling approach is consistent with AS4482.1 (2005).

5.2 Data Quality Indicators

The DQOs, requirements and indicators for the assessment are presented in **Table 10**.

Table 10 – DQO, Requirements and Indicators		
DQO	Requirement	DQI
Precision		
Standard operating procedures appropriate and complied with	The sampling methods comply with industry standards and guidelines	Meet requirement
Intra-laboratory duplicates	1 per 20 samples	RPDs < 50%
Inter-laboratory duplicates	1 per 20 samples	RPDs < 50%
Laboratory duplicates	Minimum of 1 per batch per analyte	RPDs < 50%
Accuracy		
Laboratory matrix spikes	1 per batch per volatile/semi-volatile analyte	Recoveries 50% to 150%
Laboratory surrogate spikes	1 per volatile/semi-volatile analyte sample (as appropriate)	Recoveries 70% to 130%
Laboratory control samples	At least 1 per batch per analyte tested for	Result < laboratory reporting limit
Representativeness		
Sampling methodology - preservation	Appropriate for the sample type and analytes	Meet requirement
Samples extracted and analysed within holding times	Specific to each analyte	Meet requirement
Laboratory method blanks	At least 1 per batch per analyte tested for	Result < laboratory reporting limit
Trip blanks	1 per lab batch for volatile analytes	Result < laboratory reporting limit
Trip spikes	1 per lab batch for volatile analytes	Recoveries 60-100%
Rinsate	1 per lab batch for volatile analytes	Result < laboratory reporting limit
Comparability		
Sampling approach	Consistent for each sample	Meet requirement
Analysis methodology	Consistent methodology for each sample	Meet requirement
Handling conditions and sampler	Consistent for each sample	Meet requirement
Field observations and analytical	Field observations to support analytical results	Meet requirement

Table 10 – DQO, Requirements and Indicators

DQO	Requirement	DQI
Consistent laboratory reporting limit	Consistent between primary and secondary laboratories	Meet requirement
Completeness		
Sampling staff	Consistent sampling staff used.	Meet requirement
Laboratory accreditation	NATA Accredited laboratory for methods used	Meet requirement
Accredited methods	NATA accredited methods used appropriate for each analyte.	Meet requirement
ASC NEPM (2013) lab methods	Lab methods consistent with the ASC NEPM (2013).	Meet requirement
Laboratory reporting limit	Laboratory reporting limit consistent and appropriate	Meet requirement
Consistent weather / field conditions	Consistent	Meet requirement
Chain of custody documentation	Appropriately completed	Meet requirement
Field sampling documentation	Appropriately completed	Meet requirement

5.3 Sampling and Analysis Methodology

5.3.1 Soil Sampling Methodology

The methodology for soil sampling was outlined as follows:

- 1 Soil samples were collected from 20 test pit and nine bore hole locations.
- 2 Test pits were advanced via a 25-tonne excavator fitted with a 650mm bucket to a maximum depth of 4.5 m BGL.
- 3 Boreholes were advance via hand auger to a maximum depth of 0.5 m BGL.
- 4 Soils were logged for type, colour, texture, other characteristics and indications of contamination as presented in the bore logs attached as **Appendix E**.
- 5 All sampling equipment was decontaminated with phosphate free detergent and a dedicated pair of nitrile gloves was used for each sample to prevent cross contamination.
- 6 Sufficient soil samples were collected and placed into laboratory prepared sampling jars with a unique sample ID added to the label on each jar.
- 7 The sample jars were preserved on ice immediately after sampling and during shipment to the laboratories. The laboratory chain of custody documentation was completed and accompanied the samples during shipment.

5.3.2 Sediment Sampling Methodology

The methodology for soil sampling was outlined as follows:

- 1 Three sediment samples were collected from Mullards creek and the dams located at the Site.
- 2 A dedicated pair of nitrile gloves was used for each sample to prevent cross contamination.
- 3 Sufficient samples were collected and placed into laboratory prepared sampling containers with the sample details added to the label on the container.
- 4 The sample jars were preserved in an ice-chilled container immediately after sampling and during shipment to the laboratories. The laboratory chain of custody documentation was completed and accompanied the samples during shipment.

5.3.3 Surface Water Sampling Methodology

The surface water sampling methodology was as follows:

- 1 Three surface water samples were collected from Mullards creek and the dams located at the Site using a grab sampler.
- 2 Surface water samples that were proposed to be analysed for dissolved metals were filtered in the field through a dedicated, disposable 0.45 micron (µm) mesh filter to remove suspended solids.
- 3 Surface water samples were collected in preserved bottles specific to each analyte with a unique sample ID added to the label on each bottle.
- 4 The sample bottles were preserved on ice immediately after sampling and during shipment to the laboratories. The laboratory chain of custody documentation was completed and accompanied the samples during shipment.

5.4 Analytical Testing

EP Risk used Eurofins MGT and ALS Global as the primary and secondary laboratories, both of which are NATA accredited for the required analysis. The laboratory analysis was undertaken in accordance with **Table 11**.

Table 11 – Analytical Testing of Primary Samples		
Media	Sampling Locations	Number of Analysis ²
Soil	20	• Heavy metals/OCP/OPP/PCB³ – 31 • TRH/BTEXN/PAH⁴ – 21 • TRH/BTEXN/PAH – 10 • Chromium reducible sulfur suite – 5 • Asbestos w/w % – 5 • Asbestos ID in bulk samples – 2 • Faecal Coliforms and E.Coli – 6

² Excluding duplicates and triplicates.

³ Heavy metals (As, Cd, Cr, Cu, Hg, Pb, Ni and Zn); OCP – Organochlorine Pesticides; OPP – Organophosphate Pesticides; PCB – Polychlorinated Biphenyls.

⁴ TRH – Total Recoverable Hydrocarbons; BTEXN – Benzene; Toluene; Ethylbenzene, Xylene, Naphthalene; PAH – Polycyclic Aromatic Hydrocarbons.

		NEPM Screen for Soil Classification – 2
Sediment	3	Heavy metals (low level Hg)/TRH/BTEXN/PAH/OCP (trace) /OPP/PCB/Faecal Coliforms and E.Coli – 3
Water	3	Heavy metals/TRH/BTEXN/PAH (super trace)/OCP/OPP/Faecal Coliforms and E.Coli – 3
Rinsate blank	-	Heavy metals/TRH/BTEXN/PAH/OCP/OPP/PCB – 2
Trip blank	-	TRH (C6-C9) / BTEXN – 1
Trip spike	-	TRH (C6-C9) / BTEXN – 1

5.5 Field and Laboratory Quality Assurance and Quality Control (QA/QC)

An assessment of the field and laboratory DQI results is presented in **Table 12**.

Table 12 – DQI Results Summary		
Parameter	Requirement	Objective Met
Precision		
Standard operating procedures appropriate and complied with	The sampling methods comply with industry standards and guidelines.	Yes
Field duplicates	1 per 20 samples; and - RPDs < 50%.	Yes Yes ⁵
Field triplicates	1 per 20 samples; and - RPDs < 50%.	Yes Yes ⁵
Laboratory duplicates	- Minimum of 1 per batch per analyte; - RPDs < 50%; and >10%, laboratory specified.	Yes Yes Yes
Accuracy		
Laboratory matrix spikes	1 per batch per volatile/semi-volatile analyte; and - Recoveries >70% to 130%	Yes Yes
Laboratory surrogate spikes	1 per volatile/semi-volatile analyte sample (as appropriate); and - Recoveries 70% to 130%	Yes Yes
Laboratory control samples	- At least 1 per batch for analyte tested; and 70-130%	Yes Yes
Representativeness		
Sample collection - preservation	Appropriate for the sample type and analytes	Yes
Decontamination procedures	All sampling equipment to be decontaminated between each sample	Yes
Holding times	Samples extracted and analysed within laboratory prescribed holding times	Yes
Trip blanks	1 per field laboratory reporting limit	Yes Yes
Trip spikes	1 per field batch for volatile analytes; and - Recoveries 70-130%	Yes Yes

⁵ Exceedances of the adopted RPD criteria for heavy metals were observed which were attributed to the low concentrations observed and / or the heterogeneous distribution of contaminants.

Table 12 – DQI Results Summary		
Parameter	Requirement	Objective Met
Rinsate	1 per field batch for volatile analytes; and - Result < laboratory reporting limit	Yes Yes
Laboratory Method Blanks	- At least 1 per batch per analyte tested for; and - Result < laboratory reporting limit	Yes Yes
Completeness		
Sample logs and groundwater field sheets	Provided	Yes
Chain of custody	Provided	Yes
Sample receipt acknowledgement	Provided	Yes
Laboratory reports	Provided	Yes
Comparability		
Sampling staff	Consistent sampling staff used	Yes
Laboratory accreditation	NATA accredited laboratory for methods used	Yes
Accredited methods	NATA accredited methods used appropriate for each analyte	Yes
ASC NEPM (2013) lab methods	Lab methods consistent with the ASC NEPM (2013)	Yes
Laboratory reporting limit consistent and appropriate	Meet Requirement	Yes
Consistent weather / field conditions	Consistent	Yes

On the basis of the information provided in **Table 12**, EP Risk considers that the DQIs for the project have been met and the data is appropriate for the purposes of this assessment.

6 Environmental Quality Criteria

6.1 Soil Criteria

For the purposes of assessing the results of analytical testing of soils at the Site, the following guidelines were considered:

- ASC NEPM (2013).
- NSW EPA Auditor Guidelines (2017).
- CRC CARE (2011).
- NSW Acid Sulfate Soil Manual (1998).
- NSW EPA (2000).

EP Risk has adopted the ASC NEPM (2013) Tier 1 Guidelines in accordance with NSW EPA (2017). In accordance with the decision-making process for assessing urban redevelopment sites (Appendix A, NSW EPA, 2017), soil concentrations were compared against the following soil investigation levels (SILs):

- **Health-based Criteria for the current and proposed land use:** ASC NEPM 2013 Health-based Investigation Levels (HILs) and Health Based Screening Levels (HSLs) for commercial/industrial land use and the CRC Care (2011) HSLs for intrusive maintenance worker (shallow trench) and direct contact.
- **Ecological Criteria:** ASC NEPM 2013 Ecological-based Investigation Levels (EILs) and Ecological based Screening Levels (ESLs) for commercial/industrial land use.
- **Management Limits:** ASC NEPM 2013 management limits are based upon the physical properties of petroleum hydrocarbons to form observable light non-aqueous phase liquid (LNAPL); create fire and explosion hazards or penetrate or damage underground services. The management limits for commercial and industrial land use based on fine soil have been adopted.
- **Aesthetics:** The consultant should also consider the need for remediation based on the 'aesthetic' contamination as outlined in Schedule B (1) of the ASC NEPM 2013 that states that *'there are no numeric Aesthetic Guidelines however site assessment requires balanced consideration of the quality, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity'*. Soil odour, discolouration and the presence of anthropogenic materials will need to be assessed during the assessment.

The adopted soil criteria for the site are presented in **Table 13**.

Table 13 – Adopted Soil Criteria		
Guidelines	COPC	Adopted Criteria
ASC NEPM 2013	Heavy metals/OCP/PCB /asbestos	HIL D (commercial/industrial)
	Heavy metals/OCP/PAH	EIL (commercial/industrial); < 2 m
	TRH and BTEXN	Vapour intrusion HSL D (Commercial/Industrial); 0-<1m; sand 0-<1m; silt ESLs (commercial and industrial); <2m
	TRH	Management limits (commercial/industrial); fine/coarse soil

Table 13 – Adopted Soil Criteria		
Guidelines	COPC	Adopted Criteria
Friebel, E & Nadebaum, 2011	TRH and BTEXN	Direct contact and intrusive maintenance workers HSLs Vapour Intrusion HSLs for Intrusive Maintenance Workers (Shallow Trench)
Acid Sulfate Soil Manual 1998	Titrateable Peroxide Acidity (TPA), Titrateable Sulfidic Acidity (TSA) and Oxidisable Sulfur (S _{POS})	Sulfur trail and acid trail action criteria for coarse textured soil >1000 tonnes
NSW EPA 2000	Faecal Coliforms and E.Coli	Stabilisation Grade A to C

On the basis of the proposed development and likely future land use, EP Risk has adopted the HILs, HSLs, EILs and ESLs for a commercial/industrial land use setting, which is appropriate for the proposed future land use.

6.2 Sediment Criteria

For the purposes of assessing the results of analytical testing of sediments at the Site, the following guidelines were considered:

- ANZG (2018) Toxicant Default Guideline Values for sediment quality.

The adopted criteria for initial screening of sediments were the default guideline values (DGV) and guideline values (GV)-High. In absence of locally applicable sediment guidelines for a number of analytes, the results were compared to the laboratory limits of reporting and / or upstream (background) values.

6.3 Surface Water Criteria

For the purposes of assessing the results of analytical testing of surface water at the Site, the following guidelines were considered:

- ANZG (2018);
- ASC NEPM (2013);
- CRC Care (2011);
- NSW EPA Auditor Guidelines (2017); and
- NHMRC (2008).

Where the default criteria are exceeded, additional investigations may be required. Where no criterion is available, the background levels (if known) or the laboratory limit of reporting (LOR) can be adopted as the surface water criteria.

7 Results

7.1 Subsurface Conditions

The subsurface conditions encountered in the test pits advanced across the Site are detailed on the report log sheets, attached in **Appendix E** with locations shown on **Figure 2**. A summary of subsurface conditions is presented in **Table 14**. In general, the subsurface can be summarised as follows:

Table 14 – Geotechnical Units			
Unit	Material	Description / Depth Encountered	Comment
1a	Topsoil	Dry, loose, sandy SILT from 0.0 to 0.4 m BGL	-
1b	Fill (Stockpile)	sandy SILT/ silty SAND with gravel approximately 1-2m in height.	Anthropogenic material at TP01.
1c	Fill	sandy GRAVEL/sandy SILT	Maximum depth encountered of 0.6 m at TP07.
2a	Residual	sandy CLAY/sandy silty CLAY from 0.2 to 2.5 m BGL	TP06 and TP07 in the lower elevation of the Site (north west corner), stiff -very stiff.
2b	Residual	Natural sandy silty CLAY/sandy CLAY of medium plasticity from 0.1 to 2.8 m BGL	Stiff to hard.
3a	XW Sandstone	Fine to coarse grained from 1.2 m BGL	Extremely weathered of medium to very low strength.
3b	XW Siltstone	Fine grained from 1.6.	Extremely weathered of very low strength.

A general summary of the subsurface conditions encountered across the site is presented in **Table 15**.

Table 15 – Summary of subsurface conditions			
Test Pit ID	Depth of Topsoil/ Fill (m BGL)	Depth to Rock (mBGL)	Summary of subsurface profile
TP01	0.3 ⁶	NE ⁷	FILL stockpile (sandy SILT) / sandy SILT/ sandy CLAY
TP02	0.3 ⁸	NE	FILL stockpile (sandy SILT) / sandy SILT/ sandy CLAY
TP03	0.3	NE	TOPSOIL (sandy SILT) / clayey SAND / sandy CLAY / clayey SAND
TP04	0.4	NE	TOPSOIL (sandy SILT) / sandy silty CLAY / silty CLAY / clayey SAND
TP05	0.4	2.2	TOPSOIL (sandy SILT) / sandy CLAY / sandy silty CLAY / XW ⁹ siltstone
TP06	0.4 ¹	NE	FILL stockpile (silty SAND with gravel) / sandy SILT (TOPSOIL) / sandy silty CLAY / clayey SAND
TP07	0.6	NE	FILL (sandy GRAVEL) / FILL (sandy SILT) / sandy CLAY
TP08	0.4	2.6	TOPSOIL (sandy SILT) / sandy silty CLAY / clayey SAND / sandy CLAY / XW Sandstone
TP09	0.3	1.6	TOPSOIL (sandy SILT) / sandy CLAY / XW Sandstone
TP10	0.3	1.6	TOPSOIL (sandy SILT) / sandy CLAY / sandy silty CLAY / XW Siltstone

⁶ Below fill stockpile ~1m high.

⁷ Not encountered.

⁸ Below fill stockpile ~2m high.

⁹ Extremely weathered sandstone

Table 15 – Summary of subsurface conditions

Test Pit ID	Depth of Topsoil/ Fill (m BGL)	Depth to Rock (mBGL)	Summary of subsurface profile
TP11	0.2	1.8	FILL (sandy SILT) / sandy SILT with some clay / sandy CLAY / XW Sandstone
TP12	0.2	2.2	TOPSOIL (sandy SILT) / sandy CLAY / sandy silty CLAY / XW Sandstone
TP13	0.3	3.5	TOPSOIL (sandy SILT) / sandy CLAY / clayey SAND / XW Sandstone
TP14	0.2	2	FILL (sandy SILT) / clayey SAND / sandy silty CLAY / XW Sandstone
TP15	0.2	2.4	TOPSOIL (sandy SILT) / clayey SAND / sandy CLAY / XW Sandstone
TP16	0.3	NE	TOPSOIL (sandy SILT) / sandy CLAY / sandy silty CLAY / silty CLAY
TP18	0.2	3	TOPSOIL (sandy SILT) / sandy CLAY / sandy silty CLAY / XW Siltstone
TP19	0.3	2.8	FILL (sandy GRAVEL) / sandy CLAY / silty sandy CLAY / XW Siltstone
TP20	0.2	1.2	FILL (sandy SILT with gravel) / silty sandy CLAY / XW Sandstone / silty CLAY
TP21	0.2	1.8	FILL (sandy SILT) / sandy CLAY / XW Sandstone
BH01	0.1	NE	TOPSOIL (sandy SILT)
BH02	0.1	NE	TOPSOIL (sandy SILT)
BH03	0.1	NE	TOPSOIL (sandy SILT)
BH04	0.1	NE	TOPSOIL (sandy SILT)
BH05	0.1	NE	TOPSOIL (sandy SILT)
BH06	0.1	NE	TOPSOIL (sandy SILT)
BH07	0.1	NE	TOPSOIL (sandy SILT)
BH08	0.1	NE	TOPSOIL (sandy SILT)
BH09	0.6	NE	FILL (sandy silt)

Perched groundwater / seepage was encountered in the test pits TP03, TP04, TP08 and TP13 at the time of fieldwork. The groundwater was considered to be perched water, was encountered TP03, TP04, TP08 and TP13 at depths 1.7m to 3m BGL. It should be noted that groundwater levels are likely to fluctuate with variations in climatic and site conditions.

Detailed soil profile logs are attached as **Appendix E**.

7.2 Soil Vapour Screening

No signs of visual staining or odours were observed in any sample collection with PID readings all recorded at <1 ppm.

7.3 Analytical Testing – Soil

The results of soil analytical testing are contained in the analytical summary tables section at the rear of the report and the laboratory Certificates of Analysis are attached as **Appendix F**.

7.3.1 TRH/BTEXN/PAH/OCP/OPP/PCB/Heavy Metals

TRH/BTEXN/OCP/PCB/PAH/Heavy metal concentrations of the soil samples analysed were reported below the adopted environmental criteria and/or laboratory reporting limits.

7.3.2 Asbestos

Asbestos was detected in bulk sample ACM ID_01 in the form of Chrysotile asbestos.

ACM (as 15% asbestos in ACM >7mm) was not reported in excess of the ASN NEPM HSL D w/w% criteria in any asbestos in soil sample collected.

Respirable (free) fibres were not reported in any asbestos sample collected.

7.3.3 Acid Sulfate Soil

- All samples reported pH_{KCL} above 4.5.
- All samples reported titratable actual acidity (TAA) concentrations less than the NSW ASS Manual 1998 Action Criteria for >1,000 tonnes disturbed for coarse textured soil except for ASS02.
- All samples reported S_{CR} results less than the NSW ASS Manual 1998 Action Criteria for >1,000 tonnes disturbed for coarse textured soil.

7.3.4 Microbiological

Faecal coliform and *E. coli* concentrations were reported below the adopted assessment criteria with the exception of elevated *E. coli* concentrations in excess of the NSW EPA (2000) stabilisation Grade A criteria at Micro_03.

7.4 Analytical Testing – Sediment

The results of sediment analytical testing are contained in the analytical summary tables at the rear of the report and laboratory Certificates of Analysis are attached as **Appendix F**.

7.4.1 PAH/OCP/PCB/Heavy Metals

PAH/OCP/PCB and heavy metal concentrations were reported below the adopted ANZG 2018 Sediment Default DGVs criteria in all samples.

7.4.2 Microbiological

Faecal coliform and *E. coli* concentrations were reported below the adopted assessment criteria.

7.5 Analytical Testing – Surface Water

The results of surface water analytical testing are contained in the analytical summary tables at the rear of the report and laboratory Certificates of Analysis are attached as **Appendix F**.

7.5.1 TRH/BTEXN/PAH/OCP/OPP

TRH/BTEXN/PAH/OCP and OPP concentrations were reported below the adopted assessment criteria in all samples.

7.5.2 Heavy Metals

Heavy metal concentrations were reported below the adopted assessment criteria in all samples except for the following:

- Elevated copper concentrations in excess of the ASC NEPM 2013 Fresh Water criteria in all samples.
- Elevated zinc concentrations in excess of the ASC NEPM 2013 Fresh Water criteria in Water_01 and Water_02.

7.5.3 Microbiological

Detectable Faecal coliform and *E. coli* concentrations were reported in all samples with the exception of *E. Coli* in sample Water_03.

8 Discussion

An assessment of the decision-making process for assessing urban redevelopment sites detailed in EPA (2017) and provided as **Table 9** has been undertaken to assess suitability of the Site for the Proposed Development, as detailed in **Table 16**.

Table 16 – Assessment of Decision Rules	
Decision	Rule
1. Does the assessment follow all applicable guidelines?	The assessment has been undertaken in accordance with all applicable guidelines and criteria as provided in Section 6 . Therefore, the decision is Yes .
2. Have any aesthetic issues relating to site soils been adequately addressed?	Assessment of aesthetic issues has been undertaken at the Site. All soil concentrations were reported below the aesthetic management limits; however, stockpiles of anthropogenic materials have been identified at the Site, therefore the decision is No .
3. Has soil been assessed against relevant health-based investigation levels and potential for migration of contamination from soil to groundwater been considered?	Soil has been assessed against the relevant health-based investigation levels provided as Section 6 and all the results were below the adopted criteria except for the presence of bonded (non-friable) ACM fragments at the surface at TP11 and elevated <i>E. Coli</i> in Micro_03 collected at TP05. The <i>E. Coli</i> and detectable faecal coliforms at TP05 was collected from surficial soils (0.05 m BGL) and considered isolated and superficial in nature and to be the result of potential itinerant animals accessing the Site, and not due to the historical uses of the Site. Based on the presence of asbestos, there is potential for an unacceptable risk to human health and the decision is Yes.
4. Groundwater (where relevant) has been assessed against relevant health-based investigation levels and, if required, any potential impacts to buildings and structures from the presence of contaminants considered?	The majority of concentrations of COPC in the natural soil profile were reported below adopted ecological criteria assessment and therefore assessment of groundwater was not considered to be warranted. Three surface water samples were collected from Mullards Creek and the two dams located at the Site. All results of analytical testing reported below the adopted criteria except for elevated copper and zinc reported above freshwater criteria and detectable <i>E. Coli</i> and faecal coliforms reported above drinking water criteria. The elevated copper and zinc reported in all water samples were considered likely to be representative of background concentrations and unlikely to present a human health or ecological risk to users of these water bodies. The microbiological impact reported in the sample from Mullards Creek it is likely to be attributable to the larger catchment and not representative of a contamination issue at the Site due to concentrations in the water samples collected from the dams reported at considerably lower concentrations and the negligible microbiological impact observed in soil samples collected across the Site.

Table 16 – Assessment of Decision Rules	
Decision	Rule
	The elevated copper, zinc and microbiological concentrations reported in the dam samples do not appear to be representative of a larger contamination issue at the Site and with the dams from which these samples were collected are likely to be dewatered and filled in the Proposed Development and therefore unlikely to present a future ecological risk at the Site.
5. Hazardous ground gases (where relevant) have been assessed against relevant health-based investigation levels and screening values.	As volatile COPC in soil were not reported above the adopted criteria, assessment of hazardous ground gases was not considered relevant and no further ecological risk assessment is required; therefore, the decision is Yes .
6. Issues relating to local area background soil concentrations that exceed relevant investigation levels have been adequately addressed in the site assessment report(s).	Concentrations of natural soils have been reported below the adopted criteria; therefore, the decision is Yes .
7. Are there any impacts of chemical mixtures?	The impacts of chemical mixtures have been considered and are not present; therefore, the decision is No .
8. Any potential ecological risks have been assessed.	Soil has been assessed against the relevant ecological-based investigation levels provided as Section 6 and all the results were below the adopted criteria with the exception of elevated TAA concentration reported above the action Criteria for >1,000 tonnes disturbed for coarse textured soil in sample ASS02. Based upon visual inspection of the soil during sampling, no jarosite was identified in the soil sample. As the pH_{KCL} was reported above 4.5, calculation of KCl and HCl extractable sulfur was not undertaken in accordance with laboratory protocols, indicating that there is likely to be negligible sulfur present in the sample. Therefore, as there is no correlation between the TAA and the sulfur present, the soil is considered to be naturally occurring acidic soil rather than actual ASS material and no further ecological risk assessment is required; therefore, the decision is Yes.
9. Is there any evidence of, or potential for, migration of contaminants from the site has been appropriately addressed, including potential risks to off-site receptors, and reported to the site owner or occupier.	Based upon the low concentrations of COPC in natural soil there is a low likelihood of leaching of contaminants from the Site to groundwater and subsequent off-site migration. Based upon the presence of bonded (non-friable) ACM fragments at TP11 and no respirable (free) fibres reported in any asbestos sample collected there is a low risk of fibre generation during windy conditions that will require management. Based upon the discussion above, the decision is Yes.
10. Is a DSI required?	The site history review and soil, sediment and surface water sampling program identified a low risk of contamination in soil at the Site,

Table 16 – Assessment of Decision Rules	
Decision	Rule
	however further management of isolated anthropogenic materials and asbestos will be required during. Therefore, a DSI is not required subject to implementation of the recommendations in this report.

9 Conceptual Site Model

A conceptual site model (CSM) has been developed based upon the information provided in previous sections of this report.

9.1 Contaminating Activities

The main contaminating activity to be undertaken at the Site is:

- Stockpiling and burial of anthropogenic materials.

9.2 Affected Media

The potential affected media at the Site are considered to be soil.

9.3 Human and Ecological Receptors

Sensitive receptors identified at and near the Site were considered to be:

- Future workers at the Site (ASC NEPM 2013 HIL D and HSL D – commercial/industrial).
- Future construction and sub-surface maintenance workers at the Site (ASC NEPM 2013 HIL D and HSL D – commercial/industrial; CRC CARE 2011 Direct contact and intrusive maintenance workers HSLs and Vapour Intrusion HSLs for Intrusive Maintenance Workers (Shallow Trench)).
- Residents of surrounding properties of the Site (ASC NEPM 2013 HIL A and HSL A – residential).
- Terrestrial fauna and flora at the Site and on adjoining land (ASC NEPM EIL and ESLs).
- Ecosystems dependent upon surface water bodies at the Site (ANZG 2018).

9.4 Potential and Complete Exposure Pathways

An analysis of the potential exposure pathways between the COPC and the identified human and ecological receptors are presented in **Table 17**.

Table 17 – Source-Pathway-Receptor Linkages

Sources				Pathways	Receptors	Linkages	Comments
Primary	Secondary	Contaminants	Affected Media	Exposure Pathways			
Stockpiling and burial of anthropogenic waste	Concentrations of CoPC in soil	TRH, BTEX, PAH, OCP, OPP, PCB and heavy metals	Soil	<u>Human Health</u> • Dermal contact • Incidental ingestion	• Future construction and sub-surface maintenance workers. • Future staff at the Site	Not complete	All results recorded below health-based criteria.
	hazardous materials	Asbestos	Soil	<u>Human Health</u> • Dermal contact • Incidental ingestion	• Future construction and sub-surface maintenance workers. • Future staff at the Site	Complete	Bonded (non-friable) fragment of asbestos containing material (ACM) identified at TP11.
	Concentrations of CoPC in soil	TRH, BTEX, PAH, OCP, OPP, PCB and heavy metals	Soil	<u>Ecological:</u> Uptake by flora and fauna	Terrestrial fauna and flora at the Site	Not complete	All results recorded below ecological based criteria.
	Presence of anthropogenic materials	Aesthetic	Soil	Visual amenity	• Future staff/visitors at the Site	Complete	-

10 Conclusion

This report presents the findings of a PSI undertaken at the Site, located at 56-76 Mandalong Road, Morisset, NSW. The Site is currently zoned as B7 Business Park and E2 Environmental Conservation and it is understood that the Site is proposed to be redeveloped into a Bulky Goods Centre. The Site is legally identified as Lot 11 and 12 in DP 777034 and Lot 2 in DP 529914 and is approximately 13 ha in area. The PSI comprised of a site history review and the collection of soil, sediment and surface water samples from a grid based and targeted sampling pattern across the Site.

The Site comprised of three irregular shaped lots situated to the north of Mandalong Road. The land use comprised of a mix of residential and commercial/business use. Vegetation across the Site comprised of large mature trees with smaller undergrowth predominately covering the north eastern portion of the Site. Large areas of cleared land were located in the southern areas of the Site around the residential properties. An overhead power easement dissects the Site running north east to south west. Two large dams were situated in the northern portion of the central lot.

Surrounding land uses comprised of environmental conservation zoned land adjacent to the north, Mandalong Road with Business Park zoned land to the south, Environmental Management and Business Park zoned land to the east and Environmental Management and Business Park zoned land to the west. Topographically the Site had gentle sloping gradients facing north west with elevations ranging from 15 metres above AHD in the south eastern portions to 2 m AHD in the north western corner. A small creek named Mullards Creek dissects the north western and north eastern corners of the Site and runs to the south west and south east on the adjacent land. Drainage at the Site is considered to consist of surface runoff migrating as overland flow towards the north western boundary of the Site.

The Site is underlain by the Triassic aged Narrabeen Group, which typically comprises sandstone, siltstone, conglomerate and claystone with most of the Site located within the Gorokan soil landscape and a small portion on the north west boundary located within Wyong soil landscape. The Lake Macquarie Local Environment Plan (LEP) (2014) identified most of the Site to be within a Class 5 acid sulfate soil classification, where acid sulfate soils are not typically found. It is noted a Class 2 area is located within 200 m north of the Site. One registered groundwater bore located on-site was used for domestic/stock purposes, with 13 registered bores located within 2km of the Site used for domestic/stock, monitoring and test purposes. The depth of the bores ranged from 3.6 to 234 m BGL with SWLs recorded between 8 and 16 m BGL. Porous and extensive aquifers of low to moderate productivity were identified at the Site. Regional groundwater flow direction is expected to be predominantly to the north east towards Lake Macquarie. The Site is located within the West Lake mining subsidence district.

Based on the review of the historical information, the Site has mostly been used for rural lifestyle purposes with the exception for a period between the early to mid 2000s when Lot 2 in DP 529914 was used for market garden purposes. A number of buildings had been constructed and removed from the Site with the most recent being the residential dwelling on Lot 11 DP 777024. Significant clearing of vegetation has occurred across the Site, mostly occurring from the 1950s to 1970s. Recent aerial photographs show stockpiled anthropogenic material in the south eastern corner of the Site on Lot 12 DP 777024. Surrounding land use comprised of native bushland or rural/agricultural land up until the early 2000s when significant commercial/industrial development began construction to the south of Mandalong Road.

Fieldwork comprised of a site walkover and collection of soil samples from 21 test pits and nine boreholes at grid and targeted based sampling locations across the Site to a maximum depth of 4.5 m BGL. Subsurface profile generally comprised of fill / topsoil overlying residual sandy clay/clayey sand overlying bedrock comprising of extremely weathered sandstone and siltstone. Several locations of stockpiled anthropogenic material were observed across the Site. There was no visual or olfactory evidence of hydrocarbon or other contamination.

Results of analytical testing of soil samples reported concentration of the COPC below laboratory LOR or adopted health and/or ecological based criteria in all samples collected except for a bonded (non-friable) fragment of ACM reported on the surface at TP11. Elevated TAA concentrations for the chromium reducible sulfur suite analysis were reported in excess of the adopted action criteria for coarse textured soils, should more than 1,000 tonnes of soil be disturbed. However, based upon visual inspection of the soil during sampling, no jarosite was identified in the soil sample and that the pH_{KCL} was reported above 4.5, calculation of KCl and HCl extractable sulfur was not undertaken in accordance with laboratory protocols, indicating that there is likely to be negligible sulfur present in the sample. Therefore, as there is no correlation between the TAA and the sulfur present, the soil is considered to be naturally occurring acidic soil rather than actual ASS material.

Three surface water and sediment samples were collected from Mullards Creek and the two dams located at the Site. All results of analytical testing reported below the adopted criteria except for elevated copper and zinc reported above freshwater criteria and detectable *E. Coli* and faecal coliforms reported above drinking water criteria at all samples locations. The elevated copper and zinc reported in the water sample collected from Mullards Creek was reported only marginally over the adopted freshwater guidelines and therefore considered to be likely representative of background concentrations and unlikely to present a human health or ecological risk to users of the creeks. The microbiological impact reported in the sample from Mullards Creek is likely to be attributable to the larger catchment and not representative of a contamination issue at the Site due to concentrations in the water samples collected from the dams reported at considerably lower concentrations and the negligible microbiological impact observed in soil samples collected across the Site. The elevated copper, zinc and microbiological concentrations reported in the dam samples do not appear to be representative of a larger contamination issue at the Site and with the dams from which these samples were collected are likely to be dewatered and filled in the Proposed Development and therefore unlikely to present a future ecological risk at the Site.

Based on the results of the Site history review, site inspection and analytical results, the Site is considered to present a low risk of contamination. The results of analytical testing have been reported at levels that would not preclude the proposed future use of the site as a general commercial land use, subject to completion of the recommended works in **Section 11**.

11 Recommendations

In order to address minor issues at the Site, EP Risk recommends that the following management works are undertaken:

- Removal and disposal of anthropogenic waste in areas identified in **Figure 2**.
- Emu picking of bonded (non-friable) ACM fragments in the vicinity of TP11.
- An unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be identified during the proposed redevelopment works.

Figures



Figure 1 – Site Location

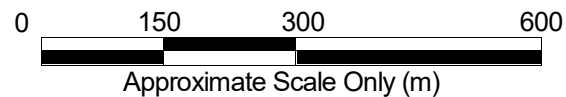


Figure 2 – Areas of Environmental Concern





Figure 3 – Sampling Locations

Analytical Tables

		Sample ID/Depth (m BGL):	NEPM Screen 01	NEPM Screen 02
		Sample date:	27/01/2021	27/01/2021
		Soil description	FILL: sandy GRAVEL	TOPSOIL: sandy SILT
Analyte grouping/	Analyte	Units		
pH in soil using 0.01M CaCl extract	pH (CaCl ₂)	pH Unit	8.2	4.4
pH 1:5 (Soils)	pH Value	pH Unit	9	5
Conductivity (1:5)	Electrical Conductivity @ 25Å°C	ÅµS/cm	196	8
Soil Classification based on Particle Size	Clay (<2 Åµm)	%	23	8
Soil Particle Density	Soil Particle Density (Clay/Silt/Sand)	g/cm ³	2.53	2.61
Exchangeable Cations on Alkaline Soils	Exchangeable Calcium	meq/100g	6.5	-
	Exchangeable Magnesium	meq/100g	3.6	-
	Exchangeable Potassium	meq/100g	0.5	-
	Exchangeable Sodium	meq/100g	1.9	-
	Cation Exchange Capacity	meq/100g	12.5	-
	Exchangeable Sodium Percent	%	15.1	-
Exchangeable Cations	Exchangeable Calcium	meq/100g	-	<0.1
	Exchangeable Magnesium	meq/100g	-	0.2
	Exchangeable Potassium	meq/100g	-	<0.1
	Exchangeable Sodium	meq/100g	-	<0.1
	Cation Exchange Capacity	meq/100g	-	0.4
	Exchangeable Sodium Percent	%	-	12.4
Total Metal	Iron	%	2.62	0.199
Organic Matter	Organic Matter	%	2.6	0.9
	Total Organic Carbon	%	1.5	0.5

[illegible]

[illegible]

[illegible]

							Sample ID/Depth (m BGL)	TP01 0.5	TP02 1.0	TP04 0.2	TP05 0.1	TP06 0.1	
							Sample date:	27/03/2021	27/03/2021	27/03/2021	27/03/2021	27/03/2021	
							Sample Description	FILL: sandy SILT	FILL: sandy SILT	TOPSOIL	TOPSOIL	silty SAND	
							NEPM 2013 Management Limits Commercial, Fine/Coarse Soil	All results in mg/kg					
Analyte grouping/	Analyte	NEPM 2013 HIL D	NEPM 2013 Soil HSL D for Vapour Intrusion		NEPM 2013 ESIs for Commercial, Fine/Coarse Soil	NEPM 2013 EILs Commercial/Industrial	CRC Care (2011) HSL D Direct Contact	CRC Care (2011) Intrusive Maintenance Worker					
			0-1m Silt	0-1m Sand					0-2m	0-2m	0-2m		
PAH	Naphthalene									<0.5	<0.5	<0.5	
	Acenaphthylene									<0.5	<0.5	<0.5	
	Acenaphthene									<0.5	<0.5	<0.5	
	Fluorene									<0.5	<0.5	<0.5	
	Phenanthrene									<0.5	<0.5	<0.5	
	Anthracene									<0.5	<0.5	<0.5	
	Fluoranthene									<0.5	<0.5	<0.5	
	Pyrene									<0.5	<0.5	<0.5	
	Benzo[a]anthracene									<0.5	<0.5	<0.5	
	Chrysene									<0.5	<0.5	<0.5	
	Benzo[b]fluoranthene									<0.5	<0.5	<0.5	
	Benzo[k]fluoranthene									<0.5	<0.5	<0.5	
	Benzo[a]pyrene				1.4					<0.5	<0.5	<0.5	
	Indeno[1,2,3-cd]pyrene									<0.5	<0.5	<0.5	
	Dibenz[a,h]anthracene									<0.5	<0.5	<0.5	
	Benzo[e,h]perylene									<0.5	<0.5	<0.5	
	Sum of polycyclic aromatic hydrocarbons	4000								<0.5	<0.5	<0.5	
	Benzo[a]pyrene TEQ (IQR)	40								<0.5	<0.5	<0.5	
	Benzo[a]pyrene TEQ (half IQR)					0.6	0.6	0.6	0.6	0.6	0.6	0.6	
	Benzo[a]pyrene TEQ (LOD)					1.2	1.2	1.2	1.2	1.2	1.2	1.2	
	Total Petroleum Hydrocarbons										<10	<10	<10
		C6 - C9 Fraction									<50	<50	<50
		C10 - C14 Fraction									<100	<100	<100
	C15 - C28 Fraction									<100	<100	<100	
	C29 - C36 Fraction									<100	<100	<100	
	C10 - C36 Fraction (sum)									<50	<50	<50	
Total Recoverable Hydrocarbons - NEPM 2013 Fractions										<10	<10	<10	
	C6 - C10 Fraction						26,000	82,000		800/700	<10	<10	
	C6 - C10 Fraction minus BTEX (F1)	250	260	215			<10	<10		<10	<10	<10	
	>C10 - C16 Fraction						20,000	62,000	1000	<50	<50	<50	
	>C16 - C34 Fraction				2500/1700		27,000	85,000	5,000/3,500	<100	<100	<100	
	>C34 - C40 Fraction				6600/3300		38,000	120,000	10,000	<100	<100	<100	
	>C10 - C40 Fraction (sum)						<50	<50	<50	<50	<50	<50	
	>C10 - C16 Fraction minus Naphthalene (F2)	NL	NL	170			<50	<50	<50	<50	<50	<50	
BTEXN	Benzene	4	3	95/75			430	1,100		<0.2	<0.2	<0.2	
	Toluene	NL	NL	135			99,000	120,000		<0.5	<0.5	<0.5	
	Ethylbenzene	NL	NL	185/165			27,000	85,000		<0.5	<0.5	<0.5	
	meta- & para-Xylene									<0.5	<0.5	<0.5	
	ortho-Xylene	NL	NL	95/180						<0.5	<0.5	<0.5	
	Total Xylenes		230	95/180			81,000	130,000		<0.5	<0.5	<0.5	
	Sum of BTEX						<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
	Naphthalene	NL	NL				370	11,000	29,000	<1	<1	<1	

										Sample ID/Depth (m BGL)	TP07 0.1	TP09 0.1	TP10 0.1	TP11 0.1	TP13 0.1
										Sample date:	27/03/2021	27/03/2021	27/03/2021	27/03/2021	27/03/2021
										Sample Description	FILL: sandy GRAVEL	TOPSOIL	TOPSOIL	FILL: sandy SILT	TOPSOIL
										NEPM 2013 Management Limits Commercial, Fine/Coarse Soil	All results in mg/kg				
Analyte grouping/	Analyte	NEPM 2013 HIL D	NEPM 2013 Soil HSL D for Vapour Intrusion		NEPM 2013 ESLs for Commercial, Fine/Coarse Soil	NEPM 2013 ELs Commercial/Industrial	CRC Care (2011) HSL D Direct Contact	CRC Care (2011) Intrusive Maintenance Worker	NEPM 2013 Management Limits Commercial, Fine/Coarse Soil	All results in mg/kg					
			0-1m Silt	0-1m Sand						0-2m	0-2m	0-2m			
PAH	Naphthalene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Acenaphthylene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Acenaphthene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Fluorene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Phenanthrene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Anthracene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Fluoranthene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Pyrene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo[a]anthracene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Chrysene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo[b]fluoranthene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo[k]fluoranthene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo[a]pyrene				1.4					<0.5	<0.5	<0.5	<0.5	<0.5	
	Indeno[1,2,3-cd]pyrene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Dibenz[a,h]anthracene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo[e]hispylelene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Sum of polycyclic aromatic hydrocarbons	4000								<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo[a]pyrene TEQ (zero)	40								<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo[a]pyrene TEQ (half LOH)					0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
	Benzo[a]pyrene TEQ (LOH)									1.2	1.2	1.2	1.2	1.2	
	Total Petroleum Hydrocarbons	C6 - C9 Fraction									<10	<10	<10	<10	<10
		C10 - C14 Fraction									<50	<50	<50	<50	<50
		C15 - C28 Fraction									<100	<100	<100	<100	<100
		C29 - C36 Fraction									<100	<100	<100	<100	<100
		C10 - C36 Fraction (sum)									<50	<50	<50	<50	<50
Total Recoverable Hydrocarbons - NEPM 2013 Fractions	C6 - C10 Fraction					26,000	82,000	800/700		<10	<10	<10	<10	<10	
	C6 - C10 Fraction minus BTEX (F1)	250	260	215		<10	<10	<10	<10	<10	<10	<10	<10	<10	
	>C10 - C16 Fraction					20,000	62,000	3000		<50	<50	<50	<50	<50	
	>C16 - C34 Fraction				2500/1700	27,000	85,000	5,000/3,500		<100	<100	<100	<100	<100	
	>C34 - C40 Fraction				6600/3800	38,000	120,000	10,000		<100	<100	<100	<100	<100	
	>C10 - C40 Fraction (sum)					<50	<50	<50	<50	<50	<50	<50	<50	<50	
	>C10 - C16 Fraction minus Naphthalene (F2)	NL	NL	170		<50	<50	<50	<50	<50	<50	<50	<50	<50	
BTEXN	Benzene	4	3	95/75		430	1,100			<0.2	<0.2	<0.2	<0.2	<0.2	
	Toluene	NL	NL	135		99,000	120,000			<0.5	<0.5	<0.5	<0.5	<0.5	
	Ethylbenzene	NL	NL	185/165		27,000	85,000			<0.5	<0.5	<0.5	<0.5	<0.5	
	meta- & para-Xylene									<0.5	<0.5	<0.5	<0.5	<0.5	
	ortho-Xylene									<0.5	<0.5	<0.5	<0.5	<0.5	
	Total Xylenes		230	95/180		81,000	130,000			<0.5	<0.5	<0.5	<0.5	<0.5	
	Sum of BTEX					<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
	Naphthalene	NL	NL			370	11,000	29,000		<1	<1	<1	<1	<1	

									Sample ID/Depth (m BGL)	TP16 0.1	TP20 0.1	BH01 0.05	BH02 0.05	BH03 0.05	BH04 0.05	
									Sample date:	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021	
									Sample Description	TOPSOIL	FILL: sandy SILT	TOPSOIL	TOPSOIL	TOPSOIL	TOPSOIL	
									NEPM 2013 Management Limits Commercial, Fine/Coarse Soil	All results in mg/kg						
Analyte grouping/	Analyte	NEPM 2013 HLD	NEPM 2013 Soil HSL D for Vapour Intrusion		NEPM 2013 ESLs for Commercial, Fine/Coarse Soil	NEPM 2013 ELs Commercial/Industrial	CRC Care (2011) HSL D Direct Contact	CRC Care (2011) Intrusive Maintenance Worker	NEPM 2013 Management Limits Commercial, Fine/Coarse Soil	All results in mg/kg						
			0-1m silt	0-1m Sand						0-2m	0-2m	0-2m				
PAH	Naphthalene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Acenaphthylene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Acenaphthene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Dibenzene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Phenanthrene									<0.5	0.8	<0.5	<0.5	<0.5	<0.5	
	Anthracene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Fluoranthene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Pyrene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Benz[a]anthracene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Chrysene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzofluoranthene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzokjfluoranthene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzolaperyene				1.4					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Indeno[1,2,3-cd]pyrene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Dibenz[a,h]anthracene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzog[h]perylene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Sum of polycyclic aromatic hydrocarbons	4000								<0.5	0.9	<0.5	<0.5	<0.5	<0.5	
	Benzolaperyene TEQ (Izoo)	40								<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzolaperyene TEQ (half LOR)									0.6	0.6	0.6	0.6	0.6	0.6	
	Benzolaperyene TEQ (LOR)									1.2	1.2	1.2	1.2	1.2	1.2	
	Total Petroleum Hydrocarbons										<10	<10	<10	<10	<10	<10
	C6 - C9 Fraction									<50	<50	<50	<50	<50	<50	
	C10 - C14 Fraction									<100	<100	<100	<100	<100	<100	
	C15 - C28 Fraction									<100	<100	<100	<100	<100	<100	
	C29 - C35 Fraction									<100	<100	<100	<100	<100	<100	
	C10 - C36 Fraction (sum)									<50	130	<50	<50	<50	<50	
Total Recoverable Hydrocarbons - NEPM 2013 Fractions										<10	12	<10	<10	<10	<10	
	C6 - C10 Fraction	250			215		26,000	82,000	800/700	<10	12	<10	<10	<10	<10	
	C6 - C10 Fraction minus BTEX (F1)		260				<10	<10	<10	<10	<10	<10	<10	<10	<10	
	>C10 - C16 Fraction					20,000	62,000	1000		<50	<50	<50	<50	<50	<50	
	>C16 - C34 Fraction				2500/1700	27,000	85,000	5,000/3,500		<100	150	<100	<100	<100	<100	
	>C34 - C40 Fraction				6600/3300	38,000	120,000	10,000		<100	<100	<100	<100	<100	<100	
	>C40 - C40 Fraction (sum)					<50	<50	<50		<50	<50	<50	<50	<50	<50	
	>C10 - C16 Fraction minus Naphthalene (F2)	NL	NL		170		<50	<50		<50	<50	<50	<50	<50	<50	
BTEXN	Benzene	4	3		95/75		430	1,100		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
	Toluene	NL	NL		135		99,000	120,000		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Ethylbenzene	NL	NL		185/165		27,000	85,000		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	meta- & para-Xylene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	ortho-Xylene									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Total Xylenes									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Sum of BTEX	NL	230		95/180		81,000	130,000		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
	Naphthalene		NL	NL			370	11,000	29,000		<1	<1	<1	<1	<1	<1

										Sample ID/Depth (m BGL)		BH05 0.05	BH06 0.05	BH07 0.05	BH08 0.05	BH09 0.6
										Sample date:		TOPSOIL	TOPSOIL	TOPSOIL	TOPSOIL	TOPSOIL
										Sample Description		TOPSOIL	TOPSOIL	TOPSOIL	TOPSOIL	TOPSOIL
Analyte grouping/	Analyte	NEPM 2013 HIL D	NEPM 2013 Soil HSL D for Vapour Intrusion		NEPM 2013 ESLs for Commercial, Fine/Coarse Soil	NEPM 2013 ELs Commercial/Industrial	CRC Care (2011) HSL D Direct Contact	CRC Care (2011) Intrusive Maintenance Worker	NEPM 2013 Management Limits Commercial, Fine/Coarse Soil	All results in mg/kg						
			0-1m	0-1m												
			Silt	Sand												
PAH	Naphthalene			0-2m				0-2m		0-2m	<0.5	<0.5	<0.5	<0.5	<0.5	
	Acenaphthylene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Acenaphthene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Fluorene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Phenanthrene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Anthracene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Fluoranthene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Pyrene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Benz(a)anthracene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Chrysene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo(b)fluoranthene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo(k)fluoranthene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo(a)pyrene				1.4						<0.5	<0.5	<0.5	<0.5	<0.5	
	Indeno(1,2,3-cd)pyrene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Dibenz(a,h)anthracene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo(e,h)pyrene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Sum of polycyclic aromatic hydrocarbons	4000									<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo(a)pyrene TEQ (zero)	40									<0.5	<0.5	<0.5	<0.5	<0.5	
	Benzo(a)pyrene TEQ (half LOB)										0.6	0.6	0.6	0.6	0.6	
	Benzo(a)pyrene TEQ (LOB)										1.2	1.2	1.2	1.2	1.2	
Total Petroleum Hydrocarbons	C6 - C9 Fraction										<10	<10	<10	<10	<10	
	C10 - C14 Fraction										<50	<50	<50	<50	<50	
	C15 - C28 Fraction										<100	<100	<100	<100	<100	
	C29 - C36 Fraction										<100	<100	<100	<100	<100	
	C10 - C36 Fraction (sum)										<50	<50	<50	<50	<50	
Total Recoverable Hydrocarbons - NEPM 2013 Fractions	C6 - C10 Fraction						26,000	82,000	800/700		<10	<10	<10	<10	<10	
	C6 - C10 Fraction minus BTX (F1)		250	260	215						<10	<10	<10	<10	<10	
	>C10 - C16 Fraction						20,000	62,000	1000		<50	<50	<50	<50	<50	
	>C16 - C34 Fraction					2500/1700	27,000	85,000	5,000/3,500		<100	<100	<100	<100	<100	
	>C34 - C40 Fraction					6600/3300	38,000	120,000	10,000		<100	<100	<100	<100	<100	
	>C10 - C40 Fraction (sum)						<50	<50	<50		<50	<50	<50	<50	<50	
	>C10 - C16 Fraction minus Naphthalene (F2)		NL	NL	170						<50	<50	<50	<50	<50	
BTXN	Benzene		4	3	95/75		430	1,100			<0.2	<0.2	<0.2	<0.2	<0.2	
	Toluene		NL	NL	135		99,000	120,000			<0.5	<0.5	<0.5	<0.5	<0.5	
	Ethylbenzene		NL	NL	185/165		27,000	85,000			<0.5	<0.5	<0.5	<0.5	<0.5	
	meta- & para-Xylene										<0.5	<0.5	<0.5	<0.5	<0.5	
	ortho-Xylene										<0.5	<0.5	<0.5	<0.5	<0.5	
	Total Xylenes		NL	230	95/180		81,000	130,000			<0.5	<0.5	<0.5	<0.5	<0.5	
	Sum of BTX						<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	
	Naphthalene		NL	NL		370	11,000	29,000			<1	<1	<1	<1	<1	

		Sample ID/Depth (m BGL):	SED_01	SED_02	SED_03	Micro_01	Micro_02	Micro_03	Micro_04	Micro_05	Micro_06
		Sample date:	14/01/2021	14/01/2021	14/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
		NSW EPA 2000 Grade A	All results in MPN/g								
Analyte grouping/	Analyte										
Faecal Coliforms & E.coli	Faecal Coliforms	<1000	30	< 10	< 10	14	2	1000	18	<2	36
	E. coli	<100	41	41	< 10	14	2	1000	18	<2	36

			Sample ID:	ACM_ID_01	ACM_ID_02	ACM_001	ACM_002	ACM_003	ACM_004	ACM_005
			Sample date:	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
			NEPM 2013 HSL D Soil							
Analyste group(s)	Analyste	Units								
AS 4964 - 2004 Identification of Asbestos in Soils	Asbestos Detected	g/kg	0.01	-	-	No	No	No	No	No
	Asbestos (Trace)	Fibres		-	-	No	No	No	No	No
	Asbestos Type	--		-	-	-	-	-	-	-
	Synthetic Mineral Fibre	g/kg		-	-	No	No	No	No	No
	Organic Fibre	g/kg		-	-	No	No	No	No	No
	Sample weight (dry)	g		425	549	444	903	386		
	Description			-	-	Mid brown soil.	Mid brown soil.	Mid brown soil.	Mid brown soil.	Mid brown soil.
	Asbestos (Fines and Fibrous <7mm)	g		-	-	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Asbestos (Fines and Fibrous FA+AF)	% (w/w)	0.001		-	<0.001	<0.001	<0.001	<0.001	<0.001	
Weight Used for % Calculation	kg			-	0.425	0.549	0.444	0.903	0.386	
Fibrous Asbestos >7mm	g		-	-	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	
AS 4964 - 2004 Identification of Asbestos in bulk samples	Asbestos Detected	g/kg	presence	Yes	No					
	Asbestos Type	--		Ch	-					
	Asbestos (Trace)	Fibres		N/A	No					
	Synthetic Mineral Fibre	g/kg		No	No					
	Organic Fibre	g/kg		No	No					
	Sample weight (dry)	g		75	7.45					
	Description			One piece of asbestos cement sheeting approximately 120x80x5mm.	Two pieces of cement sheeting.					

		Sample ID:	RW102
		Sample date:	27/01/2021
Analyte grouping/	Analyte	Units	
Total Metals	Arsenic	mg/L	<0.001
	Cadmium	mg/L	<0.0001
	Chromium	mg/L	<0.001
	Copper	mg/L	<0.001
	Lead	mg/L	<0.001
	Mercury	mg/L	<0.0001
	Nickel	mg/L	<0.001
	Zinc	mg/L	<0.005
Polychlorinated Biphenyls (PCB)	Total Polychlorinated biphenyls	Âµg/L	<1
Organochlorine Pesticides (OC)	alpha-BHC	Âµg/L	<0.5
	Hexachlorobenzene (HCB)	Âµg/L	<0.5
	beta-BHC	Âµg/L	<0.5
	gamma-BHC	Âµg/L	<0.5
	delta-BHC	Âµg/L	<0.5
	Heptachlor	Âµg/L	<0.5
	Aldrin	Âµg/L	<0.5
	Heptachlor epoxide	Âµg/L	<0.5
	trans-Chlordane	Âµg/L	<0.5
	alpha-Endosulfan	Âµg/L	<0.5
	cis-Chlordane	Âµg/L	<0.5
	Dieldrin	Âµg/L	<0.5
	4,4'-DDE	Âµg/L	<0.5
	Endrin	Âµg/L	<0.5
	beta-Endosulfan	Âµg/L	<0.5
	4,4'-DDD	Âµg/L	<0.5
	Endrin aldehyde	Âµg/L	<0.5
	Endosulfan sulfate	Âµg/L	<0.5
	4,4'-DDT	Âµg/L	<2.0
	Endrin ketone	Âµg/L	<0.5
	Methoxychlor	Âµg/L	<2.0
	Total Chlordane (sum)	Âµg/L	<0.5
	Sum of DDD + DDE + DDT	Âµg/L	<0.5
	Sum of Aldrin + Dieldrin	Âµg/L	<0.5
Organophosphorus Pesticides (OP)	Dichlorvos	Âµg/L	<0.5
	Demeton-S-methyl	Âµg/L	<0.5
	Monocrotophos	Âµg/L	<2.0
	Dimethoate	Âµg/L	<0.5
	Diazinon	Âµg/L	<0.5
	Chlorpyrifos-methyl	Âµg/L	<0.5
	Parathion-methyl	Âµg/L	<2.0
	Malathion	Âµg/L	<0.5
	Fenthion	Âµg/L	<0.5
	Chlorpyrifos	Âµg/L	<0.5
	Parathion	Âµg/L	<2.0
	Pirimphos-ethyl	Âµg/L	<0.5
	Chlorfenvinphos	Âµg/L	<0.5
	Bromophos-ethyl	Âµg/L	<0.5
	Fenamiphos	Âµg/L	<0.5
	Prothiofos	Âµg/L	<0.5
	Ethion	Âµg/L	<0.5
	Carbophenothion	Âµg/L	<0.5
	Azinphos Methyl	Âµg/L	<0.5

		Sample ID:	RW102
		Sample date:	27/01/2021
Analyte grouping/	Analyte	Units	
Polynuclear Aromatic Hydrocarbons	Naphthalene	Âµg/L	<1.0
	Acenaphthylene	Âµg/L	<1.0
	Acenaphthene	Âµg/L	<1.0
	Fluorene	Âµg/L	<1.0
	Phenanthrene	Âµg/L	<1.0
	Anthracene	Âµg/L	<1.0
	Fluoranthene	Âµg/L	<1.0
	Pyrene	Âµg/L	<1.0
	Benzo(a)anthracene	Âµg/L	<1.0
	Chrysene	Âµg/L	<1.0
	Benzo(b+j)fluoranthene	Âµg/L	<1.0
	Benzo(k)fluoranthene	Âµg/L	<1.0
	Benzo(a)pyrene	Âµg/L	<0.5
	Indeno(1.2.3.cd)pyrene	Âµg/L	<1.0
	Dibenz(a,h)anthracene	Âµg/L	<1.0
	Benzo(g,h,i)perylene	Âµg/L	<1.0
	Sum of polycyclic aromatic hydrocarbons	Âµg/L	<0.5
	Benzo(a)pyrene TEQ (zero)	Âµg/L	<0.5
Total Petroleum Hydrocarbons	C6 - C9 Fraction	Âµg/L	<20
	C10 - C14 Fraction	Âµg/L	<50
	C15 - C28 Fraction	Âµg/L	<100
	C29 - C36 Fraction	Âµg/L	<50
	C10 - C36 Fraction (sum)	Âµg/L	<50
Total Recoverable Hydrocarbons - NEPM 2013 Fractions	C6 - C10 Fraction	Âµg/L	<20
	C6 - C10 Fraction minus BTEX (F1)	Âµg/L	<20
	>C10 - C16 Fraction	Âµg/L	<100
	>C16 - C34 Fraction	Âµg/L	<100
	>C34 - C40 Fraction	Âµg/L	<100
	>C10 - C40 Fraction (sum)	Âµg/L	<100
	>C10 - C16 Fraction minus Naphthalene (F2)	Âµg/L	<100
BTEXN	Benzene	Âµg/L	<1
	Toluene	Âµg/L	<2
	Ethylbenzene	Âµg/L	<2
	meta- & para-Xylene	Âµg/L	<2
	ortho-Xylene	Âµg/L	<2
	Total Xylenes	Âµg/L	<2
	Sum of BTEX	Âµg/L	<1
	Naphthalene	Âµg/L	<5

			Sample ID:	ASS01	ASS02	ASS03	ASS04	ASS05
			Sample date:	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
			Description:	clayey SAND	clayey SAND	clayey SAND	clayey SAND	clayey SAND
			NSW ASS Manual 1998 Coarse Texture					
Analyte grouping	Analyte	Units	>1000 tonnes Disturbed					
Actual Acidity	pH KCl (23A)	pH Unit		4.9	4.7	4.6	5.2	5.3
	Titrateable Actual Acidity (23F)	mole H+ / t	18	5	26	9	3	3
	sulfidic - Titrateable Actual Acidity (s-23F)	% pyrite S		<0.02	0.04	<0.02	<0.02	<0.02
Potential Acidity	Chromium Reducible Sulfur (22B)	% S	0.03	0.007	0.022	0.019	0.012	0.017
	acidity - Chromium Reducible Sulfur (a-22B)	mole H+ / t		<10	14	12	<10	11
Acid Base Accounting	ANC Fineness Factor	-		1.5	1.5	1.5	1.5	1.5
	Net Acidity (sulfur units)	% S		<0.02	0.06	0.03	<0.02	0.02
	Net Acidity (acidity units)	mole H+ / t		<10	40	20	11	13
	Liming Rate	kg CaCO3/t		<1	3	2	<1	1
	Net Acidity excluding ANC (sulfur units)	% S		<0.02	0.06	0.03	<0.02	0.02
	Net Acidity excluding ANC (acidity units)	mole H+ / t		<10	40	20	11	13
	Liming Rate excluding ANC	kg CaCO3/t		<1	3	2	<1	1

Sample ID/Depth (m BGL):		T1920 0.1	QC01	RPD %	QC02	RPD %	B1031 0.05	QC03	RPD %	QC04	RPD %
Sample date:		27/01/2021	27/01/2021		27/01/2021		27/01/2021	27/01/2021		27/01/2021	
Analyte grouping:											
Analyte											
Total Metal	Arsenic	13	8.8	39%	12	8%	<5	4.6	-	<5	0%
	Cadmium	<1	<0.4	0%	<1	0%	<1	<0.4	0%	<1	0%
	Chromium	6	5.6	7%	3	67%	4	8.6	73%	6	40%
	Copper	37	24	43%	16	79%	<5	<5	0%	<5	0%
	Lead	47	31	41%	31	41%	5	5.5	10%	11	73%
	Mercury	0.2	0.2	0%	0.1	0%	<0.1	<0.1	0%	<0.1	0%
	Nickel	7	8	13%	6	15%	<2	<5	0%	<2	0%
	Zinc	273	110	83%	126	76%	8	4.2	23%	6	29%
Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls		<0.1	<0.5	0%	<0.1	0%	<0.1	<0.5	0%	<0.1	0%
Organochlorine Pesticides (OC)	alpha-BHC	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Heachlorobenzene (HCB)	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	beta-BHC	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	gamma-BHC	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	delta-BHC	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Heptachlor	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Aldrin	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Heptachlor epoxide	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Total Chlordane (sum)	<0.05	<0.1	0%	<0.05	0%	<0.05	<0.1	0%	<0.05	0%
	trans-Chlordane	<0.05		0%	<0.05	0%	<0.05		0%	<0.05	0%
	alpha-Endosulfan	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	cis-Chlordane	<0.05	-	0%	<0.05	0%	<0.05	-	0%	<0.05	0%
	Dieldrin	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	1,4'-DDE	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Endrin	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Endosulfan (sum)	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	beta-Endosulfan	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	1,4'-DDD	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Endrin aldehyde	<0.05	<0.1	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Endosulfan sulfate	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	1,4'-DDT	<0.2	<0.05	0%	<0.2	0%	<0.2	<0.05	0%	<0.2	0%
	Endrin ketone	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Methoxychlor	<0.2	<0.2	0%	<0.2	0%	<0.2	<0.2	0%	<0.2	0%
	Sum of DDE + DDE + DDT	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
	Sum of Aldrin + Dieldrin	<0.05	<0.05	0%	<0.05	0%	<0.05	<0.05	0%	<0.05	0%
Organophosphorus Pesticides (OP)	Disulfoton	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Demeton S-methyl	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Monocrotophos	<0.2	<2	0%	<0.2	0%	<0.2	<2	0%	<0.2	0%
	Demethoate	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Diazinon	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Chlorpyrifos-methyl	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Parathion-methyl	<0.2	<0.2	0%	<0.2	0%	<0.2	-	0%	<0.2	0%
	Malathion	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Fenitrothion	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Chlorpyrifos	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Parathion	<0.2	-	0%	<0.2	0%	<0.2	-	0%	<0.2	0%
	Priniphos-ethyl	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Chlorfenvinphos	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Bromophos-ethyl	<0.05	-	0%	<0.05	0%	<0.05	-	0%	<0.05	0%
	Fenamiphos	<0.05	-	0%	<0.05	0%	<0.05	-	0%	<0.05	0%
	Prothiofos	<0.05	-	0%	<0.05	0%	<0.05	-	0%	<0.05	0%
	Ethion	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%
	Carbophenothion	<0.05		0%	<0.05	0%	<0.05		0%	<0.05	0%
	Azinphos Methyl	<0.05	<0.2	0%	<0.05	0%	<0.05	<0.2	0%	<0.05	0%

Sample ID/Depth (m BGL):		TP20 0.1	QC01	RPD %	QC02	RPD %	BH03 0.05	QC03	RPD %	QC04	RPD %
Sample date:		27/01/2021	27/01/2021		27/01/2021		27/01/2021	27/01/2021		27/01/2021	
Analyte grouping/											
PAH	Naphthalene	<0.5	<0.5	0%	0.8	0%	<0.5	<0.5	0%	<0.5	0%
	Acenaphthylene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Acenaphthene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Fluorene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Phenanthrene	0.9	1	11%	1.1	20%	<0.5	<0.5	0%	<0.5	0%
	Anthracene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Fluoranthene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Pyrene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Benz[a]anthracene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Chrysene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Benz[b]fluoranthene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Benz[k]fluoranthene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Benzol[a]pyrene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Indeno[1,2,3-cd]pyrene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Dibenz[a,h]anthracene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Benzof[ghi]perylene	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Sum of polycyclic aromatic hydrocarbons	0.9	1	11%	1.9	71%	<0.5	<0.5	0%	<0.5	0%
	Benzol[a]pyrene TEQ (total)	<0.5	<0.5	0%	<0.5	0%	<0.5	<0.5	0%	<0.5	0%
	Benzol[a]pyrene TEQ (half LOR)	0.6	0.6	0%	0.6	0%	0.6	0.6	0%	0.6	0%
	Benzol[a]pyrene TEQ (LOR)	1.2	1.2	0%	1.2	0%	1.2	1.2	0%	1.2	0%
	C8 - C9 Fraction	10	<20	0%	<10	0%	<10	<20	0%	<10	0%
	C10 - C14 Fraction	<50	11	0%	<50	0%	<50	<20	0%	<50	0%
	C15 - C28 Fraction	130	150	14%	160	21%	<100	<50	0%	<100	0%
	C29 - C36 Fraction	<100	<50	0%	<100	0%	<100	62	0%	<100	0%
	C10 - C16 Fraction (sum)	130	183	34%	160	21%	<50	62	0%	<50	0%
Total Recoverable Hydrocarbons - NEPM 2013 Fractions	C8 - C10 Fraction	12	<20	-	<10	0%	<10	<20	0%	<10	0%
	C8 - C10 Fraction minus BTEX (F1)	12	<20	-	<10	0%	<10	<20	0%	<10	0%
	>C10 - C16 Fraction	<50	<50	0%	<50	0%	<50	<50	0%	<50	0%
	>C16 - C34 Fraction	150	190	24%	180	18%	<100	<100	0%	<100	0%
	>C34 - C40 Fraction	<100	<100	0%	<100	0%	<100	<100	0%	<100	0%
	>C10 - C40 Fraction (sum)	150	190	24%	180	18%	<50	<100	0%	<50	0%
	>C10 - C16 Fraction minus Naphthalene (F2)	<50	<50	0%	<50	0%	<50	<50	0%	<50	0%
BTEXN	Benzene	<0.2	<0.1	0%	<0.2	0%	<0.2	<0.1	0%	<0.2	0%
	Toluene	<0.5	<1	0%	<0.5	0%	<0.5	<1	0%	<0.5	0%
	Ethylbenzene	<0.5	<0.1	0%	<0.5	0%	<0.5	<0.1	0%	<0.5	0%
	meta- & para-Xylene	<0.5	<0.2	0%	<0.5	0%	<0.5	<0.2	0%	<0.5	0%
	ortho-Xylene	<0.5	<0.1	0%	<0.5	0%	<0.5	<0.1	0%	<0.5	0%
	Total Xylenes	<0.5	<0.3	0%	<0.5	0%	<0.5	<0.3	0%	<0.5	-
	Sum of BTEX	<0.2	-	-	<0.2	-	<0.2	-	-	<0.2	0%
	Naphthalene	<1	<0.5	0%	<1	0%	<1	<0.5	0%	<1	0%

			Sample ID:	SED 01	SED 02	SED 03	
			Sample date:	14/01/2021	14/01/2021	14/01/2021	
			ANZG 2018 Sediment Default Guideline Values (DGVs)	ANZG 2018 Sediment Guideline Values (GVs-high)			
Analyte grouping	Analyte	Units					
Heavy Metals (1M HCl Extract)	Arsenic (1M HCl extract)	mg/kg	20	70	3.4	3.6	< 2
	Cadmium (1M HCl extract)	mg/kg	1.5	10	< 0.4	< 0.4	< 0.4
	Chromium (1M HCl extract)	mg/kg	80	370	< 5	< 5	< 5
	Copper (1M HCl extract)	mg/kg	65	270	15	21	< 5
	Lead (1M HCl extract)	mg/kg	50	220	21	20	< 5
	Mercury (1M HCl extract)*	mg/kg	0.15	1	< 0.1	< 0.1	< 0.1
	Nickel (1M HCl extract)	mg/kg	21	52	< 5	< 5	< 5
	Zinc (1M HCl extract)	mg/kg	200	410	140	150	< 5
Organochlorine Pesticides (Trace level)	4,4'-DDD	mg/kg	0.0035	0.009	< 0.005	< 0.005	< 0.005
	4,4'-DDE	mg/kg	0.0014	0.007	< 0.005	< 0.005	< 0.005
	4,4'-DDT	mg/kg	0.0012	0.005	< 0.005	< 0.005	< 0.005
	a-BHC	mg/kg			< 0.005	< 0.005	< 0.005
	Aldrin	mg/kg			< 0.005	< 0.005	< 0.005
	Aldrin and Dieldrin (Total)*	mg/kg			< 0.005	< 0.005	< 0.005
	b-BHC	mg/kg			< 0.005	< 0.005	< 0.005
	Chlordanes - Total	mg/kg	0.0045	0.009	< 0.01	< 0.01	< 0.01
	d-BHC	mg/kg			< 0.005	< 0.005	< 0.005
	DDT + DDE + DDD (Total)*	mg/kg			< 0.005	< 0.005	< 0.005
	Dieldrin	mg/kg	0.0028	0.007	< 0.005	< 0.005	< 0.005
	Endosulfan I	mg/kg			< 0.005	< 0.005	< 0.005
	Endosulfan II	mg/kg			< 0.005	< 0.005	< 0.005
	Endosulfan sulphate	mg/kg			< 0.005	< 0.005	< 0.005
	Endrin	mg/kg	0.0027	0.06	< 0.005	< 0.005	< 0.005
	Endrin aldehyde	mg/kg			< 0.005	< 0.005	< 0.005
	Endrin ketone	mg/kg			< 0.005	< 0.005	< 0.005
	g-BHC (Lindane)	mg/kg			< 0.005	< 0.005	< 0.005
	Heptachlor	mg/kg			< 0.005	< 0.005	< 0.005
	Heptachlor epoxide	mg/kg			< 0.005	< 0.005	< 0.005
	Hexachlorobenzene	mg/kg			< 0.005	< 0.005	< 0.005
	Methoxychlor	mg/kg			< 0.005	< 0.005	< 0.005
	Toxaphene	mg/kg			< 0.1	< 0.1	< 0.1
	Vic EPA IWRG 621 OCP (Total)*	mg/kg			< 0.01	< 0.01	< 0.01
	Vic EPA IWRG 621 Other OCP (Total)*	mg/kg			< 0.01	< 0.01	< 0.01
Polychlorinated Biphenyls	Aroclor-1016	mg/kg			< 0.1	< 0.1	< 0.1
	Aroclor-1221	mg/kg			< 0.1	< 0.1	< 0.1
	Aroclor-1232	mg/kg			< 0.1	< 0.1	< 0.1
	Aroclor-1242	mg/kg			< 0.1	< 0.1	< 0.1
	Aroclor-1248	mg/kg			< 0.1	< 0.1	< 0.1
	Aroclor-1254	mg/kg			< 0.1	< 0.1	< 0.1
	Aroclor-1260	mg/kg			< 0.1	< 0.1	< 0.1
	Total PCB*	mg/kg	23		< 0.1	< 0.1	< 0.1

			Sample ID:	SED 01	SED 02	SED 03
			Sample date:	14/01/2021	14/01/2021	14/01/2021
			ANZG 2018 Sediment Default Guideline Values (DGVs)	ANZG 2018 Sediment Guideline Values (GVs-high)		
Analyte grouping	Analyte	Units				
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg			< 0.5	< 0.5
	Acenaphthylene	mg/kg			< 0.5	< 0.5
	Anthracene	mg/kg			< 0.5	< 0.5
	Benzo(a)anthracene	mg/kg			< 0.5	< 0.5
	Benzo(a)pyrene	mg/kg			< 0.5	< 0.5
	Benzo(a)pyrene TEQ (lower bound) *	mg/kg			< 0.5	< 0.5
	Benzo(a)pyrene TEQ (medium bound) *	mg/kg			0.6	0.6
	Benzo(a)pyrene TEQ (upper bound) *	mg/kg			1.2	1.2
	Benzo(b&j)fluoranthene	mg/kg			< 0.5	< 0.5
	Benzo(g,h,i)perylene	mg/kg			< 0.5	< 0.5
	Benzo(k)fluoranthene	mg/kg			< 0.5	< 0.5
	Chrysene	mg/kg			< 0.5	< 0.5
	Dibenz(a,h)anthracene	mg/kg			< 0.5	< 0.5
	Fluoranthene	mg/kg			< 0.5	< 0.5
	Fluorene	mg/kg			< 0.5	< 0.5
	Indeno(1,2,3-cd)pyrene	mg/kg			< 0.5	< 0.5
	Naphthalene	mg/kg			< 0.5	< 0.5
	Phenanthrene	mg/kg			< 0.5	< 0.5
	Pyrene	mg/kg			< 0.5	< 0.5
	Total PAH*	mg/kg	10	50	< 0.5	< 0.5
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	TRH C10-C14	mg/kg			53	170
	TRH C10-C36 (Total)	mg/kg	280	550	433	1130
	TRH C15-C28	mg/kg			220	580
	TRH C29-C36	mg/kg			160	380
	TRH C6-C9	mg/kg			< 20	< 20
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Naphthalene	mg/kg			< 0.5	< 0.5
	TRH >C10-C16	mg/kg			75	280
	TRH >C10-C16 less Naphthalene (F2)	mg/kg			75	280
	TRH >C10-C40 (total)*	mg/kg			365	1310
	TRH >C16-C34	mg/kg			290	700
	TRH >C34-C40	mg/kg			< 100	330
	TRH C6-C10	mg/kg			< 20	< 20
	TRH C6-C10 less BTEX (F1)	mg/kg			< 20	< 20

Environmental Standards

DoE, 2000, ANZECC 2000 Sediment ISGC-High

DoE, 2000, ANZECC 2000 Sediment ISGC-Low

	Sample ID:	SED 03	QS101	RPD %	QS102	RPD %
	Sample date:	14/01/2021	14/01/2021		14/01/2021	
Analyte grouping	Analyte					
Heavy Metals (1M HCl Extract)	Arsenic (1M HCl extract)	< 2	< 2	0%	7	0%
	Cadmium (1M HCl extract)	< 0.4	< 0.4	0%	<1	0%
	Chromium (1M HCl extract)	< 5	< 5	0%	7	0%
	Copper (1M HCl extract)	< 5	< 5	0%	<5	0%
	Lead (1M HCl extract)	< 5	< 5	0%	8	-
	Mercury (1M HCl extract)*	< 0.1	< 0.1	0%	<0.1	0%
	Nickel (1M HCl extract)	< 5	< 5	0%	<2	0%
	Zinc (1M HCl extract)	< 5	< 5	0%	<5	0%
Organochlorine Pesticides (Trace level)	4,4'-DDD	< 0.005	< 0.005	0%	<0.5	0%
	4,4'-DDE	< 0.005	< 0.005	0%	<0.5	0%
	4,4'-DDT	< 0.005	< 0.005	0%	<0.5	0%
	a-BHC	< 0.005	< 0.005	0%	<0.5	0%
	Aldrin	< 0.005	< 0.005	0%	<0.5	0%
	Aldrin and Dieldrin (Total)*	< 0.005	< 0.005	0%	<0.5	0%
	b-BHC	< 0.005	< 0.005	0%	<0.5	0%
	Chlordanes - Total	< 0.01	< 0.01	0%	<0.5	0%
	d-BHC	< 0.005	< 0.005	0%	<0.5	0%
	DDT + DDE + DDD (Total)*	< 0.005	< 0.005	0%	<0.5	0%
	Dieldrin	< 0.005	< 0.005	0%	<0.5	0%
	Endosulfan I	< 0.005	< 0.005	0%	<0.5	0%
	Endosulfan II	< 0.005	< 0.005	0%	<0.5	0%
	Endosulfan sulphate	< 0.005	< 0.005	0%	<0.5	0%
	Endrin	< 0.005	< 0.005	0%	<0.5	0%
	Endrin aldehyde	< 0.005	< 0.005	0%	<0.5	0%
	Endrin ketone	< 0.005	< 0.005	0%	<0.5	0%
	g-BHC (Lindane)	< 0.005	< 0.005	0%	<0.5	0%
	Heptachlor	< 0.005	< 0.005	0%	<0.5	0%
	Heptachlor epoxide	< 0.005	< 0.005	0%	<0.5	0%
	Hexachlorobenzene	< 0.005	< 0.005	0%	<0.5	0%
	Methoxychlor	< 0.005	< 0.005	0%	<0.5	0%
	Toxaphene	< 0.1	< 0.1	0%	<0.5	0%
	Vic EPA IWRG 621 OCP (Total)*	< 0.01	< 0.01	0%	<0.5	0%
	Vic EPA IWRG 621 Other OCP (Total)*	< 0.01	< 0.01	0%	<0.5	0%
Pathogens	E.coli	< 10	< 10	0%	<14	0%
	Thermotolerant Coliforms	< 10	< 10	0%	<14	0%
Polychlorinated Biphenyls	Aroclor-1016	< 0.1	< 0.1	0%	-	-
	Aroclor-1221	< 0.1	< 0.1	0%	-	-
	Aroclor-1232	< 0.1	< 0.1	0%	-	-
	Aroclor-1242	< 0.1	< 0.1	0%	-	-
	Aroclor-1248	< 0.1	< 0.1	0%	-	-
	Aroclor-1254	< 0.1	< 0.1	0%	-	-
	Aroclor-1260	< 0.1	< 0.1	0%	-	-
	Total PCB*	< 0.1	< 0.1	0%	< 0.1	0%

	Sample ID:	SED 03	QS101	RPD %	QS102	RPD %
	Sample date:	14/01/2021	14/01/2021		14/01/2021	
Analyte grouping	Analyte					
Polycyclic Aromatic Hydrocarbons	Acenaphthene	< 0.5	< 0.5	0%	< 0.5	0%
	Acenaphthylene	< 0.5	< 0.5	0%	< 0.5	0%
	Anthracene	< 0.5	< 0.5	0%	< 0.5	0%
	Benzo(a)anthracene	< 0.5	< 0.5	0%	< 0.5	0%
	Benzo(a)pyrene	< 0.5	< 0.5	0%	< 0.5	0%
	Benzo(a)pyrene TEQ (lower bound) *	< 0.5	< 0.5	0%	< 0.5	0%
	Benzo(a)pyrene TEQ (medium bound) *	0.6	0.6	0%	0.6	0%
	Benzo(a)pyrene TEQ (upper bound) *	1.2	1.2	0%	1.2	0%
	Benzo(b&j)fluoranthene	< 0.5	< 0.5	0%	< 0.5	0%
	Benzo(g,h,i)perylene	< 0.5	< 0.5	0%	< 0.5	0%
	Benzo(k)fluoranthene	< 0.5	< 0.5	0%	< 0.5	0%
	Chrysene	< 0.5	< 0.5	0%	< 0.5	0%
	Dibenz(a,h)anthracene	< 0.5	< 0.5	0%	< 0.5	0%
	Fluoranthene	< 0.5	< 0.5	0%	< 0.5	0%
	Fluorene	< 0.5	< 0.5	0%	< 0.5	0%
	Indeno(1,2,3-cd)pyrene	< 0.5	< 0.5	0%	< 0.5	0%
	Naphthalene	< 0.5	< 0.5	0%	< 0.5	0%
	Phenanthrene	< 0.5	< 0.5	0%	< 0.5	0%
	Pyrene	< 0.5	< 0.5	0%	< 0.5	0%
		Total PAH*	< 0.5	< 0.5	0%	< 0.5
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	TRH C10-C14	< 20	< 20	0%	<50	0%
	TRH C10-C36 (Total)	< 50	< 50	0%	<50	0%
	TRH C15-C28	< 50	< 50	0%	<100	0%
	TRH C29-C36	< 50	< 50	0%	<100	0%
	TRH C6-C9	< 20	< 20	0%	<10	0%
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Naphthalene	< 0.5	< 0.5	0%	<1	0%
	TRH >C10-C16	< 50	< 50	0%	<50	0%
	TRH >C10-C16 less Naphthalene (F2)	< 50	< 50	0%	<50	0%
	TRH >C10-C40 (total) *	< 100	< 100	0%	<50	0%
	TRH >C16-C34	< 100	< 100	0%	<100	0%
	TRH >C34-C40	< 100	< 100	0%	<100	0%
	TRH C6-C10	< 20	< 20	0%	<10	0%
	TRH C6-C10 less BTEX (F1)	< 20	< 20	0%	<10	0%

		Sample ID:	WATER_01	WATER_02	WATER_03
		Sample date:	14/01/2021	14/01/2021	14/01/2021
Analyte grouping	Analyte	ASC NEPM 2013 GILs, Drinking Water	ASC NEPM 2013 GILs, Fresh Waters		
BTEX	Benzene	0.001	0.95	< 0.001	< 0.001
	Ethylbenzene	0.3		< 0.001	< 0.001
	m&p-Xylenes			< 0.002	< 0.002
	o-Xylene		0.35	< 0.001	< 0.001
	Toluene	0.8		0.001	< 0.001
	Xylenes - Total*	0.6		< 0.003	< 0.003
Heavy Metals	Arsenic (filtered)	0.01		0.005	0.002
	Cadmium (filtered)	0.002	0.0002	< 0.0002	< 0.0002
	Chromium (filtered)			0.002	< 0.001
	Copper (filtered)	2	0.0014	0.04	0.003
	Lead (filtered)	0.01	0.0034	0.005	< 0.001
	Mercury (filtered)	0.001	0.00006	< 0.0001	< 0.0001
	Nickel (filtered)	0.02	0.011	0.005	0.002
	Zinc (filtered)		0.008	0.062	0.008
Organochlorine Pesticides	4,4'-DDD			< 0.0002	< 0.0002
	4,4'-DDE			< 0.0002	< 0.0002
	4,4'-DDT	9	0.006	< 0.0002	< 0.0002
	a-BHC			< 0.0002	< 0.0002
	Aldrin			< 0.0002	< 0.0002
	Aldrin and Dieldrin (Total)*			< 0.0002	< 0.0002
	b-BHC			< 0.0002	< 0.0002
	Chlordanes - Total	2	0.03	< 0.002	< 0.002
	d-BHC			< 0.0002	< 0.0002
	DDT + DDE + DDD (Total)*			< 0.0002	< 0.0002
	Dieldrin			< 0.0002	< 0.0002
	Endosulfan I			< 0.0002	< 0.0002
	Endosulfan II		0.01	< 0.0002	< 0.0002
	Endosulfan sulphate			< 0.0002	< 0.0002
	Endrin			< 0.0002	< 0.0002
	Endrin aldehyde			< 0.0002	< 0.0002
	Endrin ketone			< 0.0002	< 0.0002
	g-BHC (Lindane)		0.2	< 0.0002	< 0.0002
	Heptachlor		0.01	< 0.0002	< 0.0002
	Heptachlor epoxide	0.3		< 0.0002	< 0.0002
	Hexachlorobenzene			< 0.0002	< 0.0002
	Methoxychlor			< 0.0002	< 0.0002
	Toxaphene			< 0.001	< 0.001
	Vic EPA IWRG 621 OCP (Total)*			< 0.002	< 0.002
	Vic EPA IWRG 621 Other OCP (Total)*			< 0.002	< 0.002
Organophosphorus Pesticides	Azinphos-methyl	30		< 0.002	< 0.002
	Bolstar			< 0.002	< 0.002
	Chlorfenvinphos	2		< 0.002	< 0.002
	Chlorpyrifos	10	0.01	< 0.02	< 0.02
	Chlorpyrifos-methyl			< 0.002	< 0.002
	Coumaphos			< 0.02	< 0.02
	Demeton-O			< 0.002	< 0.002
	Demeton-S			< 0.02	< 0.02
	Diazinon	4	0.01	< 0.002	< 0.002
	Dichlorvos	5		< 0.002	< 0.002
	Dimethoate	7	0.15	< 0.002	< 0.002
	Disulfoton			< 0.002	< 0.002
	EPN			< 0.002	< 0.002
	Ethion	4		< 0.002	< 0.002
	Ethoprop			< 0.002	< 0.002
	Ethyl parathion			< 0.002	< 0.002
	Fenitrothion	7	0.2	< 0.002	< 0.002
	Fensulfothion			< 0.002	< 0.002
	Fenthion	7		< 0.002	< 0.002
	Malathion	70	0.05	< 0.002	< 0.002
	Merphos			< 0.002	< 0.002
	Methyl parathion			< 0.002	< 0.002
	Mevinphos	6		< 0.002	< 0.002
	Monocrotophos			< 0.002	< 0.002
	Naled			< 0.002	< 0.002
	Omethoate	1		< 0.002	< 0.002
	Phorate			< 0.002	< 0.002
	Pirimiphos-methyl	90		< 0.02	< 0.02
	Pyrazophos	20		< 0.002	< 0.002
	Ronnel			< 0.002	< 0.002
	Terbufos	0.9		< 0.002	< 0.002
	Tetrachlorvinphos			< 0.002	< 0.002
	Tokuthion			< 0.002	< 0.002
	Trichloronate			< 0.002	< 0.002

		Sample ID: WATER_01 WATER_02 WATER_03			
		Sample date: 14/01/2021 14/01/2021 14/01/2021			
		ASC NEPM 2013 GILs, Drinking Water	ASC NEPM 2013 GILs, Fresh Waters		
Analyte grouping	Analyte				
Pathogens	E.coli	0		1500	< 10
	Thermotolerant Coliforms	0		10000	610
Polycyclic Aromatic Hydrocarbons (Trace level)	Acenaphthene			< 0.00001	< 0.00001
	Acenaphthylene			< 0.00001	< 0.00001
	Anthracene			< 0.00001	< 0.00001
	Benz(a)anthracene			0.00001	< 0.00001
	Benzo(a)pyrene	0.00001		< 0.00001	< 0.00001
	Benzo(b&j)fluoranthene			0.00001	< 0.00001
	Benzo(g,h,i)perylene			0.00003	< 0.00001
	Benzo(k)fluoranthene			0.00002	< 0.00001
	Chrysene			0.00003	< 0.00001
	Dibenz(a,h)anthracene			< 0.00001	< 0.00001
	Fluoranthene			0.00003	< 0.00001
	Fluorene			< 0.00001	< 0.00001
	Indeno(1,2,3-cd)pyrene			0.00003	< 0.00001
	Naphthalene		0.016	< 0.00001	< 0.00001
	Phenanthrene			0.00002	< 0.00001
	Pyrene			0.00004	< 0.00001
	Total PAH*			0.00022	< 0.00001
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	TRH C10-C14			< 0.05	< 0.05
	TRH C10-C36 (Total)			0.1	< 0.1
	TRH C15-C28			0.1	< 0.1
	TRH C29-C36			< 0.1	< 0.1
	TRH C6-C9			< 0.02	< 0.02
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Naphthalene			< 0.01	< 0.01
	TRH >C10-C16			< 0.05	< 0.05
	TRH >C10-C16 less Naphthalene (F2)			< 0.05	< 0.05
	TRH >C10-C40 (total)*			0.1	< 0.1
	TRH >C16-C34			0.1	< 0.1
	TRH >C34-C40			< 0.1	< 0.1
	TRH C6-C10			< 0.02	< 0.02
	TRH C6-C10 less BTEX (F1)			< 0.02	< 0.02

		Sample ID:	WATER_02	QW101	RPD %	QW102	RPD %
		Sample date:	14/01/2021	14/01/2021		14/01/2021	
		ASC NEPM 2013 GILs, Drinking Water	ASC NEPM 2013 GILs, Fresh Waters	All results in mg/L			
Analyte grouping	Analyte						
BTEX	Benzene	0.001	0.95	< 0.001	< 0.001	0%	< 0.001
	Ethylbenzene	0.3		< 0.001	< 0.001	0%	< 0.002
	m&p-Xylenes			< 0.002	< 0.002	0%	< 0.002
	o-Xylene		0.35	< 0.001	< 0.001	0%	< 0.002
	Toluene	0.8		< 0.001	< 0.001	0%	< 0.002
	Xylenes - Total*	0.6		< 0.003	< 0.003	0%	< 0.002
Heavy Metals	Arsenic (filtered)	0.01		0.002	< 0.001	0%	< 0.001
	Cadmium (filtered)	0.002	0.0002	< 0.0002	< 0.0002	0%	< 0.0001
	Chromium (filtered)			< 0.001	< 0.001	0%	< 0.001
	Copper (filtered)	2	0.0014	0.003	0.001	0%	0.003
	Lead (filtered)	0.01	0.0034	< 0.001	< 0.001	0%	< 0.001
	Mercury (filtered)	0.001	0.00006	< 0.0001	< 0.0001	0%	< 0.0001
	Nickel (filtered)	0.02	0.011	0.002	< 0.001	0%	< 0.001
	Zinc (filtered)		0.008	0.008	0.006	0%	0.008
Organochlorine Pesticides	4,4'-DDD			< 0.0002	< 0.0002	0%	< 0.0005
	4,4'-DDE			< 0.0002	< 0.0002	0%	< 0.0005
	4,4'-DDT	9	0.006	< 0.0002	< 0.0002	0%	< 0.002
	a-BHC			< 0.0002	< 0.0002	0%	< 0.0005
	Aldrin			< 0.0002	< 0.0002	0%	< 0.0005
	Aldrin and Dieldrin (Total)*			< 0.0002	< 0.0002	0%	< 0.0005
	b-BHC			< 0.0002	< 0.0002	0%	< 0.0005
	Chlordanes - Total	2	0.03	< 0.002	< 0.002	0%	< 0.0005
	d-BHC			< 0.0002	< 0.0002	0%	< 0.0005
	DDT + DDE + DDD (Total)*			< 0.0002	< 0.0002	0%	< 0.0005
	Dieldrin			< 0.0002	< 0.0002	0%	< 0.0005
	Endosulfan I			< 0.0002	< 0.0002	0%	< 0.0005
	Endosulfan II		0.01	< 0.0002	< 0.0002	0%	< 0.0005
	Endosulfan sulphate			< 0.0002	< 0.0002	0%	< 0.0005
	Endrin			< 0.0002	< 0.0002	0%	< 0.0005
	Endrin aldehyde			< 0.0002	< 0.0002	0%	< 0.0005
	Endrin ketone			< 0.0002	< 0.0002	0%	< 0.0005
	g-BHC (Lindane)		0.2	< 0.0002	< 0.0002	0%	< 0.0005
	Heptachlor		0.01	< 0.0002	< 0.0002	0%	< 0.0005
	Heptachlor epoxide	0.3		< 0.0002	< 0.0002	0%	< 0.0005
	Hexachlorobenzene			< 0.0002	< 0.0002	0%	< 0.0005
	Methoxychlor			< 0.0002	< 0.0002	0%	< 0.002
	Toxaphene			< 0.001	< 0.001	0%	< 0.0005
	Vic EPA IWRG 621 OCP (Total)*			< 0.002	< 0.002	0%	< 0.0005
	Vic EPA IWRG 621 Other OCP (Total)*			< 0.002	< 0.002	0%	< 0.0005
Organophosphorus Pesticides	Azinphos-methyl	30		< 0.002	< 0.002	0%	< 0.0005
	Bolstar			< 0.002	< 0.002	0%	-
	Chlorfenvinphos	2		< 0.002	< 0.002	0%	< 0.0005
	Chlorpyrifos	10	0.01	< 0.02	< 0.02	0%	-
	Chlorpyrifos-methyl			< 0.002	< 0.002	0%	< 0.0005
	Coumaphos			< 0.02	< 0.02	0%	-
	Demeton-O			< 0.002	< 0.002	0%	-
	Demeton-S			< 0.02	< 0.02	0%	< 0.0005
	Diazinon	4	0.01	< 0.002	< 0.002	0%	< 0.0005
	Dichlorvos	5		< 0.002	< 0.002	0%	< 0.0005
	Dimethoate	7	0.15	< 0.002	< 0.002	0%	< 0.0005
	Disulfoton			< 0.002	< 0.002	0%	-
	EPN			< 0.002	< 0.002	0%	-
	Ethion	4		< 0.002	< 0.002	0%	< 0.0005
	Ethoprop			< 0.002	< 0.002	0%	-
	Ethyl parathion			< 0.002	< 0.002	0%	-
	Fenitrothion	7	0.2	< 0.002	< 0.002	0%	-
	Fensulfothion			< 0.002	< 0.002	0%	-
	Fenthion	7		< 0.002	< 0.002	0%	< 0.0005
	Malathion	70	0.05	< 0.002	< 0.002	0%	< 0.0005
	Merphos			< 0.002	< 0.002	0%	-
	Methyl parathion			< 0.002	< 0.002	0%	-
	Mevinphos	6		< 0.002	< 0.002	0%	-
	Monocrotophos			< 0.002	< 0.002	0%	< 0.002
	Naled			< 0.002	< 0.002	0%	-
	Omethoate	1		< 0.002	< 0.002	0%	-
	Phorate			< 0.002	< 0.002	0%	-
	Pirimiphos-methyl	90		< 0.02	< 0.02	0%	< 0.0005
	Pyrazophos	20		< 0.002	< 0.002	0%	-
	Ronnel			< 0.002	< 0.002	0%	-
	Terbufos	0.9		< 0.002	< 0.002	0%	-
	Tetrachlorvinphos			< 0.002	< 0.002	0%	-
	Tokuthion			< 0.002	< 0.002	0%	-
	Trichloronate			< 0.002	< 0.002	0%	-

		Sample ID:	WATER_02	QW101	RPD %	QW102	RPD %
		Sample date:	14/01/2021	14/01/2021		14/01/2021	
Analyte grouping	Analyte	ASC NEPM 2013 GILs, Drinking Water	ASC NEPM 2013 GILs, Fresh Waters	All results in mg/L			
Pathogens	E.coli	0		63	< 10	-	<14
	Thermotolerant Coliforms	0		610	430	35%	<14
Polycyclic Aromatic Hydrocarbons (Trace level)	Acenaphthene			< 0.00001	< 0.00001	0%	< 0.0001
	Acenaphthylene			< 0.00001	< 0.00001	0%	< 0.0001
	Anthracene			< 0.00001	0.00002	-	< 0.0001
	Benzo(a)anthracene			< 0.00001	< 0.00001	0%	< 0.0001
	Benzo(a)pyrene	0.00001		< 0.00001	< 0.00001	0%	< 0.0001
	Benzo(b&j)fluoranthene			< 0.00001	< 0.00001	0%	< 0.00005
	Benzo(g,h,i)perylene			< 0.00001	< 0.00001	0%	< 0.0001
	Benzo(k)fluoranthene			< 0.00001	< 0.00001	0%	< 0.0001
	Chrysene			< 0.00001	< 0.00001	0%	< 0.0001
	Dibenz(a,h)anthracene			< 0.00001	< 0.00001	0%	< 0.0001
	Fluoranthene			< 0.00001	< 0.00001	0%	< 0.0001
	Fluorene			< 0.00001	< 0.00001	0%	< 0.0001
	Indeno(1,2,3-cd)pyrene			< 0.00001	< 0.00001	0%	< 0.0001
	Naphthalene		0.016	< 0.00001	< 0.00001	0%	< 0.0001
	Phenanthrene			< 0.00001	< 0.00001	0%	< 0.0001
	Pyrene			< 0.00001	< 0.00001	0%	< 0.0001
	Total PAH*			< 0.00001	0.00002	-	< 0.0001
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	TRH C10-C14			< 0.05	< 0.05	0%	< 0.05
	TRH C10-C36 (Total)			< 0.1	< 0.1	0%	< 0.05
	TRH C15-C28			< 0.1	< 0.1	0%	< 0.1
	TRH C29-C36			< 0.1	< 0.1	0%	< 0.05
	TRH C6-C9			< 0.02	< 0.02	0%	< 0.02
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Naphthalene			< 0.01	< 0.01	0%	<0.005
	TRH >C10-C16			< 0.05	< 0.05	0%	<0.1
	TRH >C10-C16 less Naphthalene (F2)			< 0.05	< 0.05	0%	<0.1
	TRH >C10-C40 (total)*			< 0.1	< 0.1	0%	<0.1
	TRH >C16-C34			< 0.1	< 0.1	0%	<0.1
	TRH >C34-C40			< 0.1	< 0.1	0%	<0.1
	TRH C6-C10			< 0.02	< 0.02	0%	< 0.02
	TRH C6-C10 less BTEX (F1)			< 0.02	< 0.02	0%	< 0.02

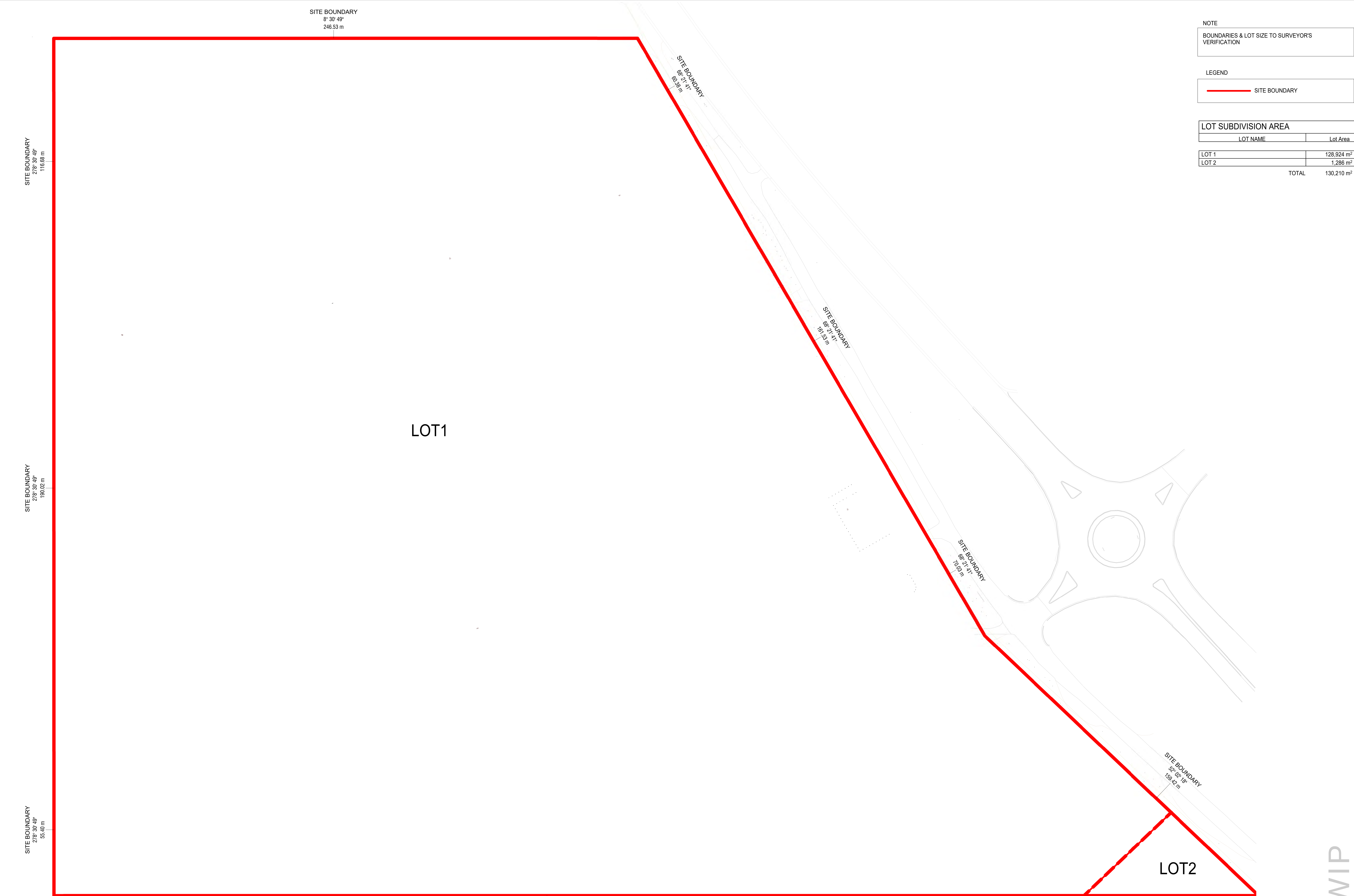
	Sample ID:	RW01
	Sample date	14/01/2021
Analyte Group	Analyte	
BTEX	Benzene	< 0.001
	Ethylbenzene	< 0.001
	m&p-Xylenes	< 0.002
	o-Xylene	< 0.001
	Toluene	< 0.001
	Xylenes - Total*	< 0.003
Heavy Metals	Arsenic (filtered)	< 0.001
	Cadmium (filtered)	< 0.0002
	Chromium (filtered)	< 0.001
	Copper (filtered)	< 0.001
	Lead (filtered)	< 0.001
	Mercury (filtered)	< 0.0001
	Nickel (filtered)	< 0.001
Organochlorine Pesticides	Zinc (filtered)	< 0.005
	4,4'-DDD	< 0.0002
	4,4'-DDE	< 0.0002
	4,4'-DDT	< 0.0002
	a-BHC	< 0.0002
	Aldrin	< 0.0002
	Aldrin and Dieldrin (Total)*	< 0.0002
	b-BHC	< 0.0002
	Chlordanes - Total	< 0.002
	d-BHC	< 0.0002
	DDT + DDE + DDD (Total)*	< 0.0002
	Dieldrin	< 0.0002
	Endosulfan I	< 0.0002
	Endosulfan II	< 0.0002
	Endosulfan sulphate	< 0.0002
	Endrin	< 0.0002
	Endrin aldehyde	< 0.0002
	Endrin ketone	< 0.0002
	g-BHC (Lindane)	< 0.0002
	Heptachlor	< 0.0002
	Heptachlor epoxide	< 0.0002
	Hexachlorobenzene	< 0.0002
	Methoxychlor	< 0.0002
	Toxaphene	< 0.001
Organophosphorus Pesticides	Vic EPA IWRG 621 OCP (Total)*	< 0.002
	Vic EPA IWRG 621 Other OCP (Total)*	< 0.002
	Azinphos-methyl	< 0.002
	Bolstar	< 0.002
	Chlorfenvinphos	< 0.002
	Chlorpyrifos	< 0.02
	Chlorpyrifos-methyl	< 0.002
	Coumaphos	< 0.02
	Demeton-O	< 0.002
	Demeton-S	< 0.02
	Diazinon	< 0.002
	Dichlorvos	< 0.002
	Dimethoate	< 0.002
	Disulfoton	< 0.002
	EPN	< 0.002
	Ethion	< 0.002
	Ethoprop	< 0.002
	Ethyl parathion	< 0.002
	Fenitrothion	< 0.002
	Fensulfothion	< 0.002
	Fenthion	< 0.002
	Malathion	< 0.002
	Merphos	< 0.002
	Methyl parathion	< 0.002
	Mevinphos	< 0.002
	Monocrotophos	< 0.002
	Naled	< 0.002
	Omethoate	< 0.002
	Phorate	< 0.002
	Pirimiphos-methyl	< 0.02
	Pyrazophos	< 0.002
	Ronnel	< 0.002
	Terbufos	< 0.002
	Tetrachlorvinphos	< 0.002
	Tokuthion	< 0.002
	Trichloronate	< 0.002

	Sample ID:	RW01
	Sample date	14/01/2021
Analyte Group	Analyte	
Pathogens	E.coli	< 1
	Thermotolerant Coliforms	< 1
Polycyclic Aromatic Hydrocarbons	Acenaphthene	< 0.001
	Acenaphthylene	< 0.001
	Anthracene	< 0.001
	Benzo(a)anthracene	< 0.001
	Benzo(a)pyrene	< 0.001
	Benzo(b&j)fluoranthene	< 0.001
	Benzo(g,h,i)perylene	< 0.001
	Benzo(k)fluoranthene	< 0.001
	Chrysene	< 0.001
	Dibenz(a,h)anthracene	< 0.001
	Fluoranthene	< 0.001
	Fluorene	< 0.001
	Indeno(1,2,3-cd)pyrene	< 0.001
	Naphthalene	< 0.001
	Phenanthrene	< 0.001
	Pyrene	< 0.001
	Total PAH*	< 0.001
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	TRH C10-C14	< 0.05
	TRH C10-C36 (Total)	< 0.1
	TRH C15-C28	< 0.1
	TRH C29-C36	< 0.1
	TRH C6-C9	< 0.02
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Naphthalene	< 0.01
	TRH >C10-C16	< 0.05
	TRH >C10-C16 less Naphthalene (F2)	< 0.05
	TRH >C10-C40 (total)*	< 0.1
	TRH >C16-C34	< 0.1
	TRH >C34-C40	< 0.1
	TRH C6-C10	< 0.02
	TRH C6-C10 less BTEX (F1)	< 0.02

	Sample ID:	TB	TS
	Sample date	14/01/2021	14/01/2021
Analyte Group	Analyte		
BTEX	Benzene	< 0.1	110
	Ethylbenzene	< 0.1	110
	m&p-Xylenes	< 0.2	100
	o-Xylene	< 0.1	93
	Toluene	< 0.1	120
	Xylenes - Total*	< 0.3	100
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	TRH C6-C9	< 20	110
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	TRH C6-C10	< 20	110
	TRH C6-C10 less BTEX (F1)	< 20	< 20

Appendix A

SUBDIVISION PLANS

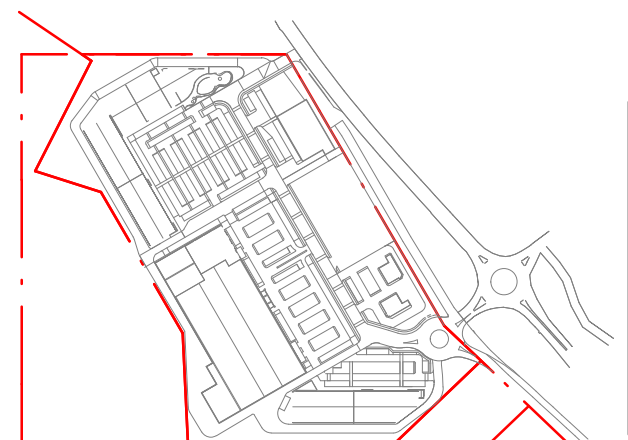


NOTE	
BOUNDARIES & LOT SIZE TO SURVEYOR'S VERIFICATION	

LEGEND	
	SITE BOUNDARY

LOT SUBDIVISION AREA	
LOT NAME	Lot Area
LOT 1	128,824 m ²
LOT 2	1,286 m ²
TOTAL	130,210 m ²

Rev.	Date	Description	Iss.	Appr.
A	13/04/2021	FOR REVIEW	EC	LHC
B	14/04/2021	COORDINATION ISSUE	EC	LHC



Nominated Architect: Anthony Palamara NSW APN 7274
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File: C:\SCRM\BG-BUC-AR20-ARCHITECTURE\JEE-HWEE-CHONG\WKGNQ.nvt

SITE BOUNDARY
188° 31' 36"
508.77 m

Project
Mandalong Rd, MORISSET NSW
76 Mandalong Road, MORISSET NSW 2264, 66 Mandalong Road, MORISSET NSW 2264
Drawing Number
220178

Status

Date Plotted14/04/2021 2:06:14 PM
Date Issued14/04/2021
Scale1 : 500 @A0

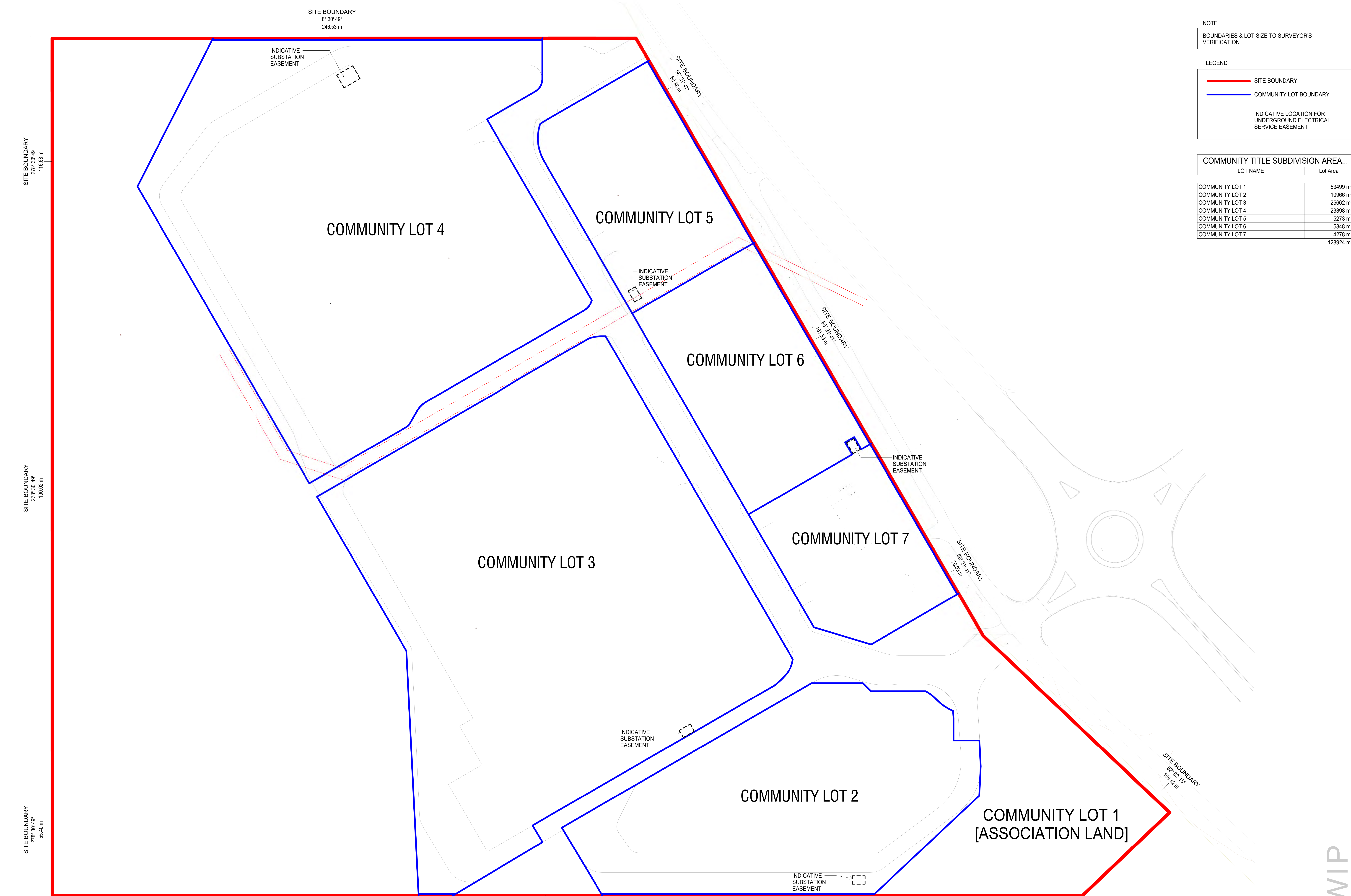
Drawing Title
SUBDIVISION PLAN 1
Drawing Number
MOR-BUC-DR-A-DA303

Revision
B

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NOTE

BOUNDARIES & LOT SIZE TO SURVEYOR'S VERIFICATION

LEGEND

SITE BOUNDARY

COMMUNITY LOT BOUNDARY

INDICATIVE LOCATION FOR UNDERGROUND ELECTRICAL SERVICE EASEMENT

COMMUNITY TITLE SUBDIVISION AREA...	
LOT NAME	Lot Area
COMMUNITY LOT 1	53499 m²
COMMUNITY LOT 2	10966 m²
COMMUNITY LOT 3	25662 m²
COMMUNITY LOT 4	23398 m²
COMMUNITY LOT 5	5273 m²
COMMUNITY LOT 6	5848 m²
COMMUNITY LOT 7	4278 m²
128924 m²	

Rev.	Date	Description	Iss.	Appr.
A	26/03/2021	DRAFT ISSUE	EC	LHC
B	13/04/2021	FOR REVIEW	EC	LHC
C	14/04/2021	COORDINATION ISSUE	EC	LHC

Nominated Architect: Anthony Palamara NSW ARN 7274
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File
C:\SCRM\BG-BUC-AR20-ARCHITECTURE\JEE-INWEE.chONG\WKGNQ.nit

Project

Mandalong Rd, MORISSET NSW
76 Mandalong Road, MORISSET NSW 2264, 66 Mandalong Road, MORISSET NSW 2264

Project Number
220178

Status

Date Plotted
14/04/2021 2:11:01 PM

Date Issued
14/04/2021

Scale
1 : 500 @A0

Drawing Title

SUBDIVISION PLAN 2

Drawing Number
MOR-BUC-DR-A-DA304

Revision
C

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WIP

Appendix B

LOT SEARCH ENVIRONMENTAL REPORT (2021)



LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 21 Dec 2020 18:16:36

Reference: LS016937 EP

Address: 56-76 Mandalong Road, Morisset, NSW 2264

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

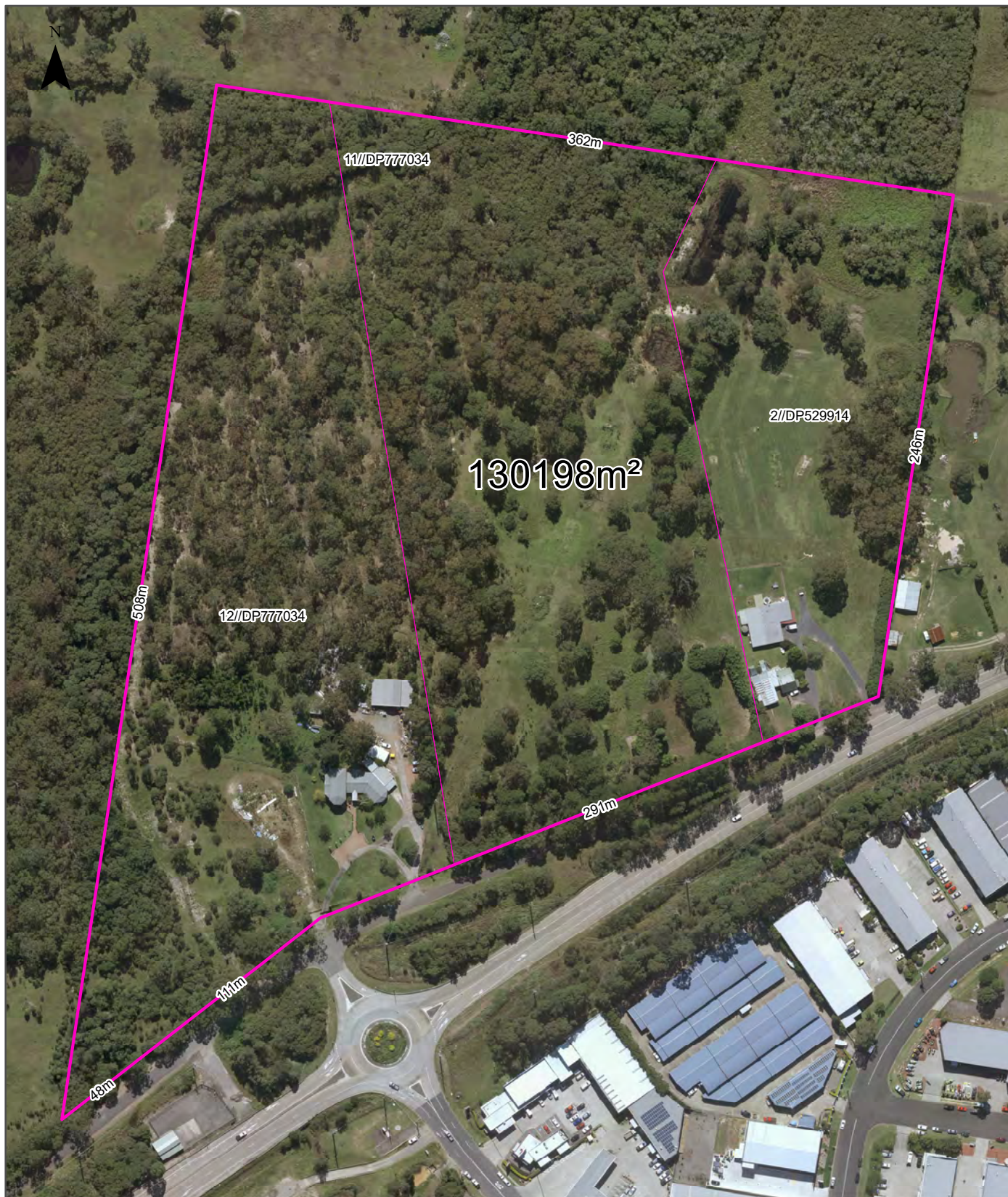
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Finance, Services & Innovation	13/11/2020	13/11/2020	Quarterly	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	14/12/2020	14/12/2020	Monthly	1000	0	0	1
Contaminated Land Records of Notice	Environment Protection Authority	03/12/2020	03/12/2020	Monthly	1000	0	0	0
Former Gasworks	Environment Protection Authority	10/12/2020	11/10/2017	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	12/11/2020	07/03/2017	Quarterly	1000	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	12/11/2020	13/07/2012	Quarterly	1000	0	1	1
EPA PFAS Investigation Program	Environment Protection Authority	14/12/2020	23/11/2020	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	08/12/2020	08/12/2020	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	08/12/2020	08/12/2020	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	07/12/2020	07/12/2020	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	14/12/2020	14/12/2020	Monthly	2000	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	04/02/2020	13/12/2018	Annually	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	10/12/2020	10/12/2020	Monthly	1000	1	1	4
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	10/12/2020	10/12/2020	Monthly	1000	0	0	1
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	10/12/2020	10/12/2020	Monthly	1000	3	3	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150	-	4	4
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500	-	0	1
Points of Interest	NSW Department of Finance, Services & Innovation	30/03/2020	30/03/2020	Quarterly	1000	0	0	18
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	30/03/2020	30/03/2020	Quarterly	1000	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	30/03/2020	30/03/2020	Quarterly	1000	0	0	1
Major Easements	NSW Department of Finance, Services & Innovation	30/03/2020	30/03/2020	Quarterly	1000	2	4	13
State Forest	Forestry Corporation of NSW	18/01/2018	18/01/2018	As required	1000	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	21/01/2020	30/09/2019	Annually	1000	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	26/10/2020	21/02/2018	As required	1000	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	1	2	14
Geological Units 1:250,000	NSW Department of Planning, Industry and Environment	20/08/2014		None planned	1000	1	-	2
Geological Structures 1:250,000	NSW Department of Planning, Industry and Environment	20/08/2014		None planned	1000	0	-	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000	1	1	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	14/10/2020	27/07/2020	Annually	1000	2	-	4
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	04/12/2020	03/07/2020	Monthly	500	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	3
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	0	0	0
Dryland Salinity Potential of Western Sydney	NSW Department of Planning, Industry and Environment	12/05/2017	01/01/2002	None planned	1000	-	-	-
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	30/03/2020	30/03/2020	Quarterly	1000	0	1	2
Current Mining Titles	NSW Department of Industry	07/12/2020	07/12/2020	Monthly	1000	2	2	4
Mining Title Applications	NSW Department of Industry	07/12/2020	07/12/2020	Monthly	1000	0	0	0
Historic Mining Titles	NSW Department of Industry	07/12/2020	07/12/2020	Monthly	1000	10	10	13
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	04/12/2020	07/12/2018	Monthly	1000	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	04/12/2020	27/11/2020	Monthly	1000	2	5	37
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	24/11/2020	20/11/2019	Quarterly	1000	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	24/11/2020	20/11/2019	Quarterly	1000	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	12/11/2020	02/07/2020	Quarterly	1000	0	0	0
Environmental Planning Instrument Heritage	NSW Department of Planning, Industry and Environment	04/12/2020	27/11/2020	Monthly	1000	0	0	1
Bush Fire Prone Land	NSW Rural Fire Service	15/12/2020	28/11/2020	Weekly	1000	4	4	4
Lower Hunter and Central Coast Regional Vegetation Survey	NSW Office of Environment & Heritage	28/02/2015	16/11/2009	As required	1000	6	9	16
Ramsar Wetlands of Australia	Department of the Agriculture, Water and the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	2	2	3
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	7	7	9
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	21/12/2020	21/12/2020	Weekly	10000	-	-	-

Site Diagram

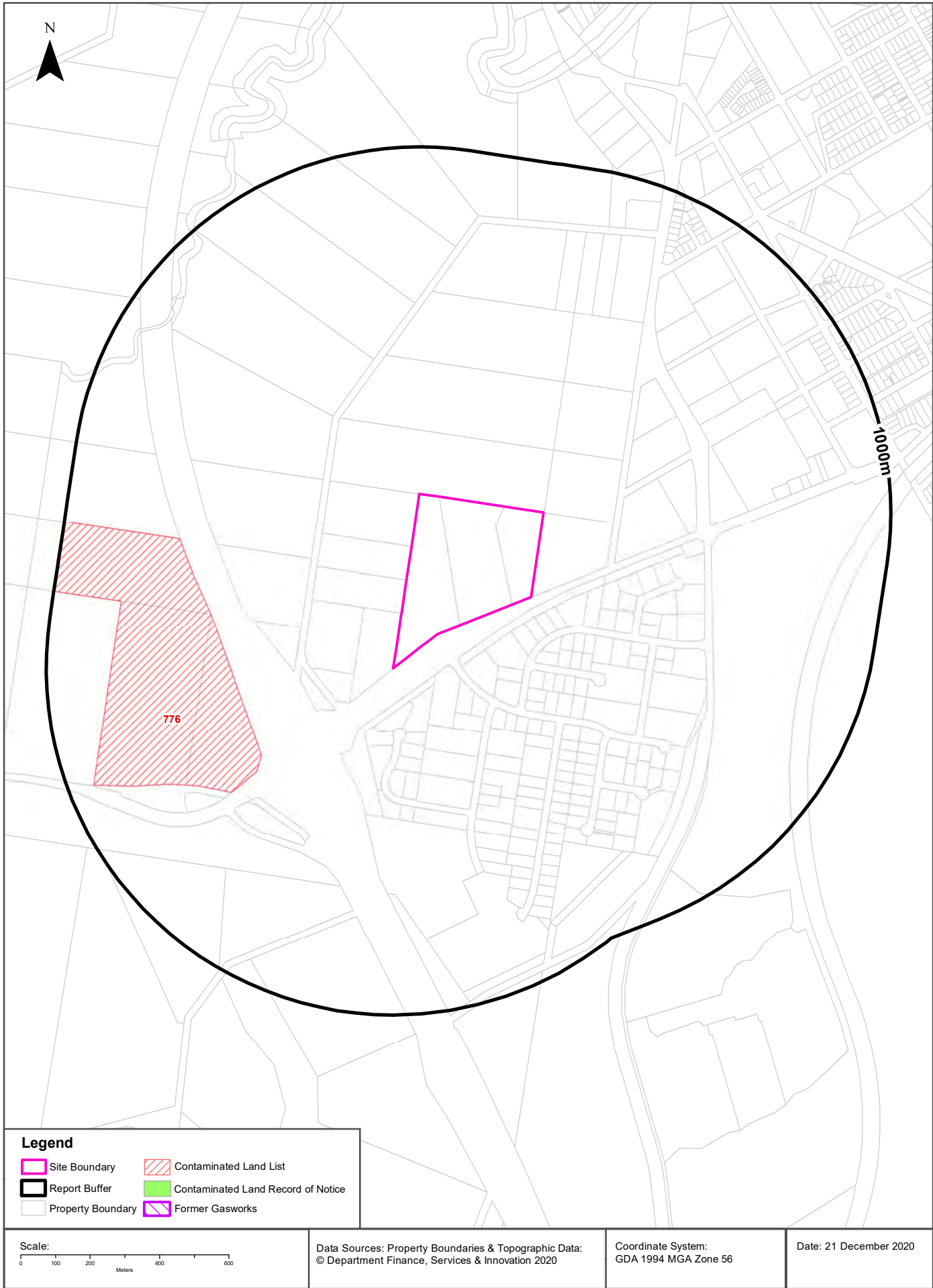
56-76 Mandalong Road, Morisset, NSW 2264



Legend Site Boundary Internal Parcel Boundaries	Total Area: 130198m ² Total Perimeter: 1568m 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.	Scale: 0 25 50 100 Meters Data Sources: Aerial Imagery © Aerometrex Pty Ltd Coordinate System: GDA 1994 MGA Zone 56 Date: 21 December 2020
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Contaminated Land

56-76 Mandalong Road, Morisset, NSW 2264



Contaminated Land

56-76 Mandalong Road, Morisset, NSW 2264

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 (m)	Direction
776	Mandalong Mine	Mandalong Road	Mandalong	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	443m	West

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

56-76 Mandalong Road, Morisset, NSW 2264

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

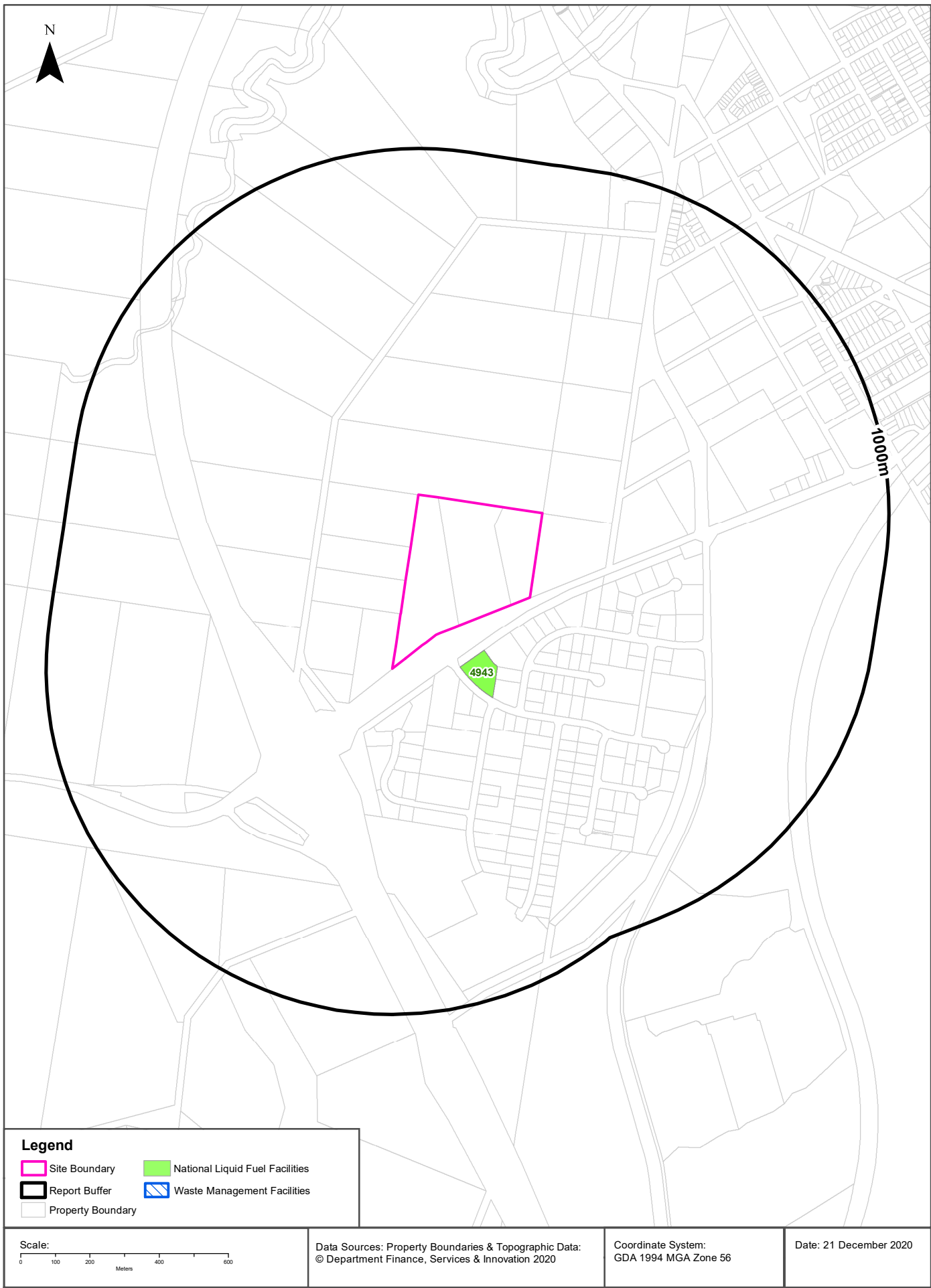
Former Gasworks within the dataset buffer:

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

Waste Management & Liquid Fuel Facilities

56-76 Mandalong Road, Morisset, NSW 2264



Waste Management & Liquid Fuel Facilities

56-76 Mandalong Road, Morisset, NSW 2264

National Waste Management Site Database

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

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist (m)	Direction
N/A	No records in buffer											

Waste Management Facilities Data Source: Geoscience Australia

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National Liquid Fuel Facilities

National Liquid Fuel Facilities within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist (m)	Direction
4943	Caltex	Caltex Morisset	5-11 Gateway Boulevard	Morisset	Petrol Station	Operational		25/07/2011	Premise Match	92m	South

National Liquid Fuel Facilities Data Source: Geoscience Australia

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PFAS Investigation & Management Programs

56-76 Mandalong Road, Morisset, NSW 2264

EPA PFAS Investigation Program

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

Id	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

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
N/A	No records in buffer				

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
N/A	No records in buffer				

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

56-76 Mandalong Road, Morisset, NSW 2264

Defence 3 Year Regional Contamination Investigation Program

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
N/A	No records in buffer					

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

EPA Other Sites with Contamination Issues

56-76 Mandalong Road, Morisset, NSW 2264

EPA Other Sites with Contamination Issues

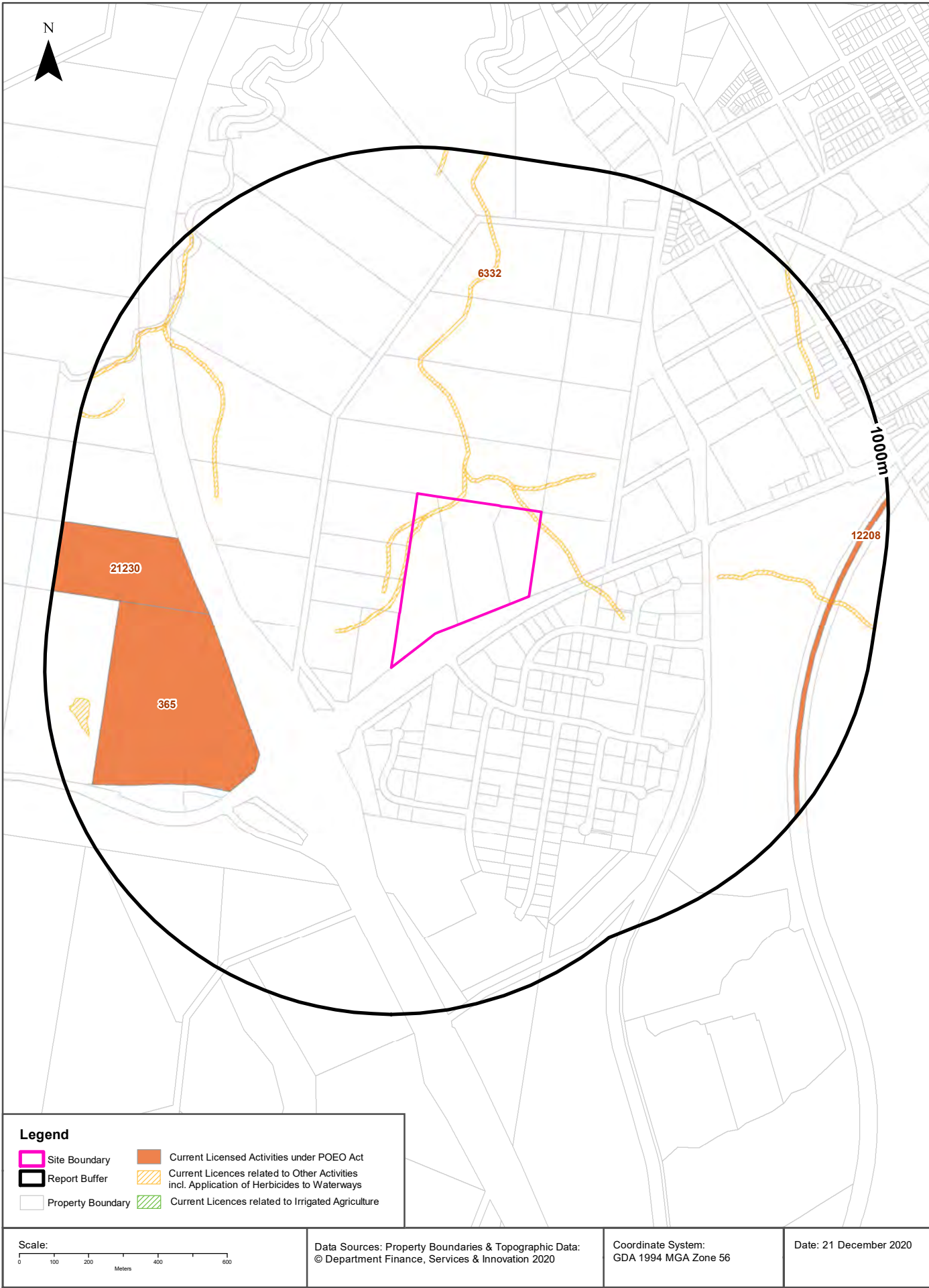
This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- 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



EPA Activities

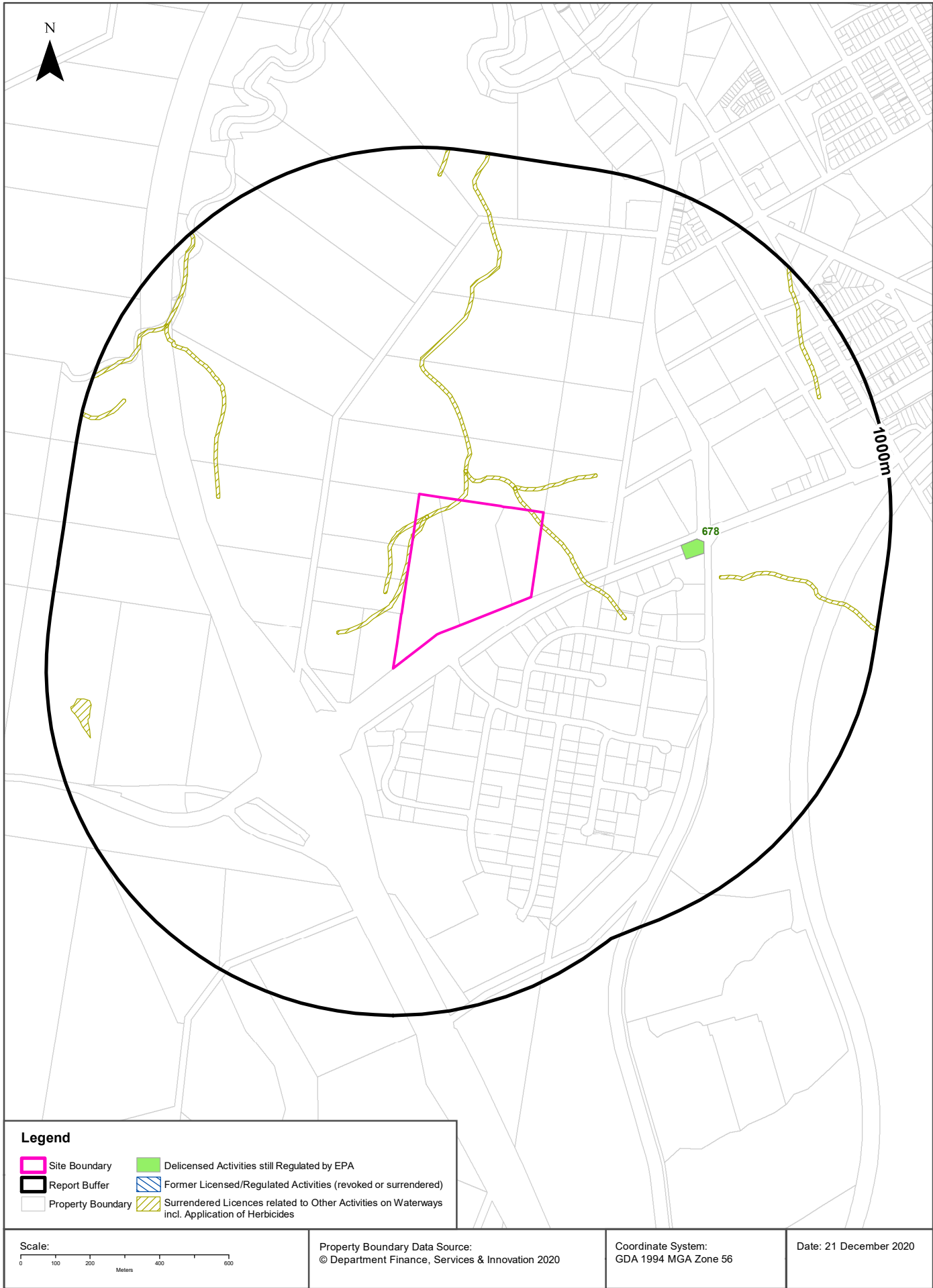
56-76 Mandalong Road, Morisset, NSW 2264

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
6332	LAKE MACQUARIE CITY COUNCIL	-	-	SPEERS POINT	Other activities	Network of Features	0m	Onsite
365	CENTENNIAL MANDALONG PTY LIMITED	MANDALONG MINE, COORANBONG COLLIERY AND DELTA COAL SERVICES SITE	KERRY ANDERSON DRIVE, GRADWELLS ROAD AND RUTLEYS ROAD, MANDALONG, WYEE AND, DORA CREEK, NSW 2264	DORA CREEK	Coal works	Premise Match	443m	West
21230	EDL CSM (NSW) PTY LTD		LOT 5 KERRY ANDERSON DRIVE, MANDALONG, NSW 2264		Generation of electrical power from gas	Premise Match	543m	West
12208	SYDNEY TRAINS		SYDNEY TRAINS, HAYMARKET, NSW 1238		Railway systems activities	Network of Features	827m	East

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



EPA Activities

56-76 Mandalong Road, Morisset, NSW 2264

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
678	HANSON CONSTRUCTION MATERIALS PTY LTD	HANSON CONSTRUCTION MATERIALS PTY LTD	230 MANDALONG ROAD	MORISSET	Concrete works	Premise Match	402m	East

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

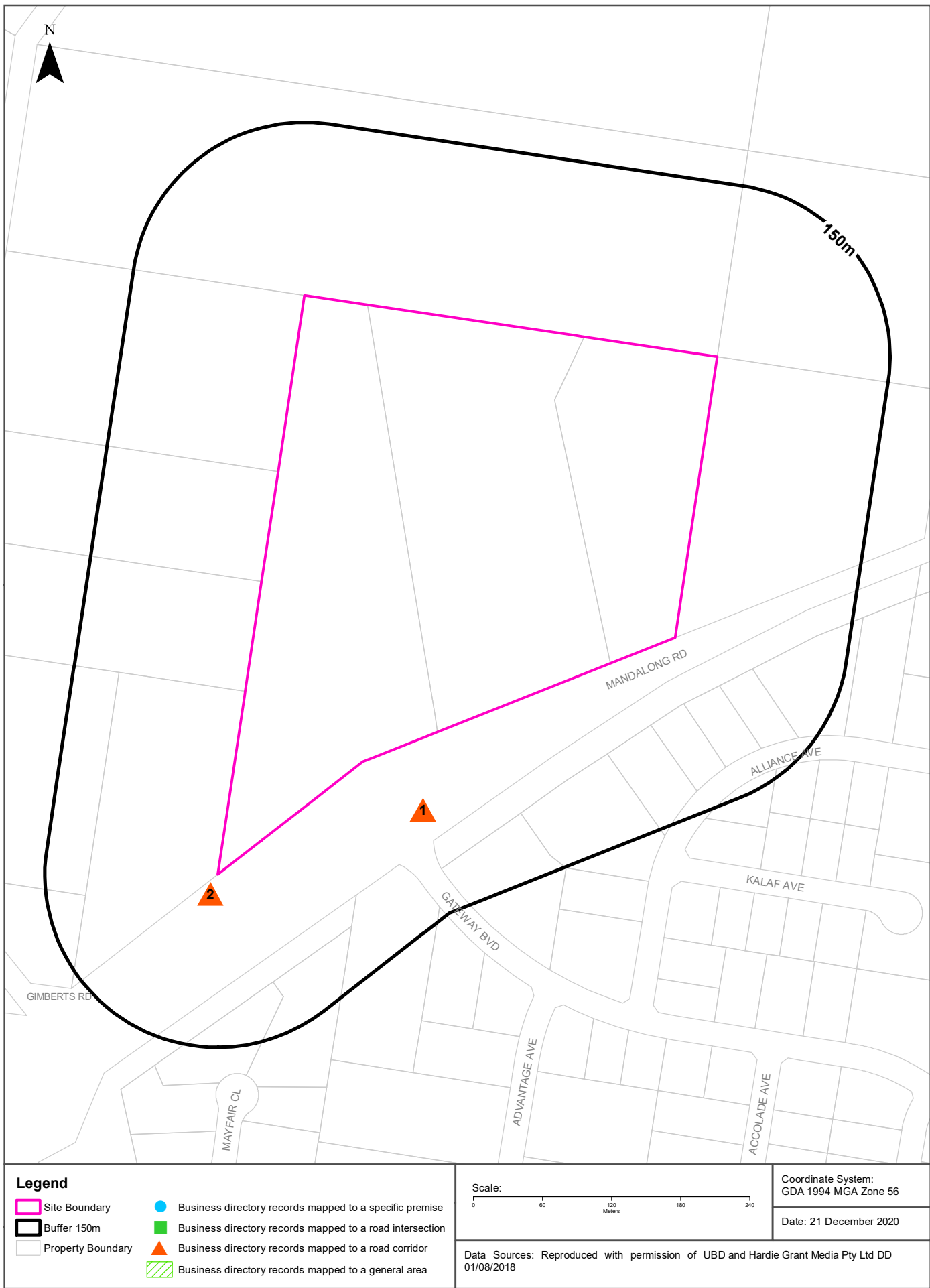
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

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	0m	Onsite
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	0m	Onsite
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	0m	Onsite

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

Historical Business Directories

56-76 Mandalong Road, Morisset, NSW 2264



Historical Business Directories

56-76 Mandalong Road, Morisset, NSW 2264

Business Directory Records 1950-1991 Premise or Road Intersection Matches

Universal Business Directory records 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
	No records in buffer						

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Business Directory Records 1950-1991

Road or Area Matches

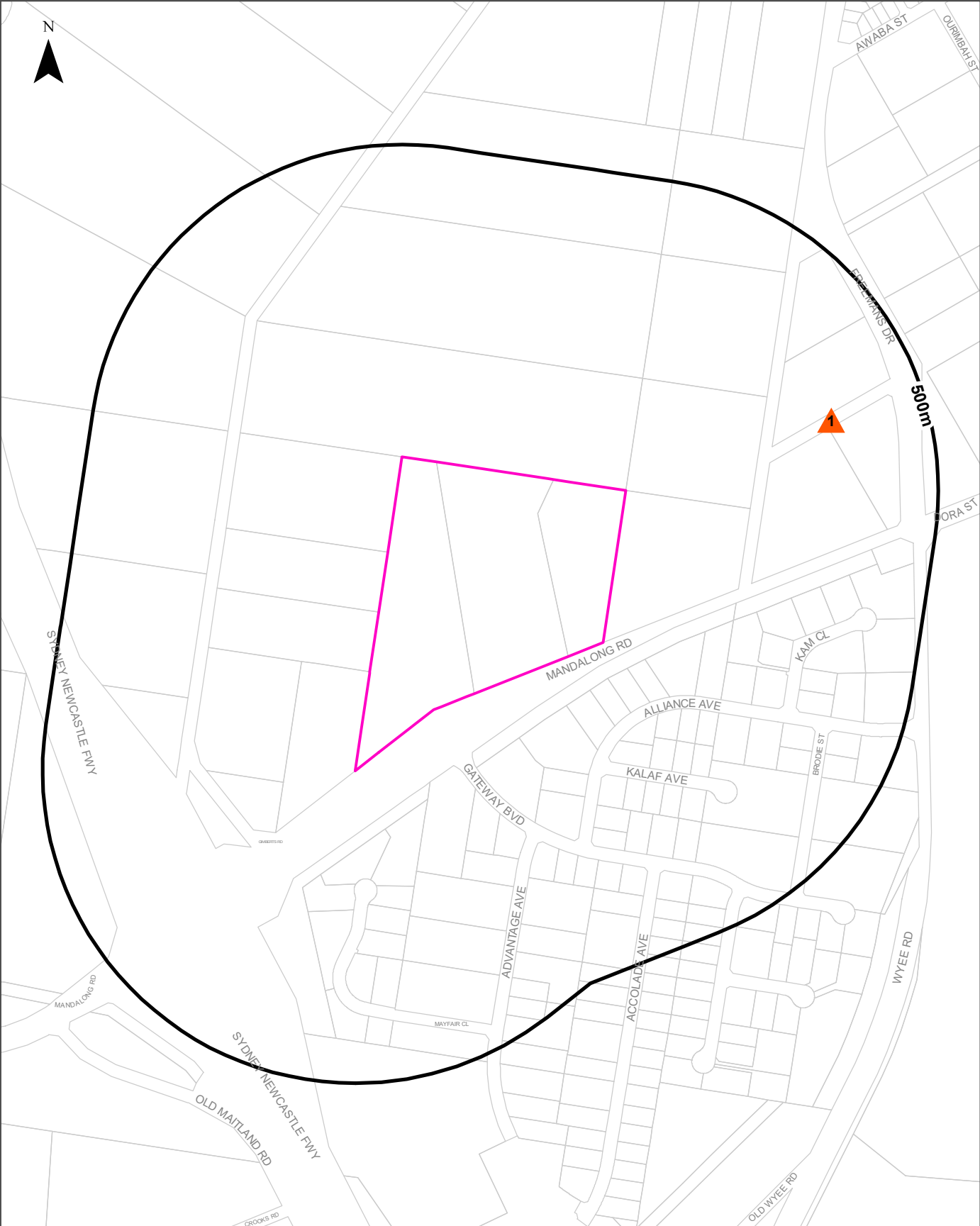
Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
1	NOT LISTED	Central Truck Rentals., 173 Mandalong Rd, Morisset	79346	1991	Road Match	0m
	NOT LISTED	Pioneer Concrete (N S W) Pty Ltd., Mandalong Rd, Morisset	79475	1991	Road Match	0m
	NOT LISTED	Turf., 173 Mandalong Rd, Morisset	79513	1991	Road Match	0m
2	NOT LISTED	Grange Mobile Home Village The., Gimberts Rd, Morisset	79402	1991	Road Match	0m

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Dry Cleaners, Motor Garages & Service Stations

56-76 Mandalong Road, Morisset, NSW 2264



Legend		Scale: 	Coordinate System: GDA 1994 MGA Zone 56
 Site Boundary	 Business directory records mapped to a specific premise		
 Buffer 500m	 Business directory records mapped to a road intersection	Date: 21 December 2020	
 Property Boundary	 Business directory records mapped to a road corridor	Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018	
 Business directory records mapped to a general area			

Historical Business Directories

56-76 Mandalong Road, Morisset, NSW 2264

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
	No records in buffer						

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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
1	MOTOR GARAGES & ENGINEERS	Fennell, L. F., Newcastle St. Morisset	132736	1950	Road Match	234m

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Aerial Imagery 2020

56-76 Mandalong Road, Morisset, NSW 2264



Scale: 0 50 100 150 200 Meters	Data Sources: Aerial Imagery © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 21 December 2020
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Aerial Imagery 2015

56-76 Mandalong Road, Morisset, NSW 2264



Scale: 0 50 100 150 200 Meters	Data Sources: Aerial Imagery © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 21 December 2020
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Aerial Imagery 2010

56-76 Mandalong Road, Morisset, NSW 2264



Aerial Imagery 2005

56-76 Mandalong Road, Morisset, NSW 2264



Scale: 0 50 100 150 200 Meters	Data Source Aerial Imagery: © 2020 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 21 December 2020
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Aerial Imagery 2002

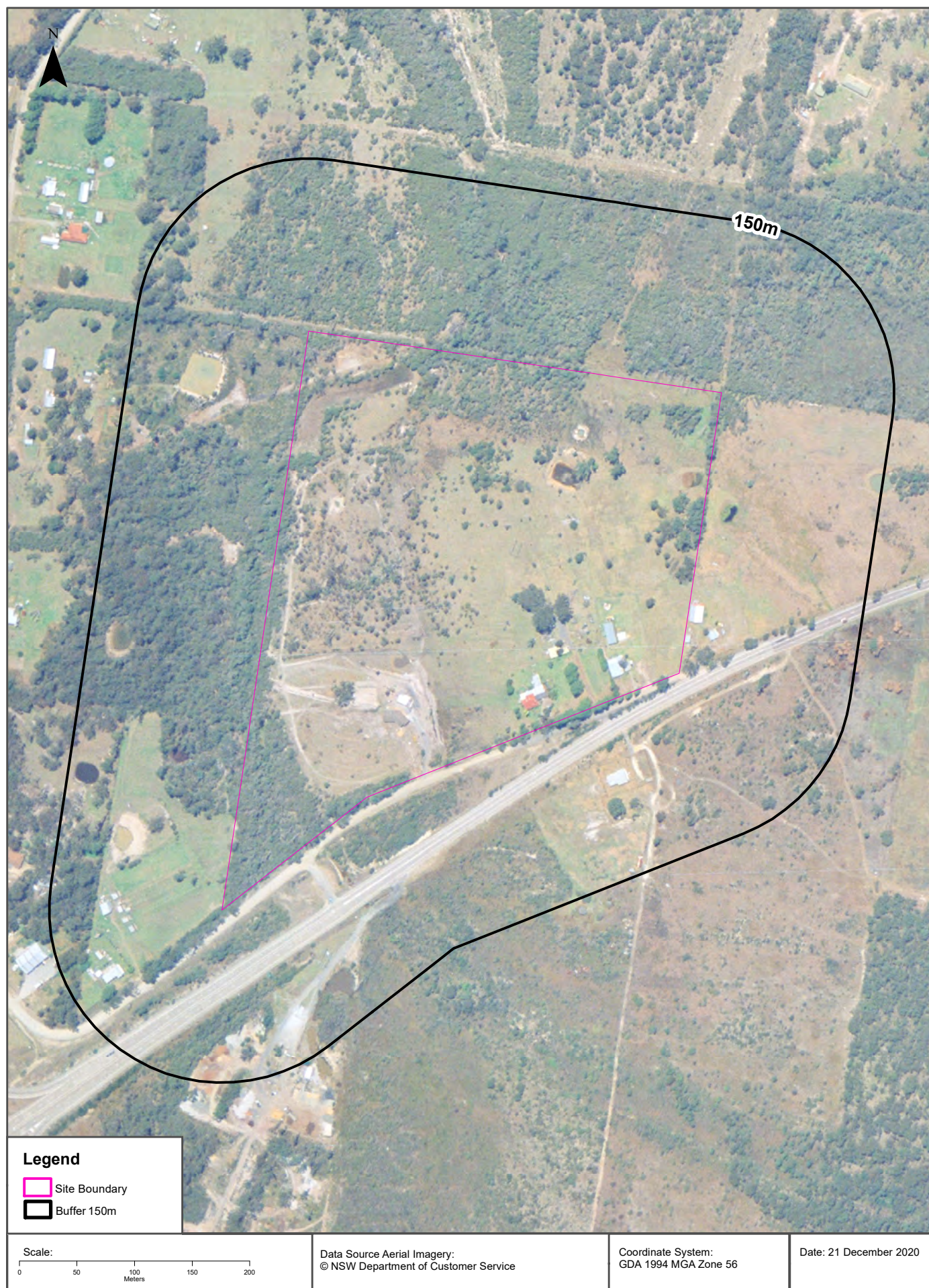
56-76 Mandalong Road, Morisset, NSW 2264

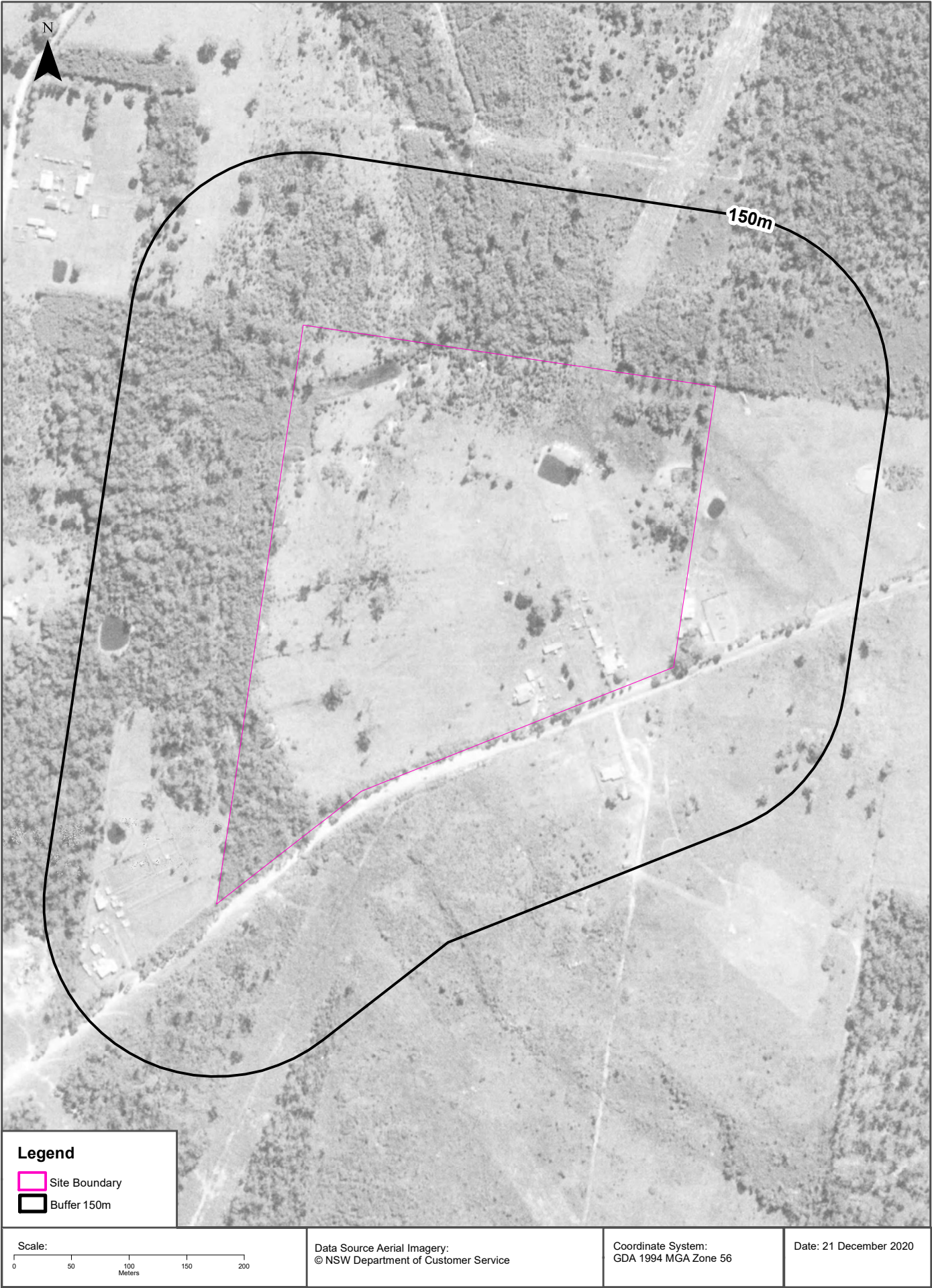


Scale: 0 50 100 150 200 Meters	Data Source Aerial Imagery: © 2020 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 21 December 2020
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Aerial Imagery 1994

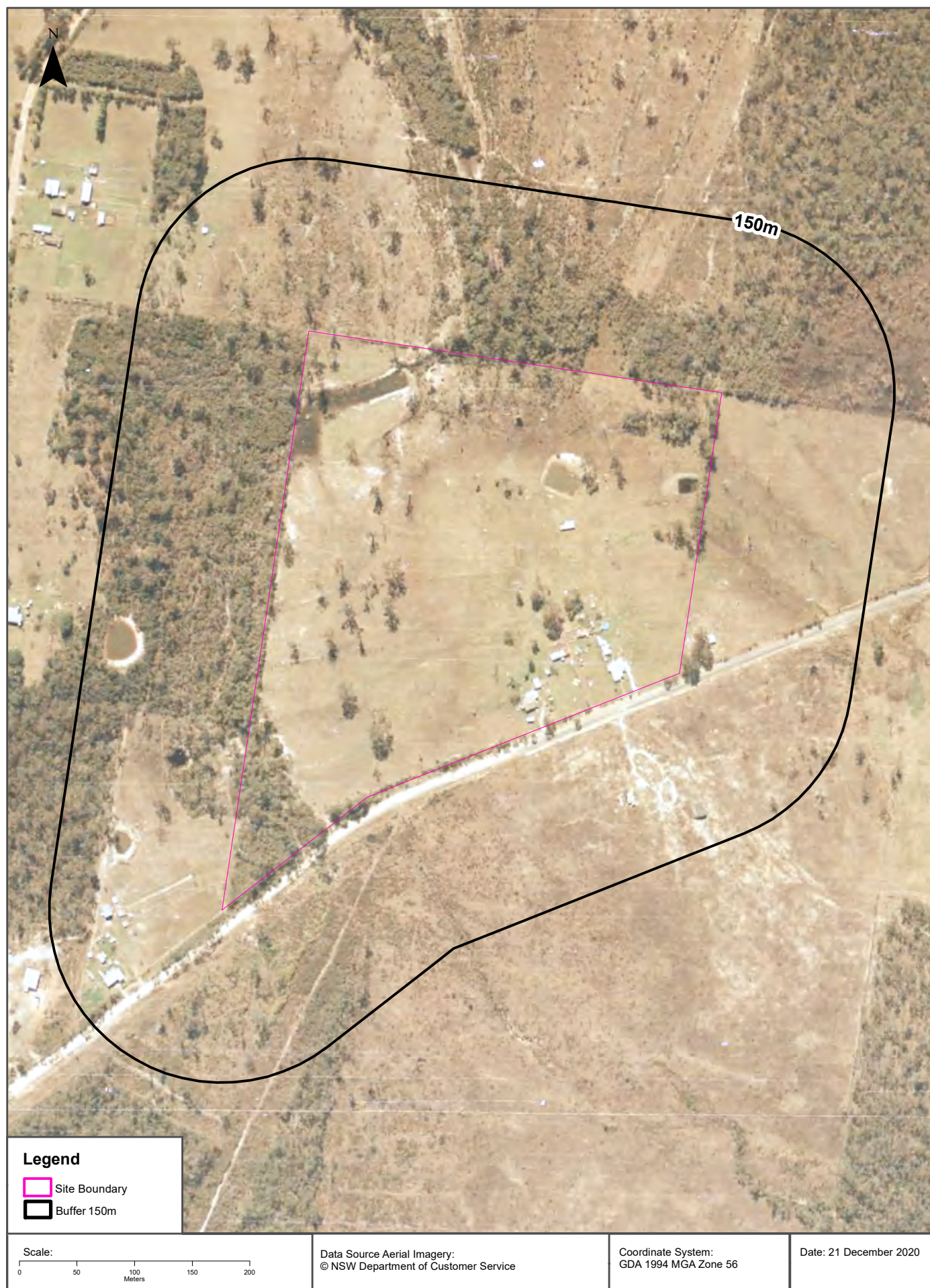
56-76 Mandalong Road, Morisset, NSW 2264





Aerial Imagery 1976

56-76 Mandalong Road, Morisset, NSW 2264



Aerial Imagery 1965

56-76 Mandalong Road, Morisset, NSW 2264



Aerial Imagery 1954

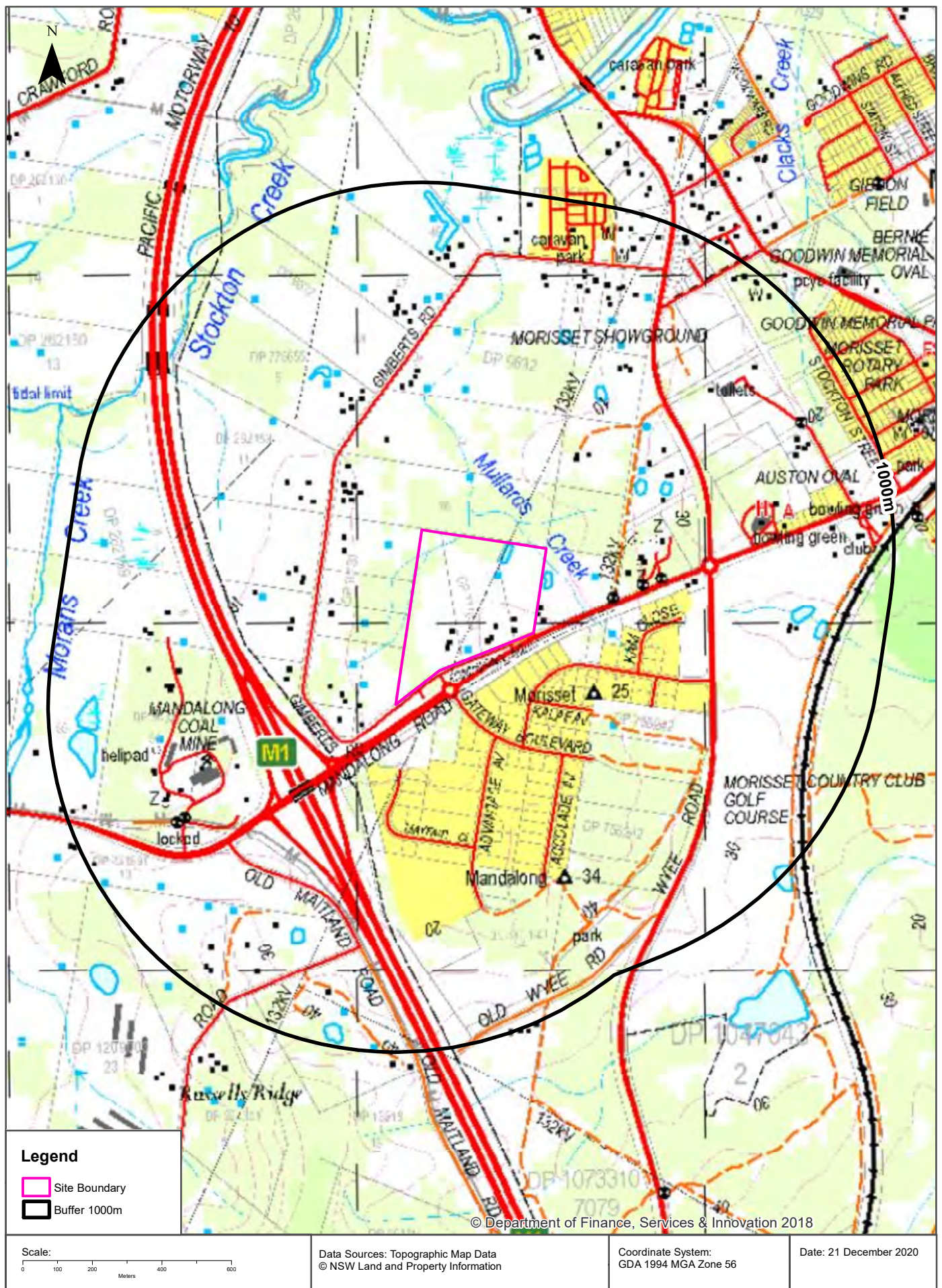
56-76 Mandalong Road, Morisset, NSW 2264



Scale: 0 50 100 150 200 Meters	Data Source Aerial Imagery: © NSW Department of Customer Service	Coordinate System: GDA 1994 MGA Zone 56	Date: 21 December 2020
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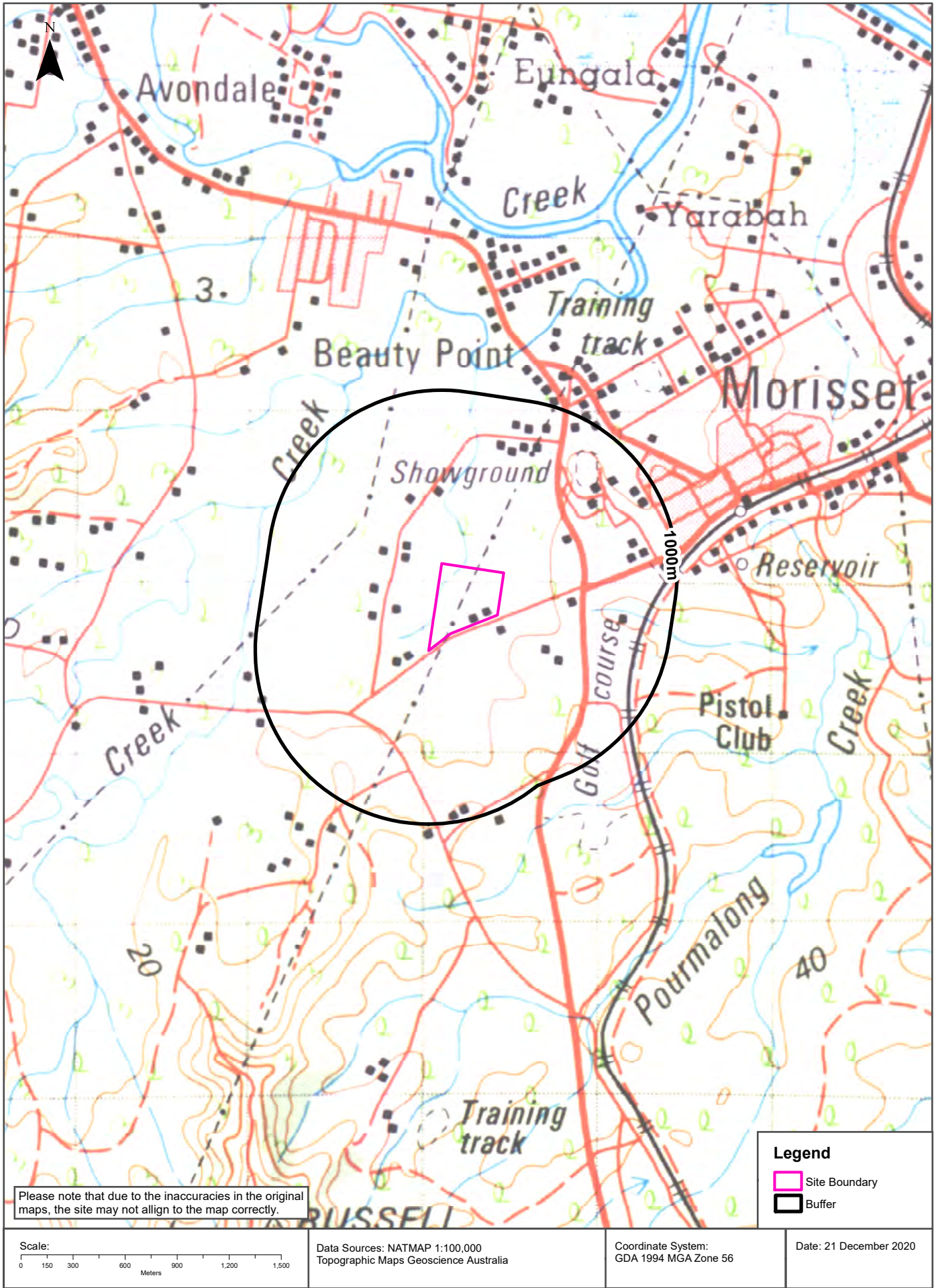
Topographic Map 2015

56-76 Mandalong Road, Morisset, NSW 2264



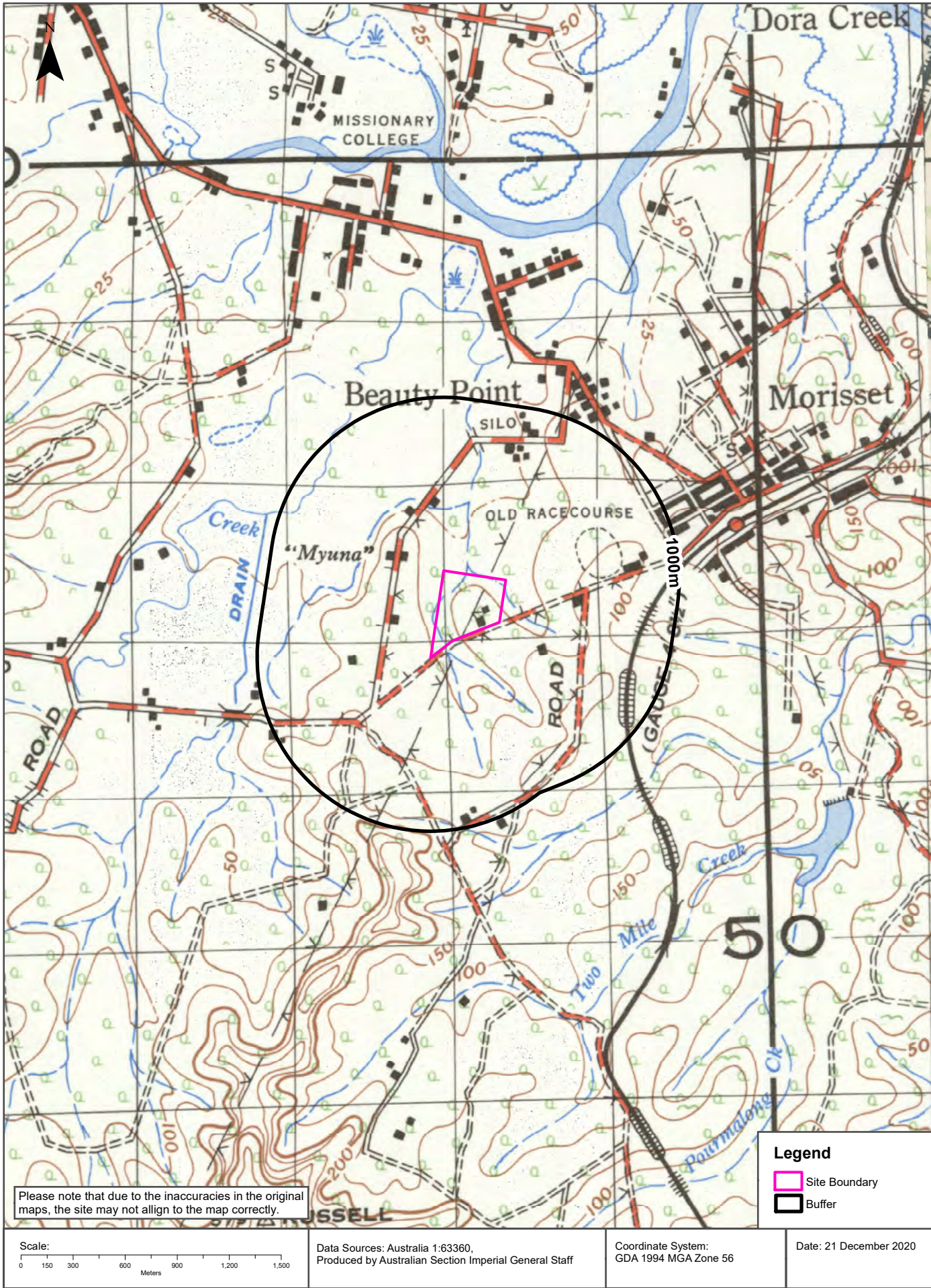
Historical Map 1975

56-76 Mandalong Road, Morisset, NSW 2264



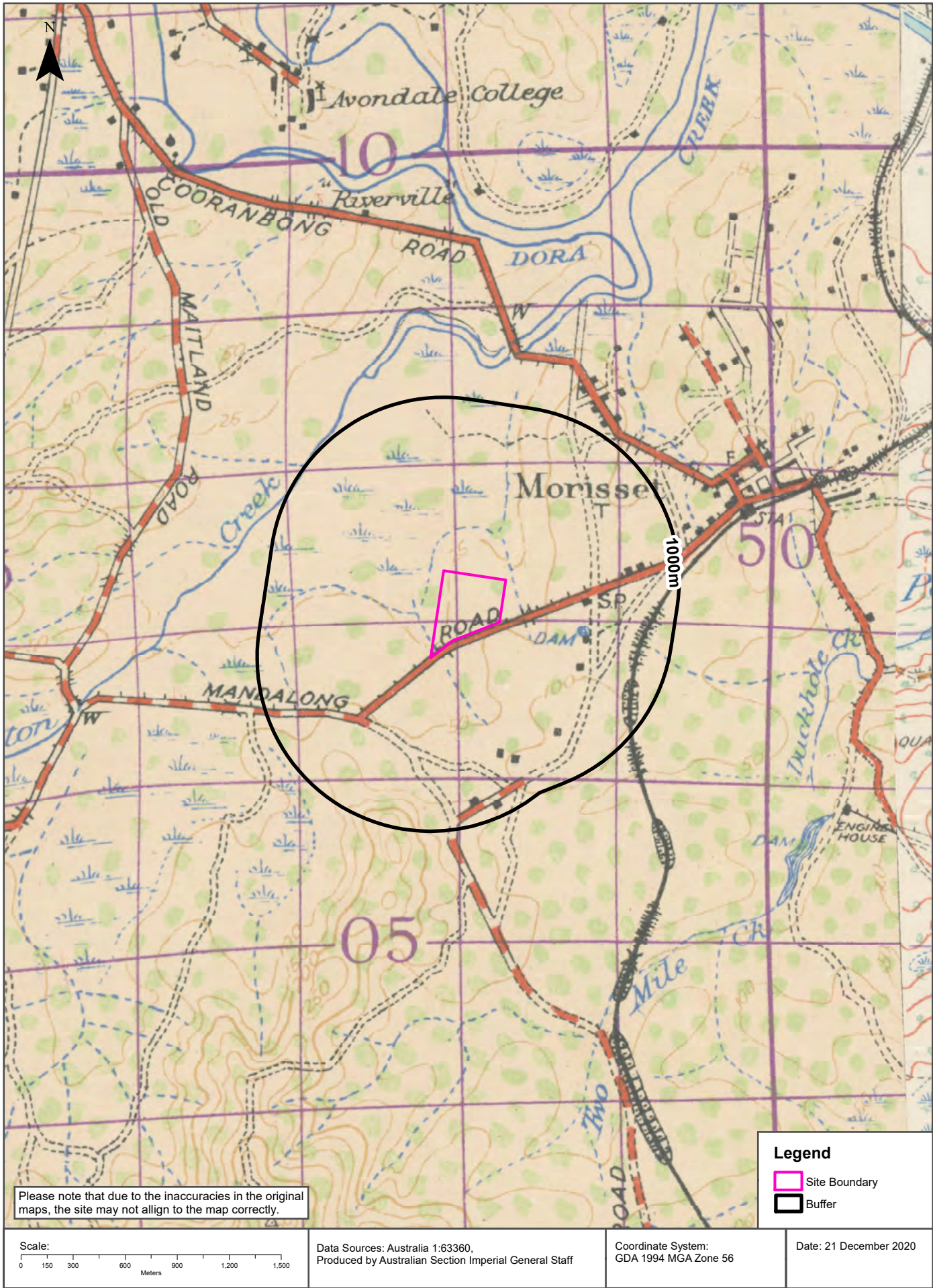
Historical Map c.1959

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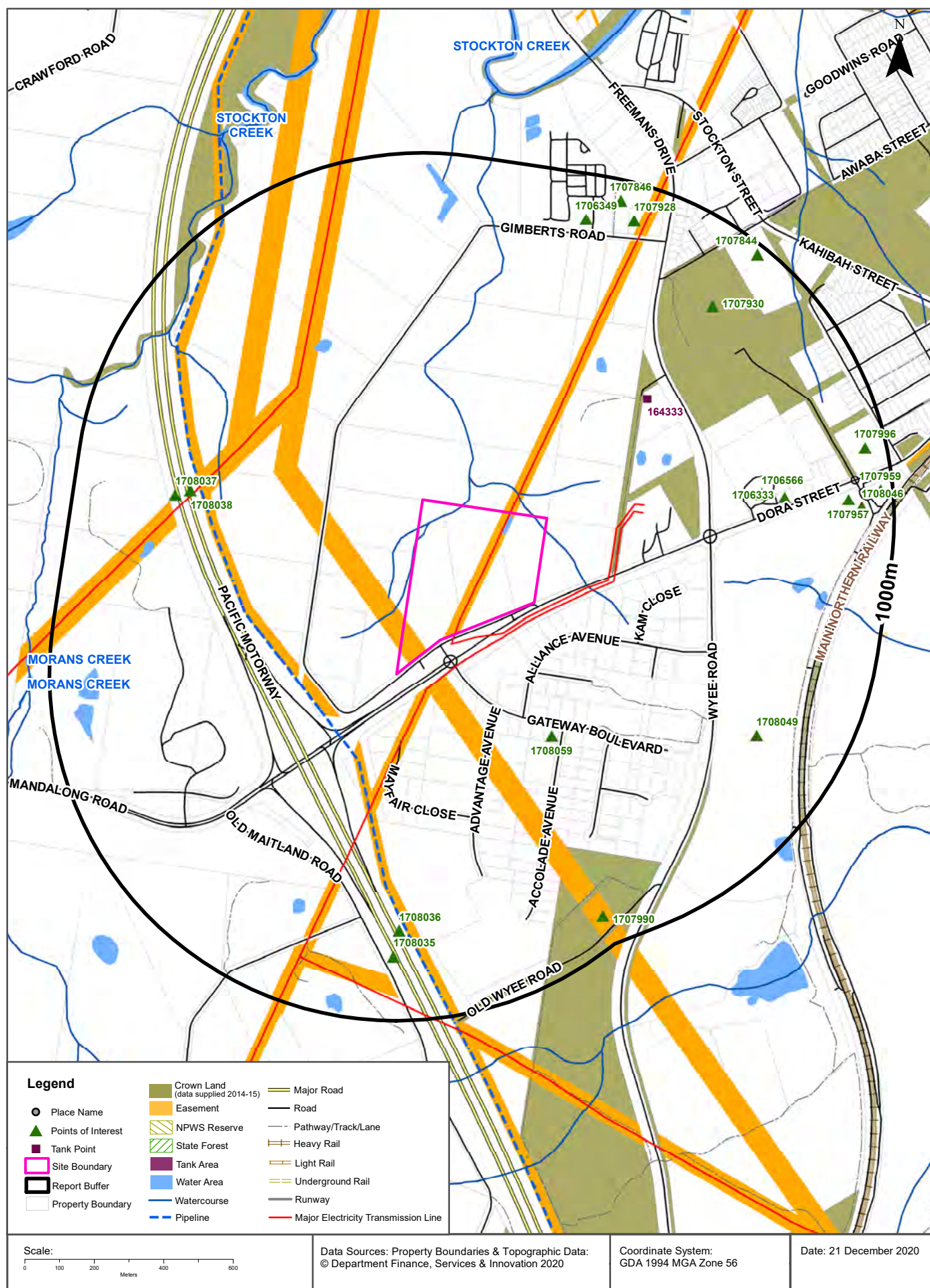
Historical Map c.1926

56-76 Mandalong Road, Morisset, NSW 2264



Topographic Features

56-76 Mandalong Road, Morisset, NSW 2264



Topographic Features

56-76 Mandalong Road, Morisset, NSW 2264

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
1708059	Child Care Centre	DINKY DI CHILDRENS LEARNING CENTRE	375m	South East
1706566	Community Medical Centre	MORISSET COMMUNITY HEALTH CENTRE	622m	East
1708038	Roadside Emergency Telephone	566	665m	West
1706333	Ambulance Station	MORISSET AMBULANCE STATION	686m	East
1708037	Roadside Emergency Telephone	565	707m	West
1708036	Roadside Emergency Telephone	564	740m	South
1708049	Golf Course	MORISSET COUNTRY CLUB GOLF COURSE	745m	South East
1707930	Showground	MORISSET SHOWGROUND	774m	North East
1708035	Roadside Emergency Telephone	563	815m	South
1707957	Sports Field	BOWLING GREEN	869m	East
1706349	Tourist Park / Home Village	INGENIA LIFESTYLE THE GRANGE	869m	North
1707928	Place Of Worship	BUDDHIST TEMPLE	893m	North East
1708046	Club	MORISSET COUNTRY CLUB	907m	East
1707990	Park	Park	912m	South
1707996	Sports Field	AUSTON OVAL	938m	East
1707846	Place Of Worship	SEVENTH DAY ADVENTIST CHURCH	940m	North
1707959	Sports Field	BOWLING GREEN	963m	East
1707844	Place Of Worship	UNITING CHURCH	972m	North East

Topographic Data Source: © Land and Property Information (2015)

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Topographic Features

56-76 Mandalong Road, Morisset, NSW 2264

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
	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
164333	Water	Operational		24/10/2011	449m	North East

Tanks Data Source: © Land and Property Information (2015)

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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
120111418	Primary	Undefined		0m	Onsite
120119229	Primary	Undefined		0m	Onsite
120115282	Primary	Undefined		0m	North East
120111394	Primary	Undefined		84m	South
120116081	Primary	Undefined		206m	North
120116008	Primary	Undefined		312m	North East
120115315	Primary	Undefined		444m	North
120107546	Primary	Undefined		460m	West
120107533	Primary	Undefined		585m	North East
120115306	Primary	Undefined		612m	South West
120109779	Primary	Undefined		690m	South
120113183	Primary	Undefined		798m	South
120112120	Primary	Undefined		856m	North East

Easements Data Source: © Land and Property Information (2015)

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Topographic Features

56-76 Mandalong Road, Morisset, NSW 2264

State Forest

What State Forest exist within the dataset buffer?

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

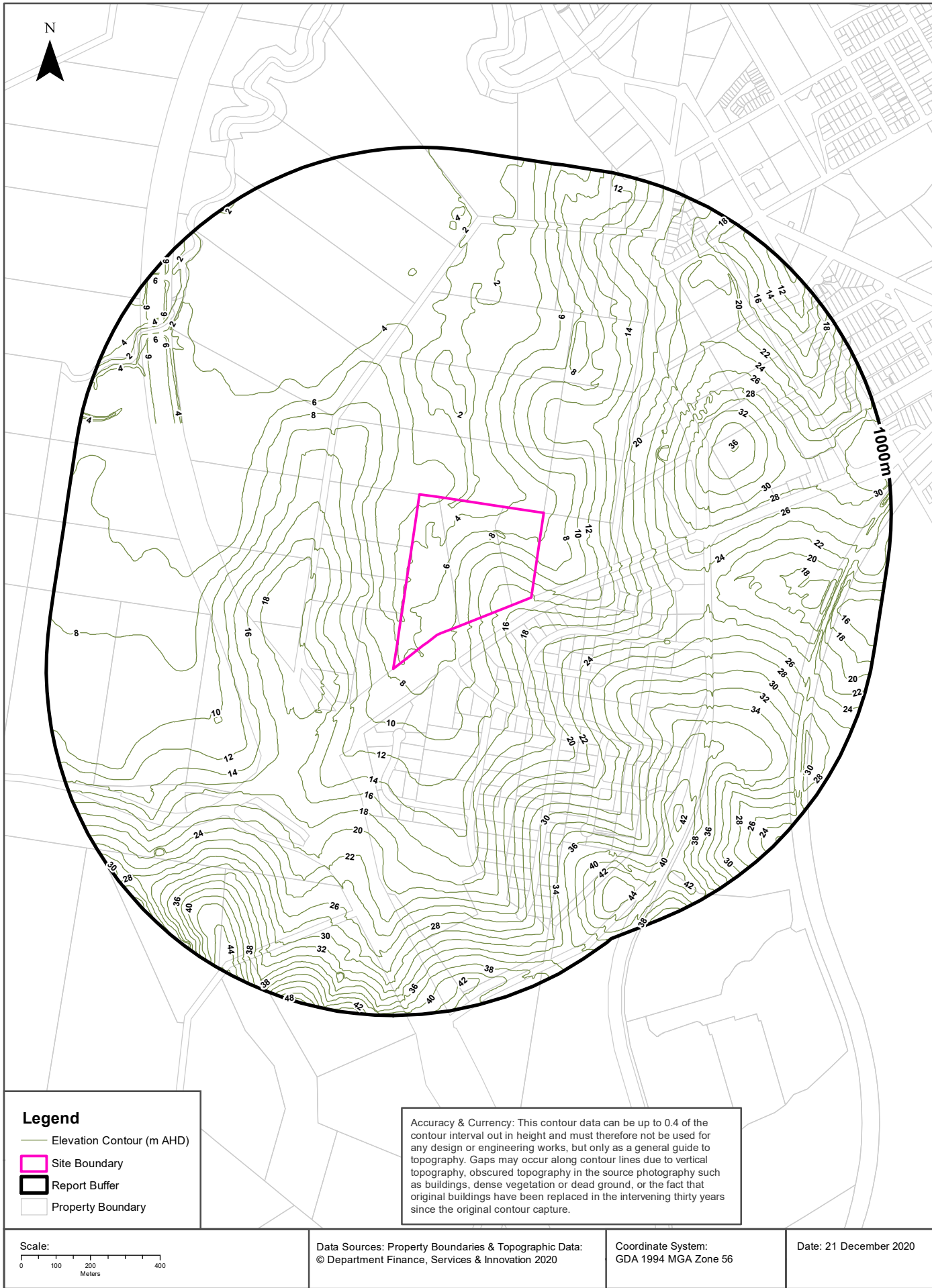
State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)
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National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)
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Hydrogeology & Groundwater

56-76 Mandalong Road, Morisset, NSW 2264

Hydrogeology

Description of aquifers on-site:

Description
Porous, extensive aquifers of low to moderate productivity

Description of aquifers within the dataset buffer:

Description
Porous, extensive aquifers of low to moderate productivity

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

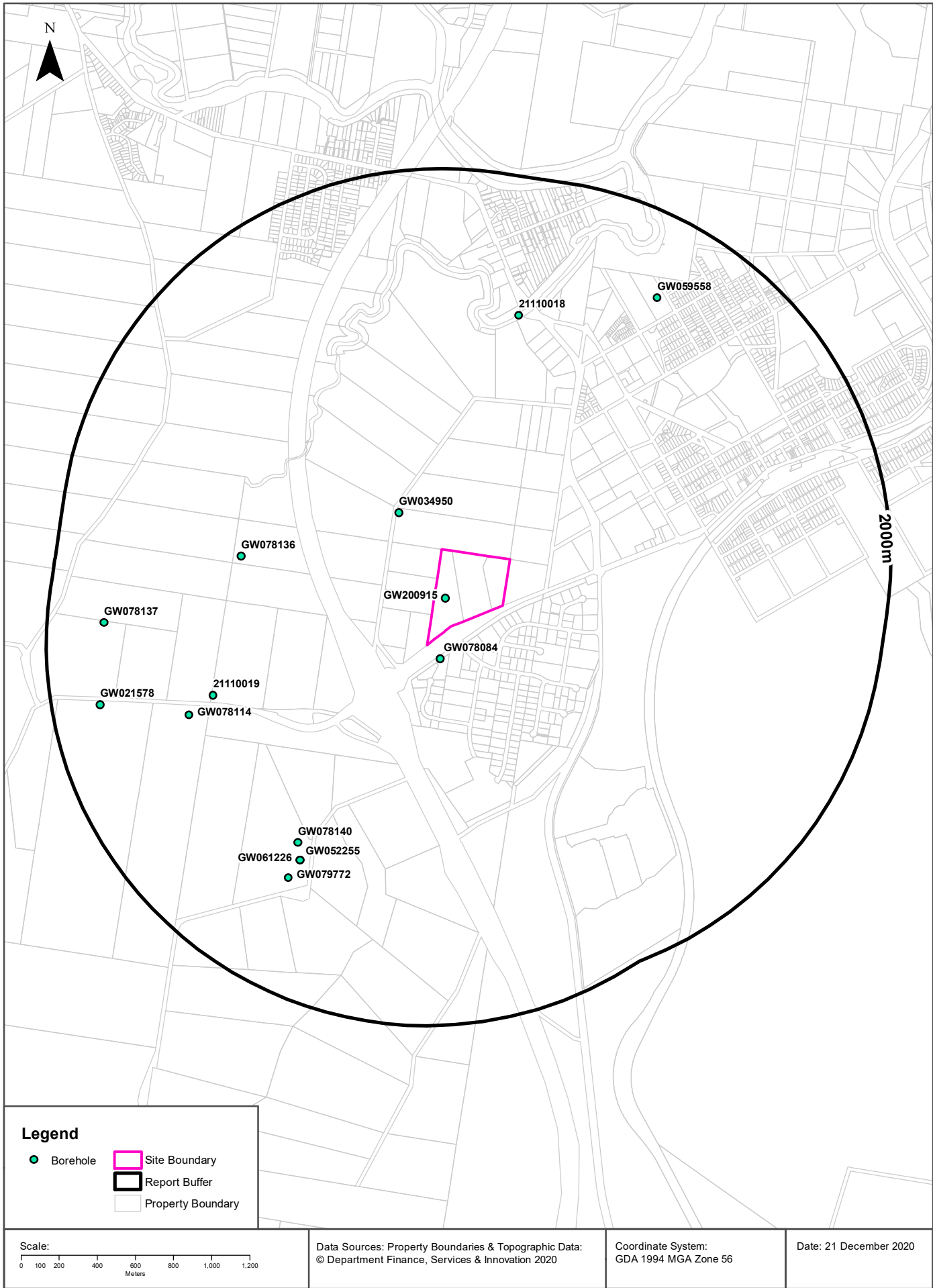
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Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

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



Hydrogeology & Groundwater

56-76 Mandalong Road, Morisset, NSW 2264

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW200915	20BL166066	Bore	Private	Domestic, Stock	Domestic, Stock		01/01/1994	60.00	60.00					0m	Onsite
GW078084	20BL166612	Bore		Domestic, Stock	Domestic, Stock		22/05/1996	62.00	62.00	Fresh				100m	South
GW034950	20BL027960	Bore open thru rock	Private	Domestic, Stock	Domestic, Stock		01/01/1973	76.20	76.20	Poor				295m	North West
GW078136	20BL166760	Bore		Monitoring Bore	Monitoring Bore		03/06/1997	9.00	13.70	370				1033m	West
21110019					UNK								11.01	1154m	South West
GW078140	20BL166740	Bore		Test Bore	Test Bore		11/02/1998	180.00	180.00	634	16.00	0.200		1240m	South West
21110018					UNK								2.42	1273m	North
GW078114	20BL166765	Bore		Monitoring Bore	Monitoring Bore		04/06/1997	12.00	14.60	650				1301m	South West
GW052255	20BL116708	Bore open thru rock	Private	Stock	Stock		01/11/1980	114.00	114.00					1312m	South West
GW061226	20BL133107	Bore	Private	Domestic, Stock	Domestic, Stock		01/07/1985	117.30	117.30	3001-7000 ppm				1312m	South West
GW079772	20BL166740	Bore		Test Bore	Test Bore		19/02/1998	234.00	234.00	1500	8.00	0.300		1423m	South West
GW059558	20BL131322	Well	Private	Domestic, Farming, Stock	Farming		01/07/1984	5.00	5.00					1578m	North East
GW078137	20BL166761	Bore		Monitoring Bore			03/06/1997	5.50	21.90	2720				1700m	West
GW021578	20BL013946	Spear	Private	Domestic, Stock	Domestic, Stock		01/03/1964	3.60	3.70	Fair				1744m	West

Borehole Data Source : NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation for all bores prefixed with GW. All other bores © Commonwealth of Australia (Bureau of Meteorology) 2015. Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Hydrogeology & Groundwater

56-76 Mandalong Road, Morisset, NSW 2264

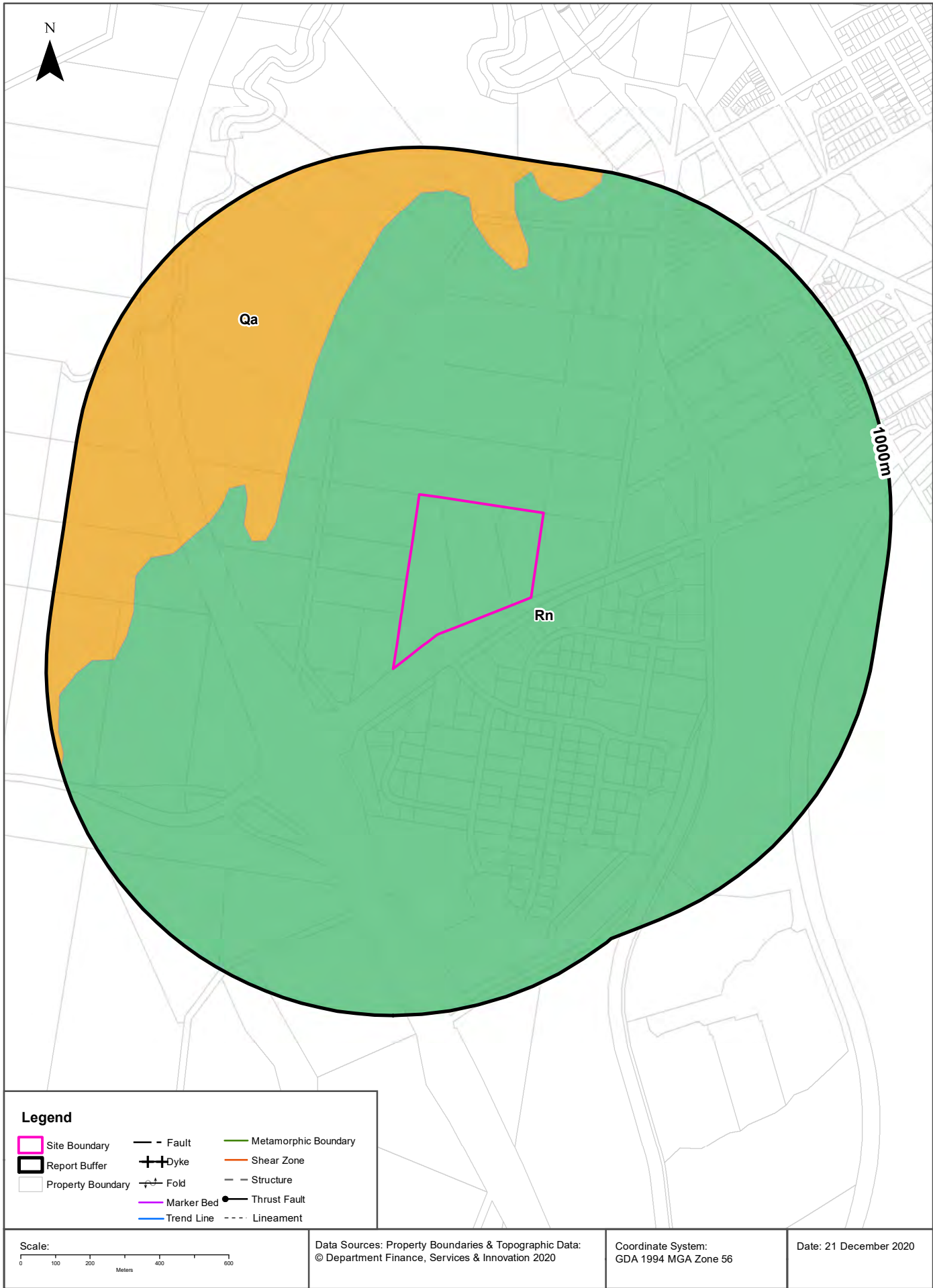
Driller's Logs

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

Groundwater No	Drillers Log	Distance	Direction
GW078084	0.00m-0.50m Topsoil 0.50m-1.50m Clay Red 1.50m-3.80m Sandy Clay White 3.80m-6.20m Decomposed Sandstone Brown 6.20m-6.50m Sandstone Yellow (W.B.) 6.50m-10.00m Sandstone Yellow 10.00m-21.30m Mudstone Grey 21.30m-21.60m Sandstone Grey (W.B.) 21.60m-26.00m Sandstone Grey 26.00m-31.30m Shale 31.30m-58.00m Conglomerate 58.00m-62.00m Shale/Conglomerate	100m	South
GW034950	0.00m-0.30m Soil 0.30m-7.62m Clay 7.62m-27.43m Sandstone Soft Shale 27.43m-38.10m Sandstone 38.10m-76.20m Conglomerate Water Supply	295m	North West
GW078136	0.00m-0.60m Soil, black clay loam 0.60m-1.00m Clay 1.00m-2.00m Clay, Silty 2.00m-6.00m Sand, fine, silty 6.00m-7.30m Sand, medium 7.30m-8.20m Sand, fine, clayey 8.20m-10.40m Sand, medium to coarse 10.40m-12.20m Sand, fine to medium 12.20m-13.70m Sand, very fine to fine, clayey - possibly weathered bedrock	1033m	West
GW078140	0.00m-4.50m Sandy Clay 4.50m-7.60m Sandstone M/Grain Yellow 7.60m-16.00m Clay 16.00m-18.50m Conglomerate 18.50m-24.00m Sandstone M/G Grey 24.00m-27.50m Clay 27.50m-28.50m Sandstone F/Grain Grey 28.50m-37.00m Conglomerate 37.00m-39.50m Sandstone F/Grain L/Grey 39.50m-45.60m Claystone D/Grey 45.60m-47.00m Sandstone M/Grain L/Grey 47.00m-106.50m Conglomerate 106.50m-120.00m Sandstone F/Grain L/Grey 120.00m-124.50m Conglomerate 124.50m-139.00m Sandstone F/Grain L/Grey 139.00m-144.50m Conglomerate 144.50m-148.00m Sandstone M/Grain D/Grey 148.00m-151.00m Conglomerate 151.00m-164.00m Sandstone M/Grain Grey 164.00m-166.20m Coal 166.20m-168.50m Sandstone M/Grain Grey 168.50m-180.00m Conglomerate	1240m	South West
GW078114	0.00m-0.09m Soil, clay loam 0.09m-1.20m Clay, v dk grey, mottled 1.20m-3.60m Silt, mid orange - brown 3.60m-9.10m Clay, mid grey mottled orange 9.10m-9.40m Sand, fine, very clayey 9.40m-10.00m Clay, sandy, mid to light grey 10.00m-12.20m Sand, medium, clayey. Base of alluvium 12.20m-14.60m Clay, orange & light grey weathered bedrock	1301m	South West

Groundwater No	Drillers Log	Distance	Direction
GW052255	0.00m-15.00m Soil Soft Shale 15.00m-20.00m Sandstone 20.00m-24.00m Shale 24.00m-40.00m Sandstone 40.00m-58.00m Shale Water Supply 58.00m-62.00m Conglomerate Sandstone 62.00m-67.00m Conglomerate 67.00m-72.00m Shale 72.00m-84.00m Conglomerate Fine 84.00m-114.00m Conglomerate Coarse Water Supply	1312m	South West
GW061226	0.00m-3.04m Clay 3.04m-10.66m Shale Reddish 10.66m-13.71m Sandstone 13.71m-16.76m Shale 16.76m-22.86m Sandstone 22.86m-46.90m Conglomerate 46.90m-48.76m Sandstone Water Supply 48.76m-88.00m Conglomerate 88.00m-88.39m Shale Water Supply 88.39m-106.00m Conglomerate 106.00m-106.60m Shale Water Supply 106.60m-117.34m Conglomerate	1312m	South West
GW079772	0.00m-7.00m clay, sand 7.00m-11.50m sandstone, med grained grey 11.50m-37.00m conglomerate 37.00m-44.00m sandstone, grey, fine grained 44.00m-93.40m conglomerate 93.40m-95.00m sandstone, grey, ce,ented 95.00m-101.00m conglomerate 101.00m-139.00m sandstone, grey, fine grained 139.00m-155.80m sandstone, light grey, coarse grained 155.80m-158.00m coal, water bearing 158.00m-161.00m sandstone, light grey, med grained 161.00m-174.00m conglomerate 174.00m-178.50m sandstone, grey cemented 178.50m-179.00m sandstone, grey fine 179.00m-180.00m coal 180.00m-218.00m conglomerate 218.00m-221.00m coal 221.00m-225.00m sandstone, and clay, fine grained 225.00m-234.00m conglomerate	1423m	South West
GW059558	0.00m-0.60m Topsoil 0.60m-1.00m Clay Yellow 1.00m-5.00m Gravel White Clayey	1578m	North East
GW078137	0.00m-0.50m Soil, Very dark brown clay loam 0.50m-2.00m Clay, dark grey mottled orange 2.00m-2.50m Sand, V Fine, Clayey 2.50m-4.60m Clay, Sandy, Light & Dark Grey 4.60m-5.50m Sand, Fine, Silty 5.50m-7.00m Clay, Sandy 7.00m-7.60m Clay 7.60m-10.30m Clay, Sandy, Light grey 10.30m-12.80m Sand, very fine to fine, Silty 12.80m-15.50m Sand, fine to medium, Silty 15.50m-15.80m Sand, coarse to very coarse, dark grey 15.80m-18.00m Clay, Sandy 18.00m-18.60m Sand, Fine, Silty 18.60m-19.50m Clay, light grey-brown & mid grey 19.50m-21.90m Clay, mid greenish grey, weathered bedrock	1700m	West
GW021578	0.00m-2.43m Clay 2.43m-3.65m Sand Water Supply	1744m	West

Drill Log Data Source: NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corp
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Geology

56-76 Mandalong Road, Morisset, NSW 2264

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Rn	Sandstone, interbedded sandstone and siltstone, claystone. conglomerate and sandstone (Widden Brook conglomerate)	Narrabeen Group	Narrabeen Group	Clifton Subgroup	Mesozoic			1:250,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Qa	Undifferentiated alluvial deposits; sand, silt, clay and gravel; some residual and colluvial deposits. Includes some channel, levee, lacustrine, floodplain and swamp deposits. May include some higher level Tertiary terraces	undifferentiated			Cainozoic			1:250,000
Rn	Sandstone, interbedded sandstone and siltstone, claystone. conglomerate and sandstone (Widden Brook conglomerate)	Narrabeen Group	Narrabeen Group	Clifton Subgroup	Mesozoic			1:250,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:250,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Dataset
No features				1:250,000

Geological Data Source : NSW Department of Industry, Resources & Energy

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Naturally Occurring Asbestos Potential

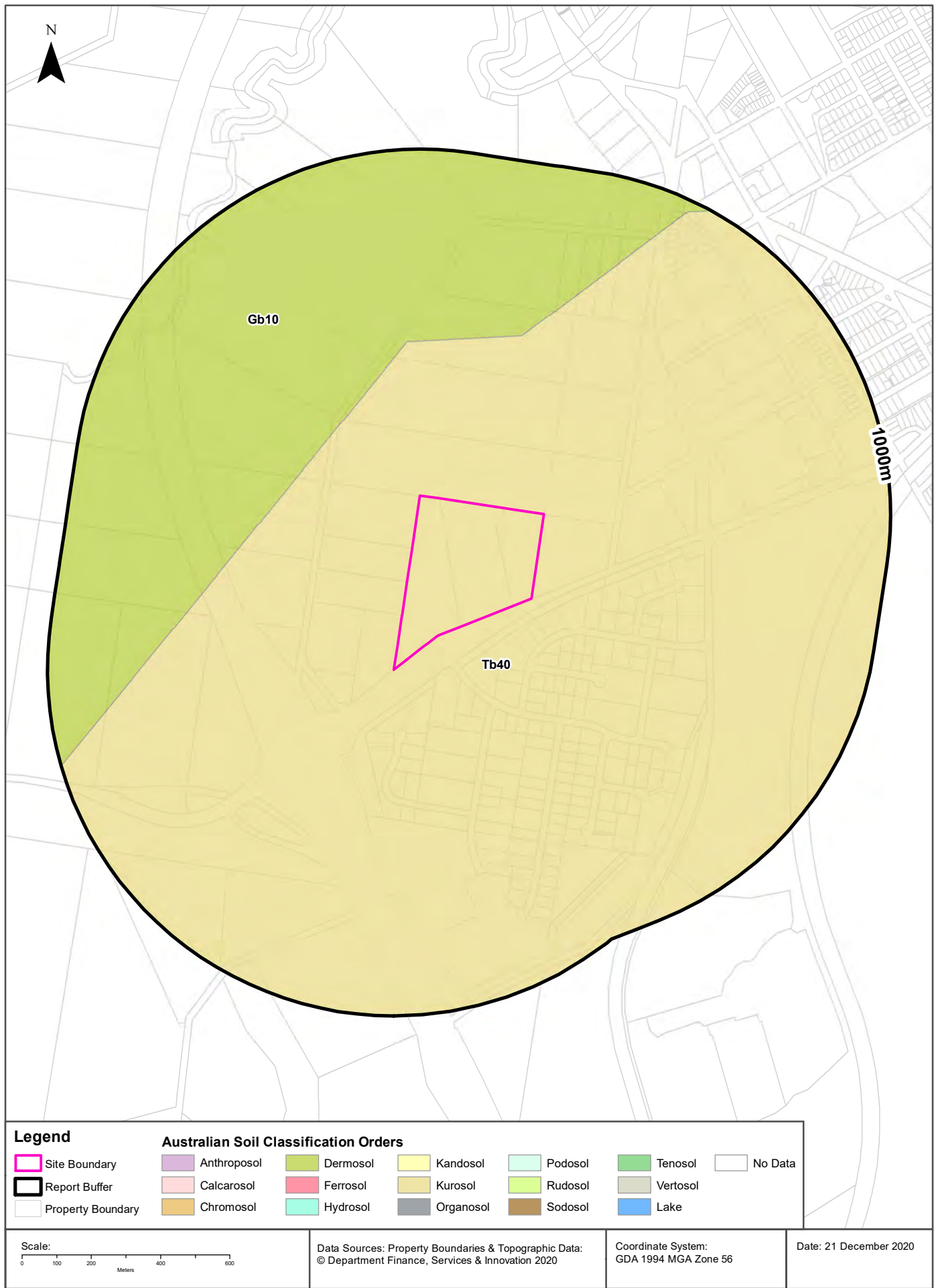
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Naturally Occurring Asbestos Potential

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												

Mining Subsidence District Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy



Soils

56-76 Mandalong Road, Morisset, NSW 2264

Atlas of Australian Soils

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

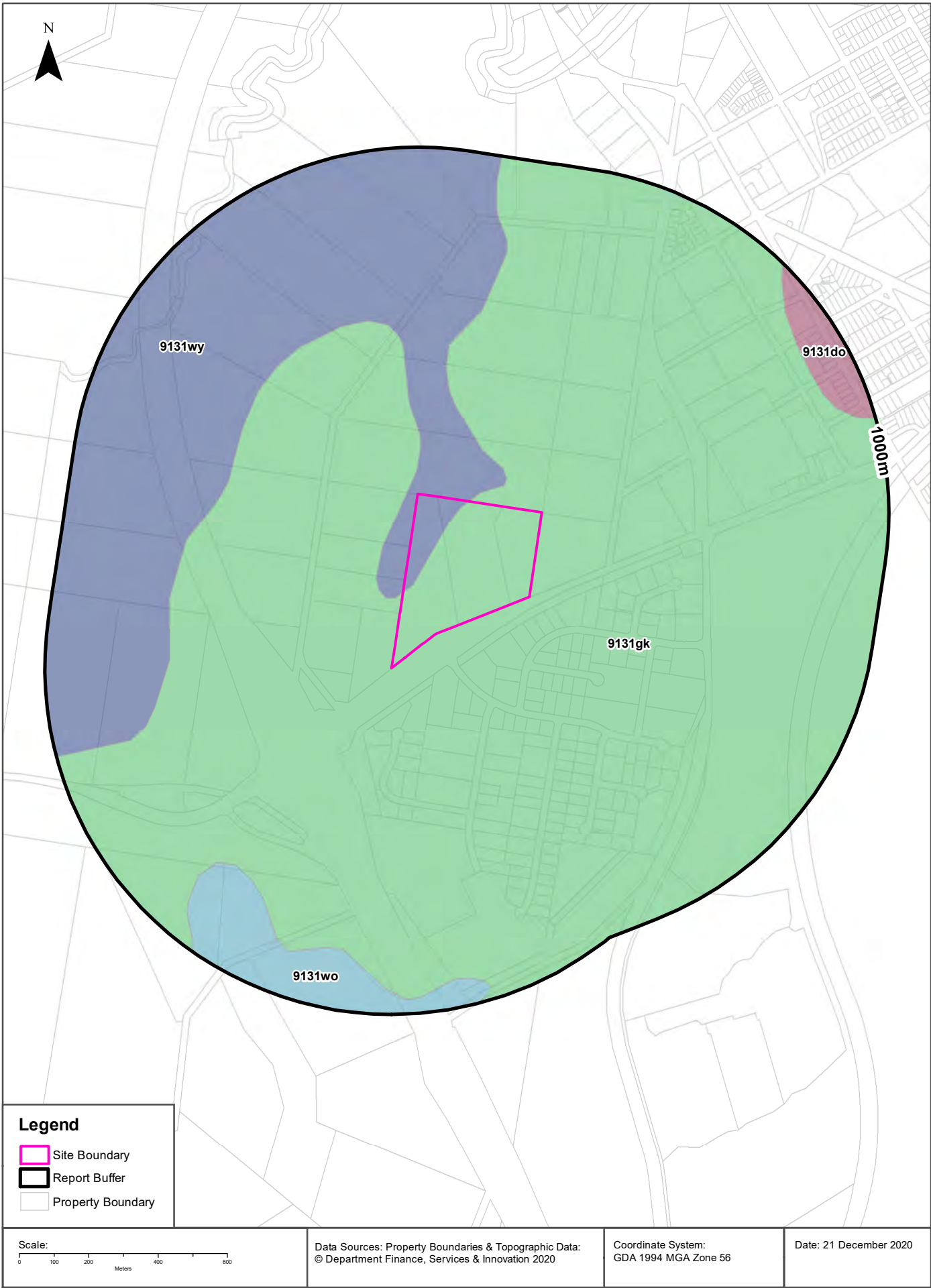
Map Unit Code	Soil Order	Map Unit Description	Distance
Tb40	Kurosol	Undulating to hilly areas with some steep slopes and cliffs, rock outcrops, and narrow terraced valleys: chief soils are hard acidic yellow mottled soils (Dy3.41) with some shallow soils such as (Um4.1) and (Uc4.1) on the steeper slopes. Associated are: (Gn2.2) soils and (Dd1) soils, both of which occur on slopes; undescribed soils in the valleys; and some (Dy5) and (Uc1 .2) soils along the coast. As mapped, small areas of units Gb10 and Cb28 are included.	0m
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.	310m

Atlas of Australian Soils Data Source: CSIRO

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Soil Landscapes of Central and Eastern NSW

56-76 Mandalong Road, Morisset, NSW 2264



Soils

56-76 Mandalong Road, Morisset, NSW 2264

Soil Landscapes of Central and Eastern NSW

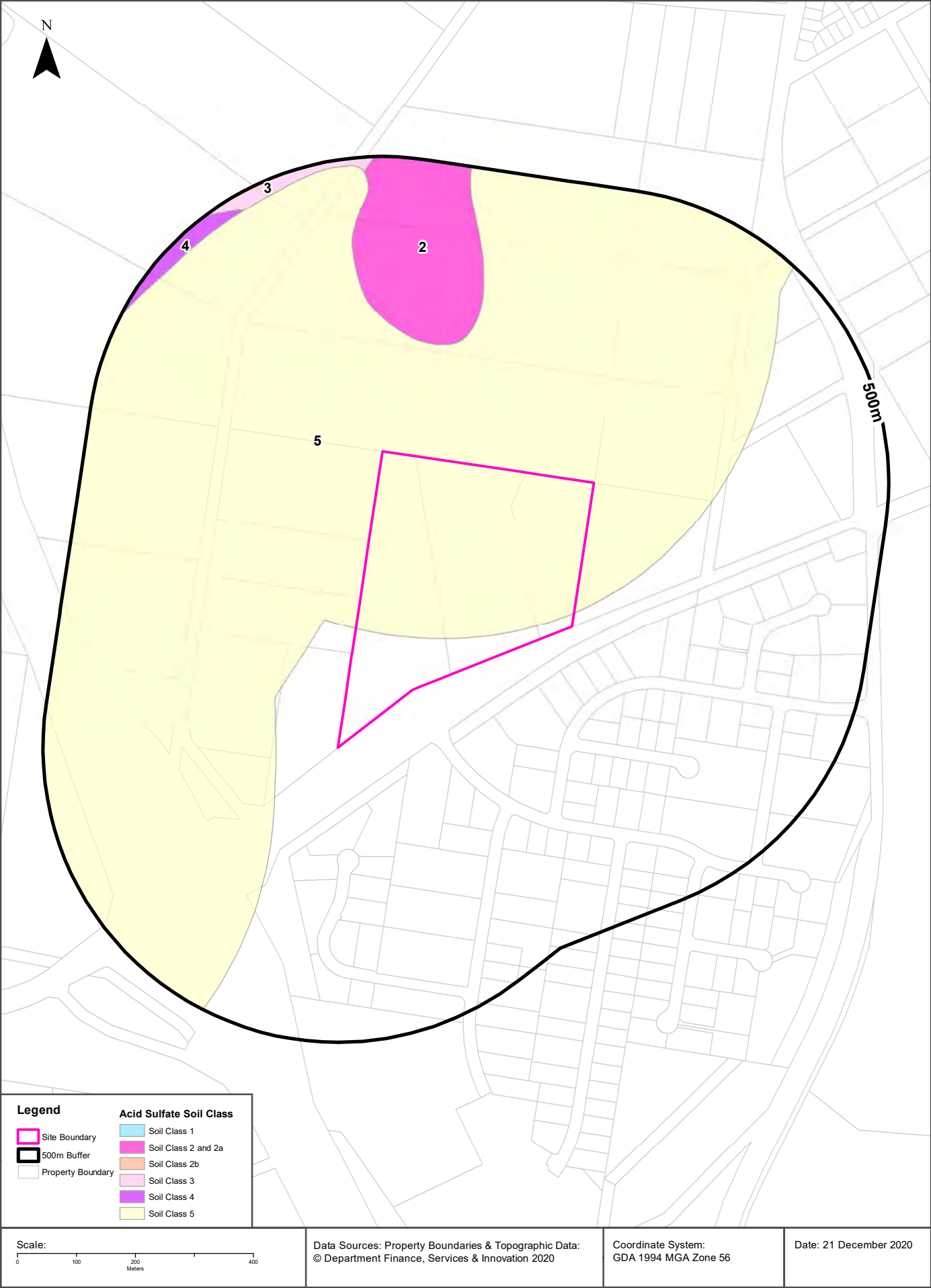
What are the on-site Soil Landscapes?

Soil Code	Name
9131gk	Gorokan
9131wy	Wyong

What are the Soil Landscapes within the dataset buffer?

Soil Code	Name
9131do	Doyalson
9131gk	Gorokan
9131wo	Woodburys Bridge
9131wy	Wyong

Soil Landscapes of Central and Eastern NSW: NSW Department of Planning, Industry and Environment
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Acid Sulfate Soils

56-76 Mandalong Road, Morisset, NSW 2264

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
5	Works within 500 metres of adjacent Class 1, 2, 3, or 4 land that is below 5 metres AHD and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk	Lake Macquarie Local Environmental Plan 2014

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

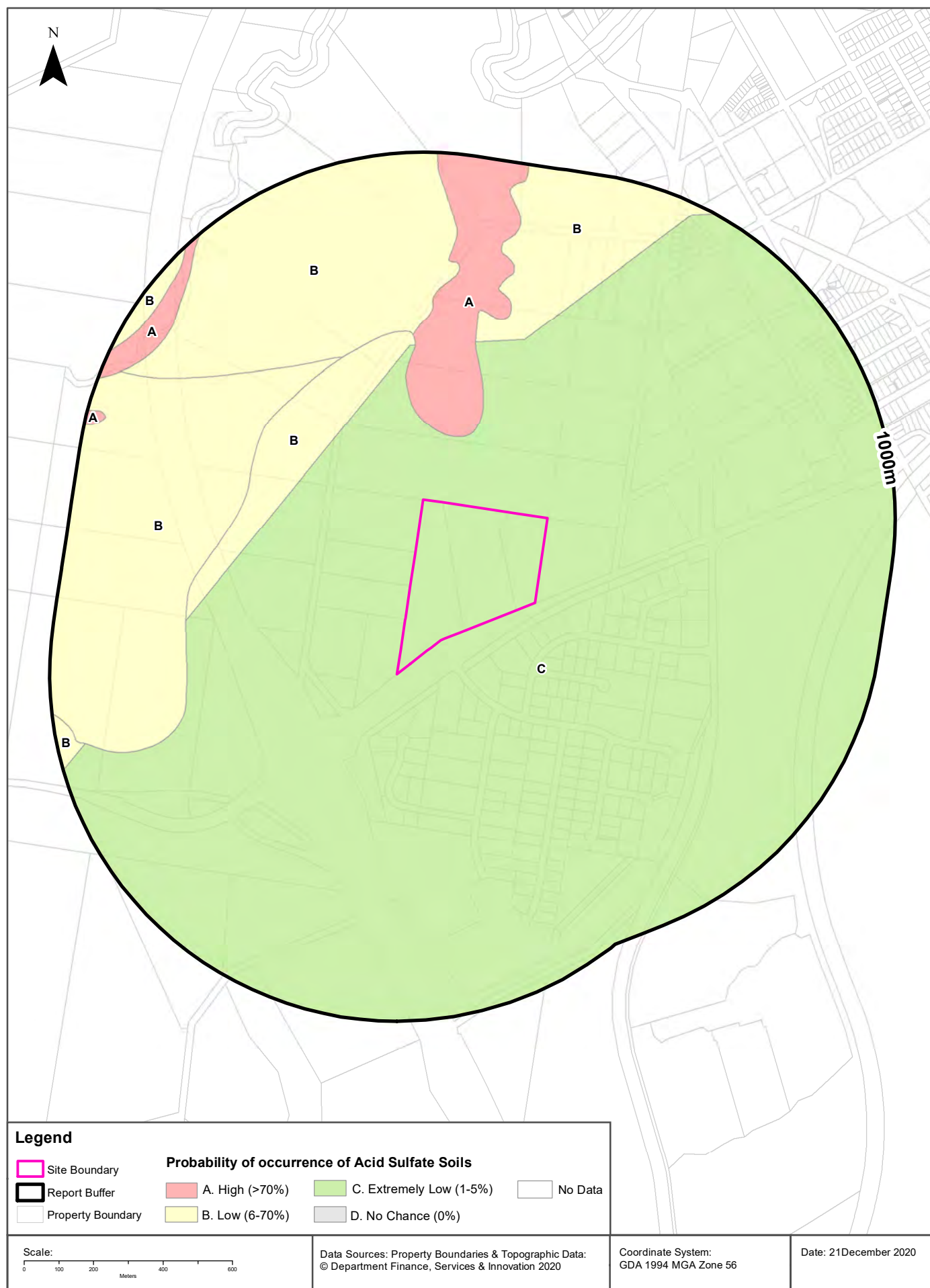
Soil Class	Description	EPI Name	Distance	Direction
2	Works below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered present an environmental risk	Lake Macquarie Local Environmental Plan 2014	192m	North
4	Works more than 2 metres below natural ground 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	Lake Macquarie Local Environmental Plan 2014	470m	North West
3	Works more than 1 metre below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered more than 1 metre below natural ground surface, present an environmental risk	Lake Macquarie Local Environmental Plan 2014	471m	North West

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Atlas of Australian Acid Sulfate Soils

56-76 Mandalong Road, Morisset, NSW 2264



Acid Sulfate Soils

56-76 Mandalong Road, Morisset, NSW 2264

Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m
A	High Probability of occurrence. >70% chance of occurrence.	192m
B	Low Probability of occurrence. 6-70% chance of occurrence.	311m

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

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Dryland Salinity

56-76 Mandalong Road, Morisset, NSW 2264

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	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.

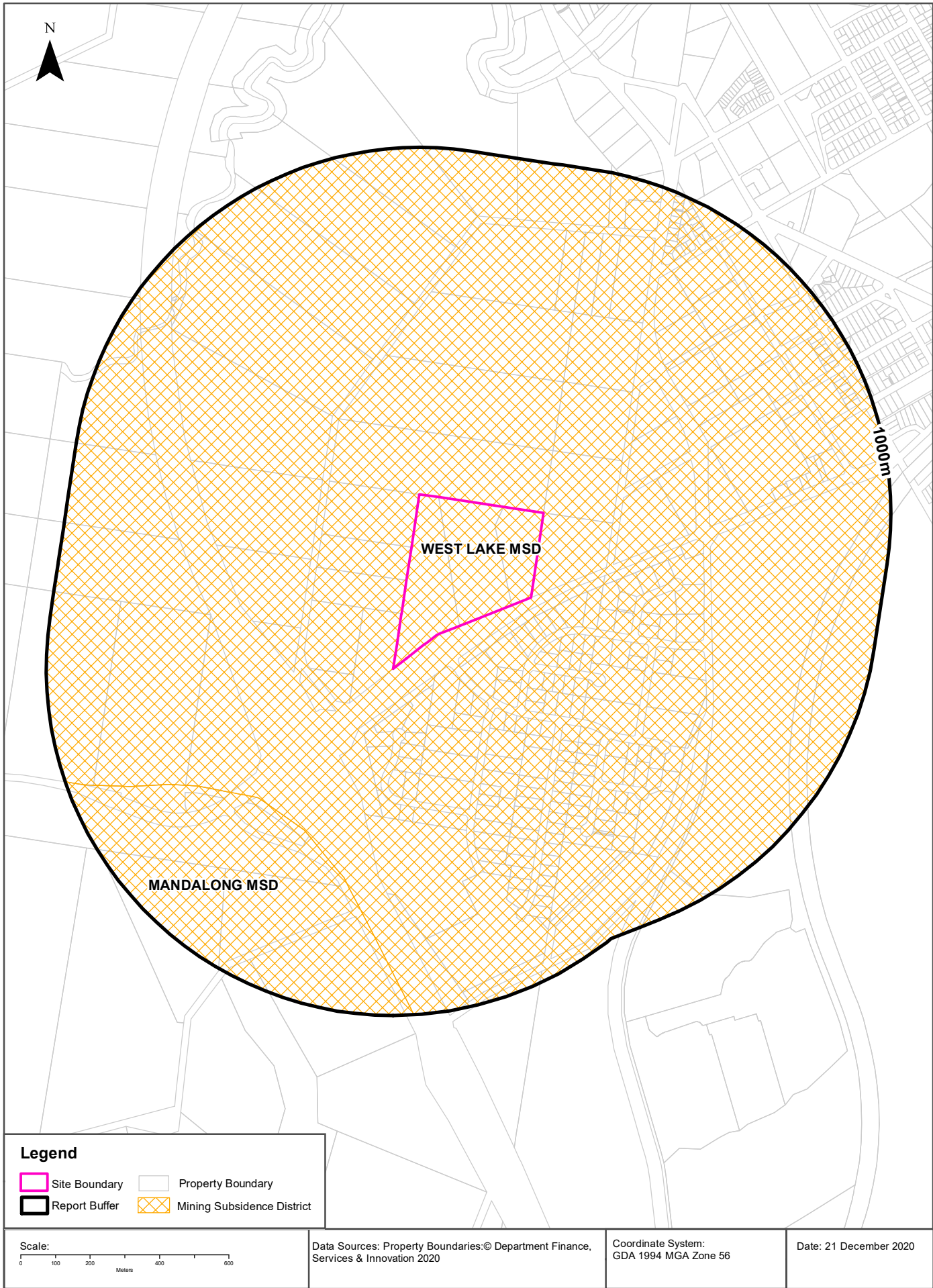
Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

Feature Id	Classification	Description	Distance	Direction
N/A	Outside Data Coverage			

Dryland Salinity Potential of Western Sydney Data Source : NSW Office of Environment and Heritage

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Mining

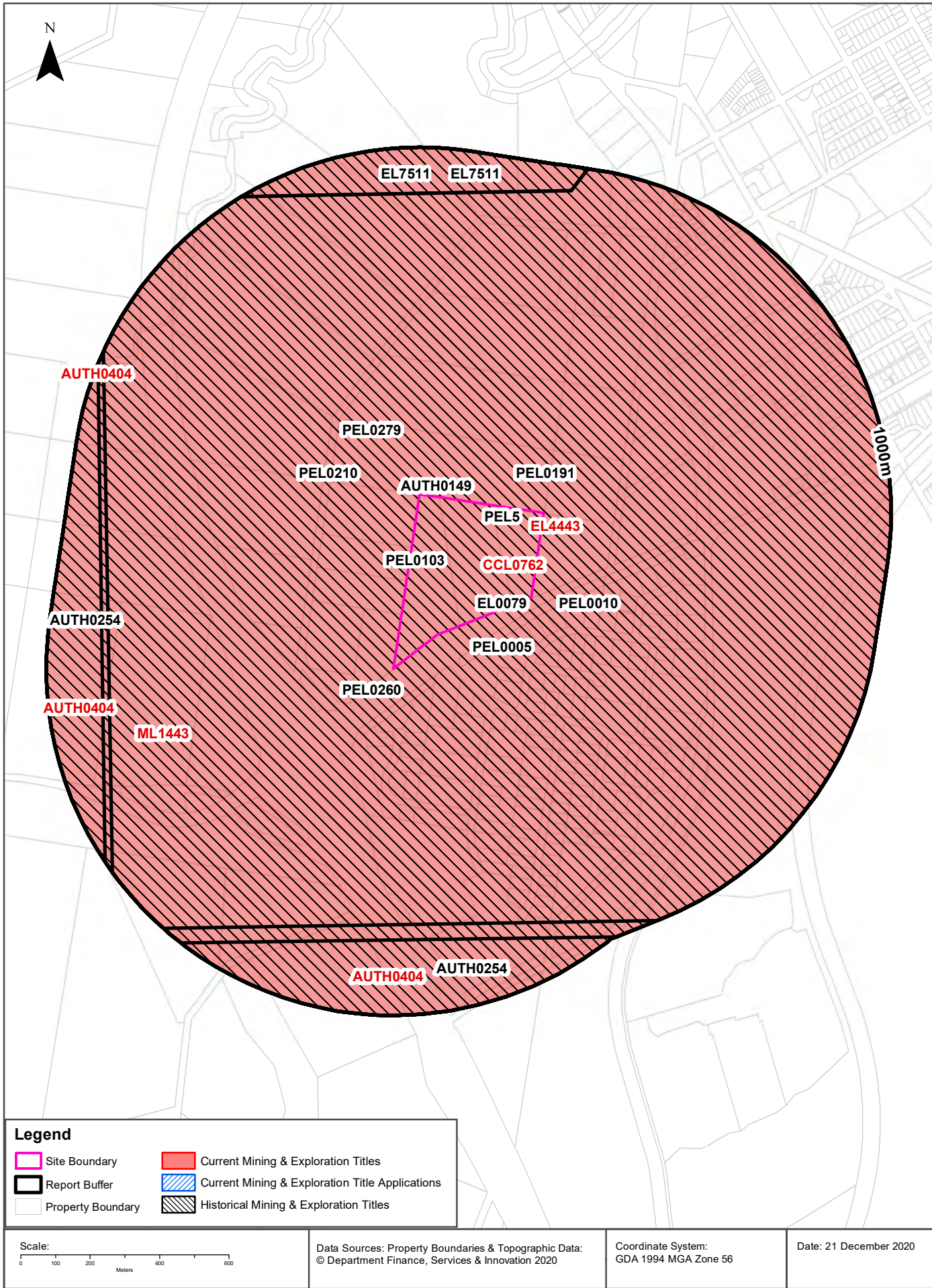
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Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
WEST LAKE	0m	Onsite
MANDALONG	528m	South West

Mining Subsidence District Data Source: © Land and Property Information (2016)
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Mining

56-76 Mandalong Road, Morisset, NSW 2264

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 (m)	Dir'
CCL0762	CENTENNIAL MANDALONG PTY LIMITED	16/09/91	13/10/22	13 Apr 2013	MINING	COAL	Coal, Petroleum	0m	Onsite
EL4443	CENTENNIAL MANDALONG PTY LIMITED	23/10/92	23/10/17	Renewal Sought	EXPLORING	COAL	Group 9	0m	Onsite
ML1443	CENTENNIAL MANDALONG PTY LIMITED	01/03/99	28/02/20	Renewal Sought	MINING	COAL	Coal, Petroleum	442m	South West
AUTH0404	CENTENNIAL MANDALONG PTY LIMITED	18/03/88	31/07/17	Renewal Sought	EXPLORING	COAL	Group 9	782m	South West

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 (m)	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

56-76 Mandalong Road, Morisset, NSW 2264

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist (m)	Dir'
AUTH0149	THE ELECTRICITY COMMISSION OF NSW (TRADING AS PACIFIC POWER)	03 Feb 1979	14 Feb 1992	COAL	Coal	0m	Onsite
EL0079	CONTINENTAL OIL CO OF AUSTRALIA LIMITED	01 Feb 1967	01 Feb 1968	MINERALS		0m	Onsite
PEL0005	AGL UPSTREAM INVESTMENTS PTY LIMITED	11/11/1993	4/03/2015	PETROLEUM	Petroleum	0m	Onsite
PEL0010	AUSTRALIAN OIL AND GAS CORPORATION LTD, UNION OIL DEVELOPMENT CORP., KERN COUNTY LAND CO.			PETROLEUM	Petroleum	0m	Onsite
PEL0103	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	Onsite
PEL0191	NORTHWEST OIL AND MINERALS CO NL			PETROLEUM	Petroleum	0m	Onsite
PEL0210	THE AUSTRALIAN GAS LIGHT COMPANY (AGL), NORTH BULLI COLLIERIES PTY LTD			PETROLEUM	Petroleum	0m	Onsite
PEL0260	NORTH BULLI COLLIERIES PTY LTD, AGL PETROLEUM OPERATIONS PTY LTD, THE AUSTRALIAN GAS LIGHT CO.	9/09/1981	8/03/1993	PETROLEUM	Petroleum	0m	Onsite
PEL0279	THE ELECTRICITY COMMISSION OF NSW (TRADING AS PACIFIC POWER)	17/04/1990	11/11/1993	PETROLEUM	Petroleum	0m	Onsite
PEL5	AGL UPSTREAM INVESTMENTS PTY LIMITED			MINERALS		0m	Onsite
AUTH0254	NSW DEPARTMENT OF MINERAL RESOURCES	15 Jan 1981	15 Jan 1985	COAL	Coal	738m	South West
EL7511	CENTENNIAL FASSIFERN PTY LTD			MINERALS		867m	North
EL7511	CENTENNIAL FASSIFERN PTY LTD	07 Apr 2010	07 Apr 2013	MINERALS	Geothermal	867m	North

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

State Environmental Planning Policy

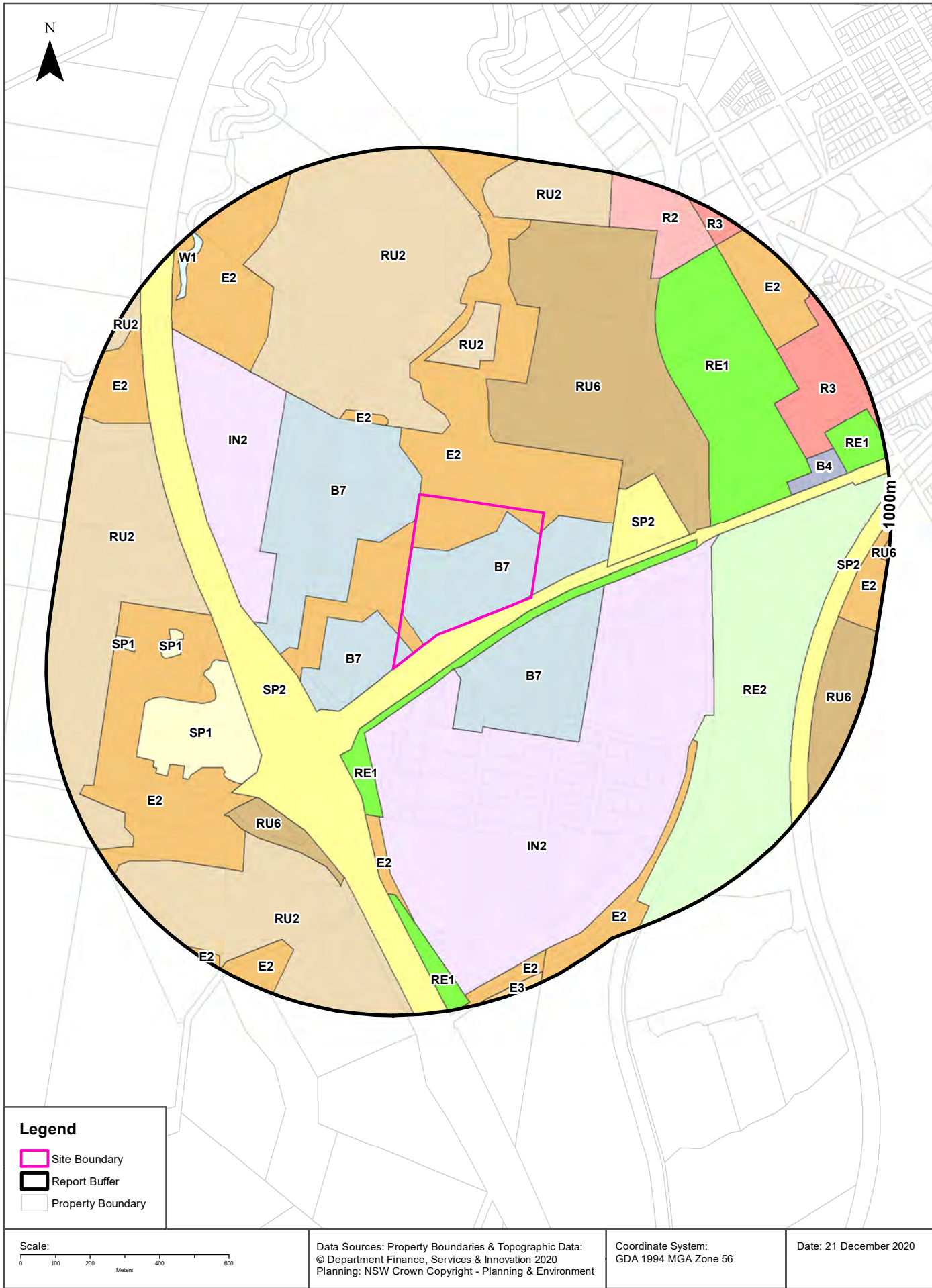
56-76 Mandalong Road, Morisset, NSW 2264

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
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Environmental Planning Instrument

56-76 Mandalong Road, Morisset, NSW 2264

Land Zoning

What EPI Land Zones exist within the dataset buffer?

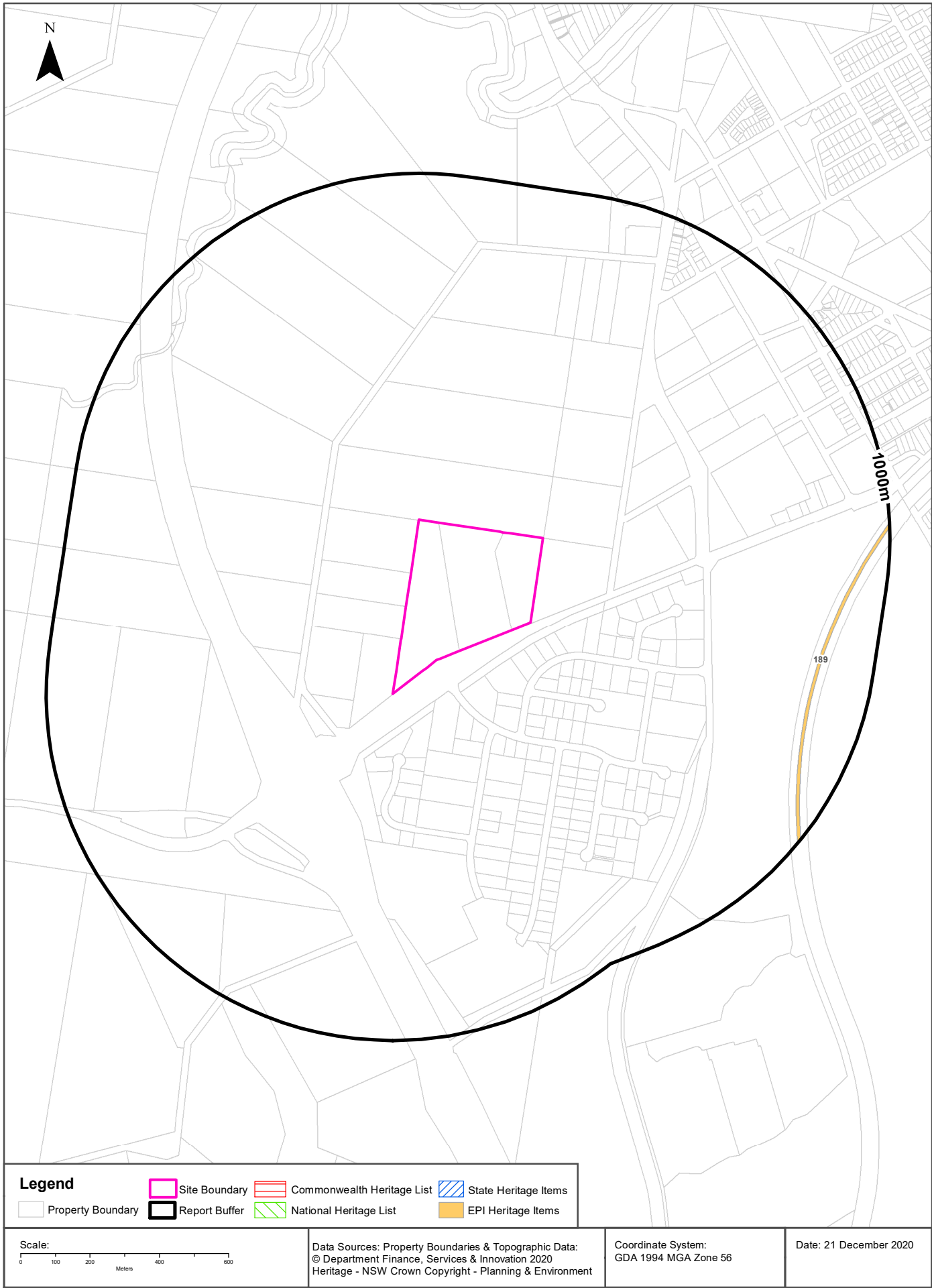
Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
B7	Business Park		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		0m	Onsite
E2	Environmental Conservation		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		0m	Onsite
SP2	Infrastructure	Infrastructure	Lake Macquarie Local Environmental Plan 2014	23/12/2016	23/12/2016	25/09/2020	Amendment No 16	0m	North East
RE1	Public Recreation		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		31m	South
B7	Business Park		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		55m	South East
IN2	Light Industrial		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		104m	South
RU2	Rural Landscape		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		181m	North
RU6	Transition		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		181m	North East
SP2	Infrastructure	Infrastructure	Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		201m	East
E2	Environmental Conservation		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		222m	North West
IN2	Light Industrial		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		382m	North West
RU2	Rural Landscape		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		382m	North
E2	Environmental Conservation		Lake Macquarie Local Environmental Plan 2014	08/05/2015	08/05/2015	25/09/2020	Amendment No 5	428m	South
SP1	Special Activities	Special Activities	Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		443m	South West
RE1	Public Recreation		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		476m	North East
E2	Environmental Conservation		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		477m	West
RE2	Private Recreation		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		490m	South East
RU6	Transition		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		528m	South West
RU2	Rural Landscape		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		543m	South West
RU2	Rural Landscape		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		594m	South West
SP1	Special Activities	Special Activities	Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		612m	West
E2	Environmental Conservation		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		619m	South
RE1	Public Recreation		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		648m	South
B4	Mixed Use		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		703m	East
R3	Medium Density Residential		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		732m	North East
R2	Low Density Residential		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		743m	North East
SP1	Special Activities	Special Activities	Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		747m	West
SP2	Infrastructure	Infrastructure	Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		808m	North East

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RU2	Rural Landscape		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		821m	North
RE1	Public Recreation		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		839m	East
RU6	Transition		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		859m	East
E2	Environmental Conservation		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		880m	East
W1	Natural Waterways		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		885m	North East
R3	Medium Density Residential		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		915m	North East
E2	Environmental Conservation		Lake Macquarie Local Environmental Plan 2014	08/05/2015	08/05/2015	25/09/2020	Amendment No 5	920m	South
RU2	Rural Landscape		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		934m	West
E3	Environmental Management		Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	25/09/2020		972m	South

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Heritage Items

56-76 Mandalong Road, Morisset, NSW 2264



Heritage

56-76 Mandalong Road, Morisset, NSW 2264

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
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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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
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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							

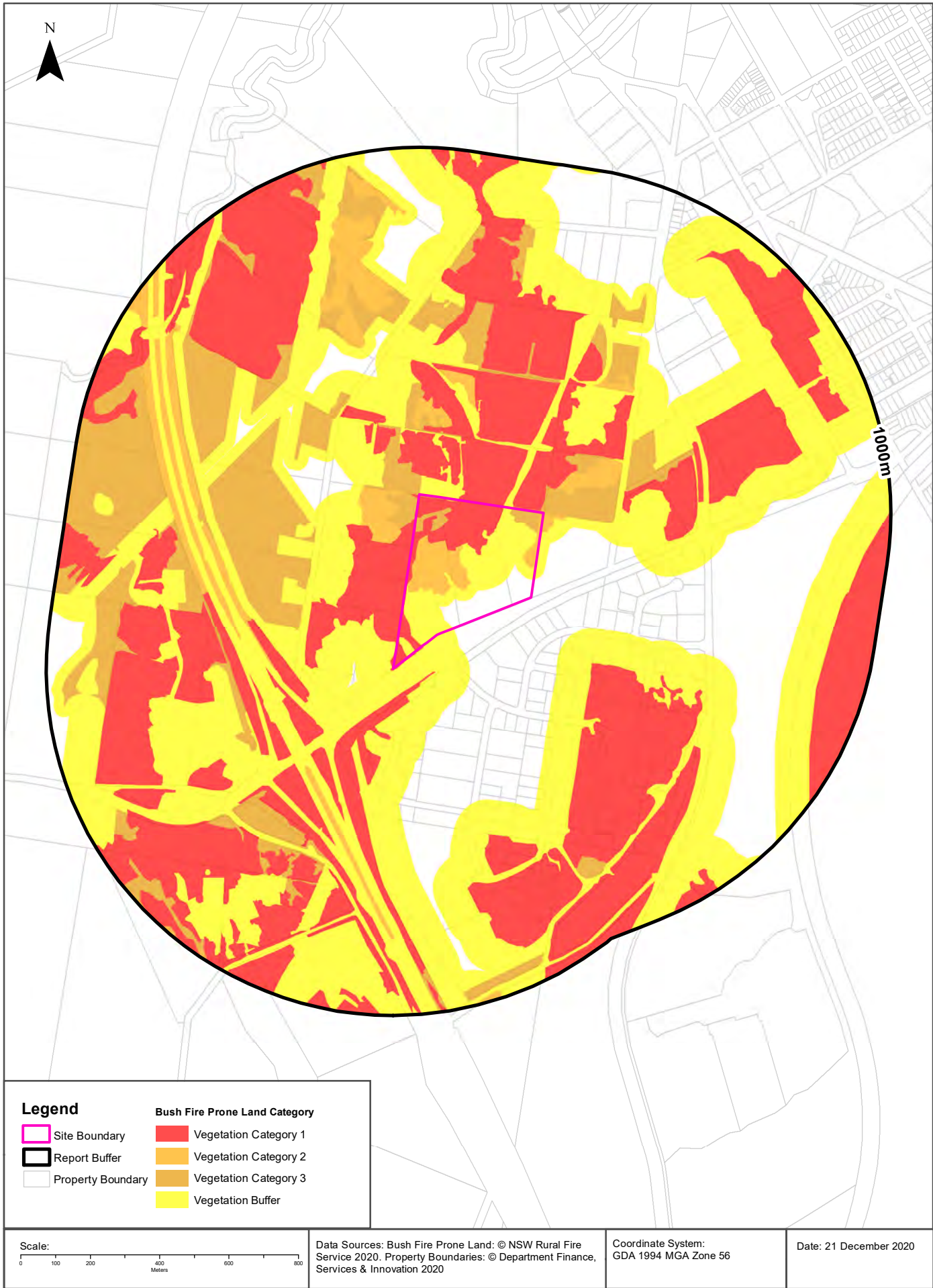
Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
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Environmental Planning Instrument - Heritage

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
189	Great Northern Railway	Item - General	Local	Lake Macquarie Local Environmental Plan 2014	12/09/2014	10/10/2014	24/11/2017	828m	North East

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Natural Hazards

56-76 Mandalong Road, Morisset, NSW 2264

Bush Fire Prone Land

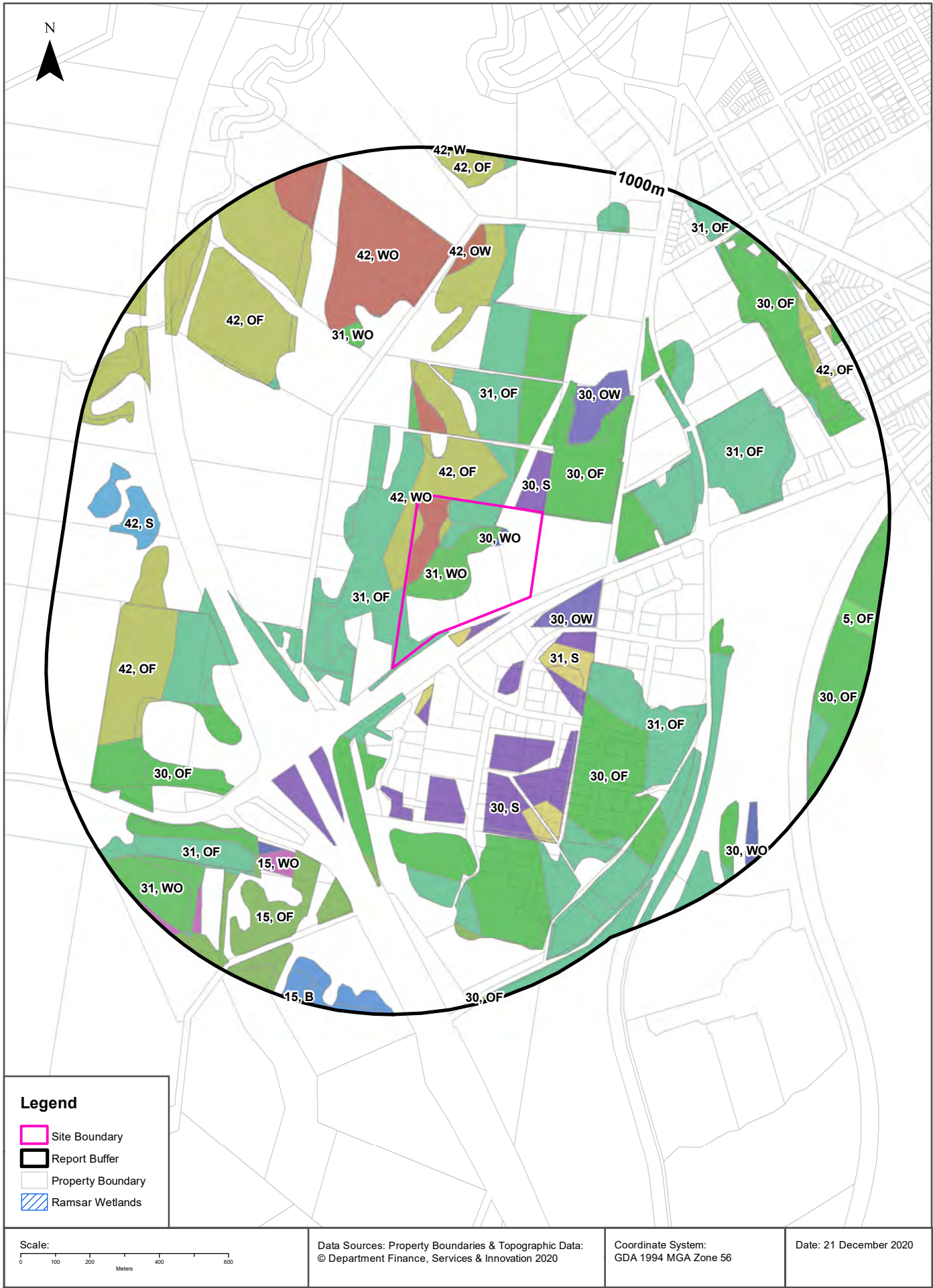
What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Buffer	0m	Onsite
Vegetation Category 1	0m	Onsite
Vegetation Category 2	0m	Onsite
Vegetation Category 3	0m	Onsite

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

Ecological Constraints - Vegetation & Ramsar Wetlands

56-76 Mandalong Road, Morisset, NSW 2264



Ecological Constraints

56-76 Mandalong Road, Morisset, NSW 2264

Lower Hunter and Central Coast Regional Vegetation Survey

What vegetation from the Lower Hunter and Central Coast Regional Survey exists within the dataset buffer?

Map Id	Unit Desc	Canopy Code	Canopy Cover	Species	Distance	Direction
31	Coastal Plains Scribbly Gum Woodland	WO	Sparse (Woodland) 20-<50% cover	E. haemostoma / C. gummifera / E. capitellata / A. inopina	0m	Onsite
31	Coastal Plains Scribbly Gum Woodland	OF	Mid Dense (Open Forest) 50-<100% cover	E. haemostoma / C. gummifera / E. capitellata / A. inopina	0m	Onsite
42	Riparian Melaleuca Swamp Woodland	WO	Sparse (Woodland) 20-<50% cover	Melaleuca sieberi / E. robusta	0m	Onsite
42	Riparian Melaleuca Swamp Woodland	OF	Mid Dense (Open Forest) 50-<100% cover	Melaleuca sieberi / E. robusta	0m	Onsite
30	Coastal Plains Smooth-barked Apple Woodland	WO	Sparse (Woodland) 20-<50% cover	A. costata / C. gummifera / E. capitellata / E. umbra	0m	Onsite
30	Coastal Plains Smooth-barked Apple Woodland	S	Scrub	A. costata / C. gummifera / E. capitellata / E. umbra	0m	Onsite
30	Coastal Plains Smooth-barked Apple Woodland	OF	Mid Dense (Open Forest) 50-<100% cover	A. costata / C. gummifera / E. capitellata / E. umbra	1m	North East
31	Coastal Plains Scribbly Gum Woodland	S	Scrub	E. haemostoma / C. gummifera / E. capitellata / A. inopina	17m	South
30	Coastal Plains Smooth-barked Apple Woodland	OW	Very Sparse (Open Woodland) 10-20% cover	A. costata / C. gummifera / E. capitellata / E. umbra	60m	East
15	Coastal Foothills Spotted Gum - Ironbark Forest	OF	Mid Dense (Open Forest) 50-<100% cover	C. maculata / E. umbra / E. siderophloia	547m	South
15	Coastal Foothills Spotted Gum - Ironbark Forest	WO	Sparse (Woodland) 20-<50% cover	C. maculata / E. umbra / E. siderophloia	603m	South West
42	Riparian Melaleuca Swamp Woodland	OW	Very Sparse (Open Woodland) 10-20% cover	Melaleuca sieberi / E. robusta	632m	North
42	Riparian Melaleuca Swamp Woodland	S	Scrub	Melaleuca sieberi / E. robusta	725m	West
15	Coastal Foothills Spotted Gum - Ironbark Forest	B	Bushland - Extensive areas of native vegetation, may include Woodland, Open Woodland, Closed Forest etc.	C. maculata / E. umbra / E. siderophloia	872m	South
5	Alluvial Tall Moist Forest	OF	Mid Dense (Open Forest) 50-<100% cover	E. saligna / S. glomulifera / Glochidion ferdinandi	883m	East
42	Riparian Melaleuca Swamp Woodland	W	Wetland	Melaleuca sieberi / E. robusta	989m	North

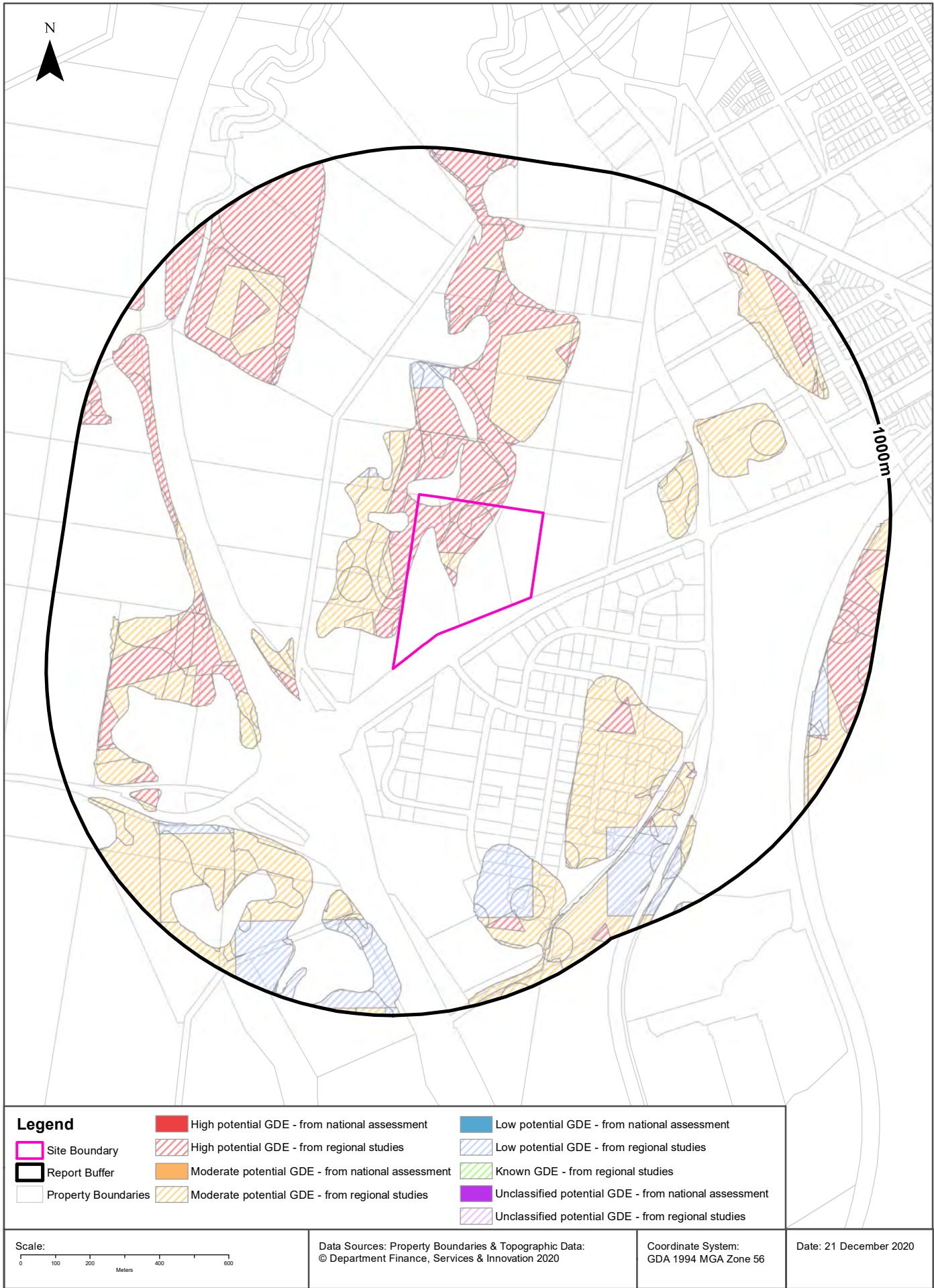
Lower Hunter and Central Coast Regional Vegetation Survey: NSW Office of Environment and Heritage

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 Environment



Ecological Constraints

56-76 Mandalong Road, Morisset, NSW 2264

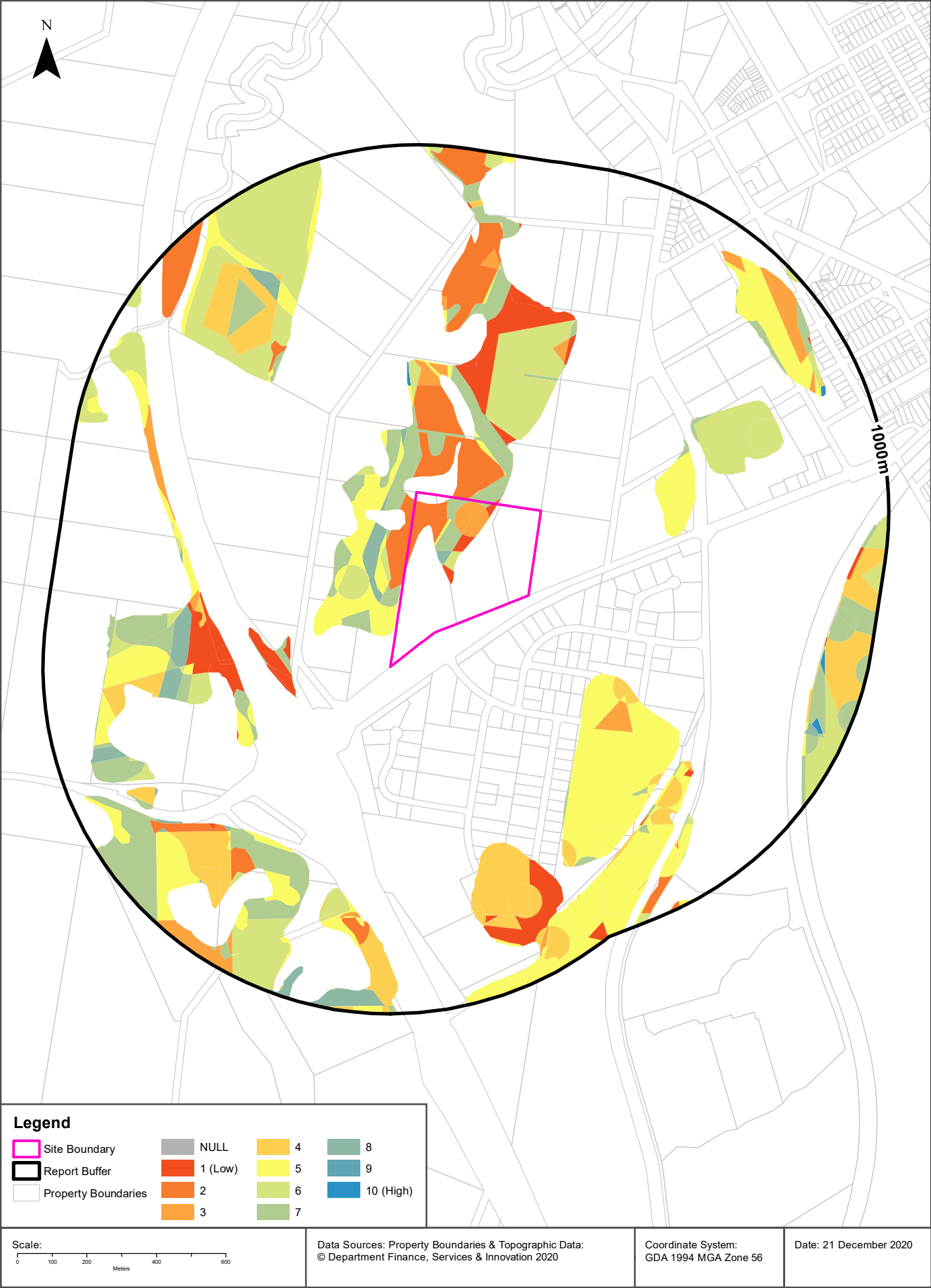
Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	High potential GDE - from regional studies	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	Moderate potential GDE - from regional studies	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	Low potential GDE - from regional studies	Deeply dissected sandstone plateaus.	Vegetation		130m

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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Ecological Constraints - Inflow Dependent Ecosystems Likelihood

56-76 Mandalong Road, Morisset, NSW 2264



Ecological Constraints

56-76 Mandalong Road, Morisset, NSW 2264

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	1	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	2	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	3	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	5	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	6	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	7	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	8	Deeply dissected sandstone plateaus.	Vegetation		0m
Terrestrial	4	Deeply dissected sandstone plateaus.	Vegetation		148m
Terrestrial	10	Deeply dissected sandstone plateaus.	Vegetation		307m

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology
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Ecological Constraints

56-76 Mandalong Road, Morisset, NSW 2264

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or 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	<i>Crinia tinnula</i>	Wallum Froglet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Amphibia	<i>Litoria aurea</i>	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	<i>Litoria brevipalmata</i>	Green-thighed Frog	Vulnerable	Not Sensitive	Not Listed	
Animalia	Amphibia	<i>Mixophyes balbus</i>	Stuttering Frog	Endangered	Category 2	Vulnerable	
Animalia	Amphibia	<i>Mixophyes iteratus</i>	Giant Barred Frog	Endangered	Category 2	Endangered	
Animalia	Amphibia	<i>Pseudophryne australis</i>	Red-crowned Toadlet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Actitis hypoleucos</i>	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Anthochaera phrygia</i>	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	<i>Apus pacificus</i>	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Ardenna grisea</i>	Sooty Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	<i>Ardenna pacifica</i>	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	<i>Ardenna tenuirostris</i>	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Burhinus grallarius</i>	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Calidris canutus</i>	Red Knot	Not Listed	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Calidris ferruginea</i>	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Calidris ruficollis</i>	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Vulnerable	Category 3	Not Listed	
Animalia	Aves	<i>Calyptorhynchus lathamii</i>	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	<i>Charadrius veredus</i>	Oriental Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Chthonicola sagittata</i>	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Cuculus optatus</i>	Oriental Cuckoo	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Daphoenositta chrysoptera</i>	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	Endangered	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	<i>Epthianura albigula</i>	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Falco subniger</i>	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Gallinago hardwickii</i>	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	<i>Glossopsitta pusilla</i>	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Haematopus longirostris</i>	Pied Oystercatcher	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Hieraaetus morphnoides</i>	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Hirundapus caudacutus</i>	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Ixobrychus flavicollis</i>	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Lathamus discolor</i>	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	<i>Limosa lapponica</i>	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Lophoictinia isura</i>	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	<i>Neophema pulchella</i>	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	<i>Ninox connivens</i>	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	<i>Ninox strenua</i>	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	<i>Numenius madagascariensis</i>	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Numenius phaeopus</i>	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Onychoprion fuscata</i>	Sooty Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Oxyura australis</i>	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Pandion cristatus</i>	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	<i>Petroica boodang</i>	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Pluvialis fulva</i>	Pacific Golden Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Pluvialis squatarola</i>	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Ptilinopus superbus</i>	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Stagonopleura guttata</i>	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Sternula albigula</i>	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Stictonetta naevosa</i>	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Thalasseus bergii</i>	Crested Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	<i>Tringa brevipes</i>	Grey-tailed Tattler	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Tringa nebularia</i>	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Tringa stagnatilis</i>	Marsh Sandpiper	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	Turnix maculosus	Red-backed Button-quail	Vulnerable	Not Sensitive	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	Mammalia	Cercartetus nanus	Eastern Pygmy-possum	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
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	Kerivoula papuensis	Golden-tipped Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Macropus parma	Parma Wallaby	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	
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 bifax	Eastern Long-eared Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petauroides volans	Greater Glider	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus australis	Yellow-bellied Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petrogale penicillata	Brush-tailed Rock-wallaby	Endangered	Not Sensitive	Vulnerable	
Animalia	Mammalia	Phascogale tapoatafa	Brush-tailed Phascogale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pseudomys gracilicaudatus	Eastern Chestnut Mouse	Vulnerable	Not Sensitive	Not Listed	
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 Sheath-tail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troungtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Hoplocephalus stephensii	Stephens' Banded Snake	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Pseudonaja modesta	Ringed Brown Snake	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Acacia bynoeana	Bynoe's Wattle	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Angophora inopina	Charmhaven Apple	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Astrotricha crassifolia	Thick-leaf Star-hair	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Corunastylis sp. Charmhaven (NSW896673)		Critically Endangered	Category 2	Critically Endangered	
Plantae	Flora	Corybas dowlingii	Red Helmet Orchid	Endangered	Category 2	Not Listed	
Plantae	Flora	Cryptostylis hunteriana	Leafless Tongue Orchid	Vulnerable	Category 2	Vulnerable	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus parramattensis subsp. decadens		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus parramattensis subsp. parramattensis		Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Genoplesium insigne	Variable Midge Orchid	Critically Endangered	Category 2	Critically Endangered	
Plantae	Flora	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Not Listed	Not Sensitive	Extinct	
Plantae	Flora	Macadamia tetraphylla	Rough-shelled Bush Nut	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Maundia triglochoides		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	Pterostylis sp. Botany Bay	Botany Bay Bearded Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Rhodomyrtus psidioides	Native Guava	Critically Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Rutidosia heterogama	Heath Wrinklewort	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Tetratheca juncea	Black-eyed Susan	Vulnerable	Not Sensitive	Vulnerable	

Data does not include NSW category 1 sensitive species.

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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
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

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Appendix C

SITE PHOTOGRAPHS



Plate 1 – Dwelling used for commercial signage business on Lot 12 DP777034.
Date: 14/01/2021



Plate 2 – Stockpiled concrete slabs in the south eastern corner of the Site.
Date: 14/01/2021



Plate 3 – Stockpiled fill material in south western corner of the Site. Sample location TP01.
Date: 14/01/2021



Plate 4 – Stockpiled fill material in south western corner of the Site. Sample location TP02.
Date: 14/01/2021



Plate 5 – Stockpiled anthropogenic material comprising of steel and plastic on Lot 12 DP 777034. Sample location BH01.
Date: 14/01/2021



Plate 6 – Car seat and plastic chair in the central portion of Lot 12 DP 777034. Sample location BH02.
Date: 14/01/2021



Plate 7 – Mallards Creek in north western corner of Lot 12 DP 777034.
Date: 14/01/2021



Plate 8 – Old broken-down motor bike in the northern portion of Lot 12 DP 777034. Sample location BH04.
Date: 14/01/2021



Plate 9 – Old broken-down farm vehicle on Lot 11 DP 777034. Sample location BH05.
Date: 14/01/2021



Plate 10 – Old broken-down farm vehicle on Lot 11 DP 777034. Sample location BH06.
Date: 14/01/2021



Plate 11 – Old broken-down farm vehicle on Lot 11 DP 777034. Sample location BH07.
Date: 14/01/2021



Plate 12 – Buried anthropogenic waste in central portion of Lot 11 DP 777034.
Date: 14/01/2021



Plate 13 – Dam located in northern portion of Lot 2 DP 529914.

Date: 14/01/2021



Plate 14 – Buried and stockpiled anthropogenic waste in central portion of Lot 11 DP 777034. Sample location TP11.

Date: 14/01/2021



Plate 15 – Imported gravel material used for access road on Lot 11 DP 777034. Sample location TP19.
Date: 14/01/2021



Plate 16 – Driveway to former dwelling off Mandalong road to Lot 11 DP 777034.
Date: 14/01/2021



Plate 17 – Septic tank for Dwelling located on Lot 2 DP 529914.
Date: 14/01/2021



Plate 18 – Rear of dwelling on Lot 2 DP 529914.
Date: 14/01/2021



Plate 19 – Fill mounds located in the central portion of Lot 2 DP 529914. Sample location BH09.
Date: 14/01/2021



Plate 20 – Fill mounds located in the central portion of Lot 2 DP 529914.
Date: 14/01/2021



Plate 21 – Stockpiled building materials around dwelling on Lot 12 DP777034. Sample location TP06.
Date: 14/01/2021

Appendix D

HISTORICAL TITLE DEAD SEARCH

ADVANCE LEGAL SEARCHERS PTY LTD

(ACN 147 943 842)

ABN 82 147 943 842

18/36 -42 Osborne Road,
Manly, NSW 2095

Telephone: +612 9977 6713

Mobile: 0412 169 809

Email: search@alsearchers.com.au

21st December, 2020

EP RISK MANAGEMENT

109/283 Alfred Street,
NORTH SYDNEY, NSW 2060

Attention: Stuart Lord,

RE:

**56-76 Mandalong Road
Morisset**

Note 1:	Lot 11	DP 777034	(page 1)
Note 2:	Lot 12	DP 777034	(page 4)
Note 3:	Lot 2	DP 529914	(page 7)

Note 1:

Current Search

Folio Identifier 11/777034 (attached)

DP 777034 (plan attached)

Dated 18th December, 2020

Registered Proprietor:

TREETOPS SCENIC PTY LTD

Title Tree
Lot 11 DP 777034

Folio Identifier 11/777034

Folio Identifier 1/529914

Certificate of Title Volume 10854 Folio 72

Certificate of Title Volume 9830 Folio 87

Certificate of Title Volume 3430 Folio 2

Certificate of Title Volume 3298 Folio 16

Certificate of Title Volume 1605 Folio 244

Summary of Proprietor(s)
Lot 11 DP 777034

Year	Proprietor(s)
	(Lot 11 DP 777034)
2017 – todote	Treetops Scenic Pty Ltd (<i>ACN 004 007 489</i>)
2012 – 2017	Richard Franz Gunther Peter Earle Bale
2011 – 2012	Richard Franz Gunther Peter Earle Bale
2006 – 2011	George William Bainbridge Richard Franz Gunther Peter Earle Bale
1988 – 2006	Robin Newton Munro, building contractor
	(Lot 1 DP 529914)
1988 – 1988	Robin Newton Munro, building contractor

Cont.

Cont.

	(Lot 1 DP 529914 – CTVol 10854 Fol 72)
1980 – 1988	Robin Newton Munro, building contractor
1974 – 1980	Robin Newton Munro, building contractor Nerida Margaret Munro, his wife
	(Lot 38 DP 9632 – CTVol 9830 Fol 87)
1964 – 1974	Allan David Deaves, bread carter Merle Lillian Deaves, his wife
	(Lot 38 DP 9632 – Area 32 Acres 0 Roods 28 Perches – CTVol 3430 Fol 2)
1964 – 1964	Public Trustee
1951 – 1964	Ethel Dorothea Consuelo Smith, widow
1947 – 1951	Mervyn McInerney, painter
1945 – 1947	Alfred Ernest Fishlock, crane driver
1930 – 1945	Frederick Arthur Lewis Smith, farmer
1926 – 1930	William John Bentley, farmer
1923 – 1926	Frederick Albert Sherriff, market gardener/poultry farmer
	(Lot 38 DP 9632 & other lands – Area 3035 Acres 1 Rood 30 ½ Perches – CTVol 3298 Fol 16)
1922 – 1923	Morisset Farms Estate Limited
	(Portion 20 Parish Mandolong- Area 1329 Acres 2 Rood 0 Perches – CTVol 1605 Fol 244)
1905 – 1922	William Joseph Russell, grazier
1905 – 1905	Thomas Walker, esquire Arthur John Mackenzie, esquire Alfred Consett Stephen, solicitor
1905 – 1905	James Thomas Walker, esquire Arthur John Mackenzie, esquire

Note 2:

Current Search

Folio Identifier 12/777034 (attached)
DP 777034 (plan attached)
Dated 18th December, 2020
Registered Proprietor:
F3 SUPER CENTRE PTY LIMITED

Title Tree
Lot 12 DP 777034

Folio Identifier 12/777034

Folio Identifier 1/529914

Certificate of Title Volume 10854 Folio 72

Certificate of Title Volume 9830 Folio 87

Certificate of Title Volume 3430 Folio 2

Certificate of Title Volume 3298 Folio 16

Certificate of Title Volume 1605 Folio 244

Summary of Proprietor(s) Lot 12 DP 777034

Year	Proprietor(s)
	(Lot 12 DP 777034)
2006 – todate	F3 Super Centre Pty Limited (ACN 119 990 886)
1999 – 2006	Gary John Jones Debra Anne Jones
1997 – 1999	Carmel Margaret Mahon
1994 – 1997	Catherine Joan Anne Flipp Graeme Flipp
1990 – 1994	Phillip John Collins Marilyn Diane Collins
1988 – 1990	Robin Newton Munro
	(Lot 1 DP 529914)
1988 – 1988	Robin Newton Munro, building contractor
	(Lot 1 DP 529914 – CTVol 10854 Fol 72)
1980 – 1988	Robin Newton Munro, building contractor
1974 – 1980	Robin Newton Munro, building contractor Nerida Margaret Munro, his wife
	(Lot 38 DP 9632 – CTVol 9830 Fol 87)
1964 – 1974	Allan David Deaves, bread carter Merle Lillian Deaves, his wife
	(Lot 38 DP 9632 – Area 32 Acres 0 Roods 28 Perches – CTVol 3430 Fol 2)
1964 – 1964	Public Trustee
1951 – 1964	Ethel Dorothea Consuelo Smith, widow
1947 – 1951	Mervyn McInerney, painter
1945 – 1947	Alfred Ernest Fishlock, crane driver
1930 – 1945	Frederick Arthur Lewis Smith, farmer
1926 – 1930	William John Bentley, farmer
1923 – 1926	Frederick Albert Sherriff, market gardener/poultry farmer
	(Lot 38 DP 9632 & other lands – Area 3035 Acres 1 Rood 30 ½ Perches – CTVol 3298 Fol 16)
1922 – 1923	Morisset Farms Estate Limited

Cont.

Cont.

	(Portion 20 Parish Mandolong – Area 1329 Acres 2 Rood 0 Perches – CTVol 1605 Fol 244)
1905 – 1922	William Joseph Russell, grazier
1905 – 1905	Thomas Walker, esquire Arthur John Mackenzie, esquire Alfred Consett Stephen, solicitor
1905 – 1905	James Thomas Walker, esquire Arthur John Mackenzie, esquire

Note 3:

Current Search

Folio Identifier 2/529914 (attached)

DP 529914 (plan attached)

Dated 18th December, 2020

Registered Proprietor:

DAVID PHILIP WALDON

Title Tree

Lot 2 DP 529914

Folio Identifier 2/529914

Certificate of Title Volume 10854 Folio 73

Certificate of Title Volume 9830 Folio 87

Certificate of Title Volume 3430 Folio 2

Certificate of Title Volume 3298 Folio 16

Certificate of Title Volume 1605 Folio 244

Summary of Proprietor(s) Lot 2 DP 529914

Year	Proprietor(s)
	(Lot 2 DP 529914)
1991 – todate	David Philip Waldon
1988 – 1991	The Electricity Commission of New South Wales
	(Lot 2 DP 529914 – CTVol 10854 Fol 73)
1983 – 1988	The Electricity Commission of New South Wales
1980 – 1983	Colin Charles Parkes, assistant Dorann Madge Parkes
1968 – 1980	Kenneth John Payne, male nurse
1968 – 1968	Allan David Deaves, bread carter Merle Lillian Deaves, his wife
	(Lot 38 DP 9632 – CTVol 9830 Fol 87)
1964 – 1968	Allan David Deaves, bread carter Merle Lillian Deaves, his wife
	(Lot 38 DP 9632 – Area 32 Acres 0 Roods 28 Perches – CTVol 3430 Fol 2)
1964 – 1964	Public Trustee
1951 – 1964	Ethel Dorothea Consuelo Smith, widow
1947 – 1951	Mervyn McInerny, painter
1945 – 1947	Alfred Ernest Fishlock, crane driver
1930 – 1945	Frederick Arthur Lewis Smith, farmer
1926 – 1930	William John Bentley, farmer
1923 – 1926	Frederick Albert Sherriff, market gardener/poultry farmer
	(Lot 38 DP 9632 & other lands – Area 3035 Acres 1 Rood 30 ½ Perches – CTVol 3298 Fol 16)
1922 – 1923	Morisset Farms Estate Limited
	(Portion 20 Parish Mandolong – Area 1329 Acres 2 Rood 0 Perches – CTVol 1605 Fol 244)
1905 – 1922	William Joseph Russell, grazier
1905 – 1905	Thomas Walker, esquire Arthur John Mackenzie, esquire Alfred Consett Stephen, solicitor
1905 – 1905	James Thomas Walker, esquire Arthur John Mackenzie, esquire

Appendix E

TEST PIT LOGS

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357218.85
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6334870.73
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 5
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 2.5	CHECKED BY JY

COMMENTS Stockpile 1.0 high

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.5	0.0		TP01_0.5 ACM003 ACMID002			FILL: sandy SILT, non plastic, fine to coarse, grey, small to large angular gravel.	D		Anthropogenic waste comprising of building material (brick, tile, concrete). ACM present.
1.0	0.0		TP01_1.2			sandy SILT: non plastic, fine to coarse, pale grey.	D-M		
1.5				4		sandy CLAY: medium plasticity, fine to coarse, grey mottled orange brown, trace small subangular gravel.		Stiff	
				3					
				4					
				3					
				4					
				5					
2.0				6					
2.5						EOI @ 2.5 m BGL.			
3.0									
3.5									

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357226.48
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6334898.52
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 5
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS Stockpile 2.0 high

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.5						FILL: sandy SILT, non plastic, fine to coarse, grey.	D		
1	0.0		TP02_1.0						
1.5									
2			TP02_2.2			sandy SILT: non plastic, fine to coarse, pale grey.	D-M		
2.5	0.0			4		sandy CLAY: medium plasticity, fine to coarse, grey mottled orange brown, trace small subangular gravel.		Stiff	
				4					
				3					
				4					
				6					
				5					
				6					
3						EOI @ 3.0 m BGL.			
3.5									

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357165.66
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6334912.76
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 5
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS								
Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency
0.0	0.0		TP03_0.1 Micro 02			TOPSOIL: sandy silt, non plastic, fine to coarse, pale grey.	D	
0.5	0.0	150	CBR	4 2 3 4 2		clayey SAND: low plasticity, fine to coarse, grey mottled orange.	D-M	Stiff
1.0				3 4		sandy CLAY: medium plasticity, fine to coarse, grey mottled orange brown, trace small subangular gravel.		Firm
1.5		200		3 5 6 8 10				Stiff V Stiff
2.0								
2.5								
3.0			ASS05			clayey SAND: low plasticity, fine to coarse, light grey mottled dark orange.	M	
3.5						EOI @ 3.0 m BGL.		

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357201.69
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6334952.57
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 4
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS								
Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency
0.0	0.0		TP04_0.1			TOPSOIL: sandy SILT, non plastic, fine to coarse, with grey.	D	
0.5	0.0		TP04_0.5	3		sandy silty CLAY: medium plasticity, fine to coarse, grey mottled brown, trace small subangular gravel.	D-M	Stiff
			CBR	5				V Stiff
		200		7				
				8				
1.0				4		silty CLAY: medium plasticity, fine grained, grey mottled dark orange.		Stiff
				4				
				4				
				4				
1.5		250		4		clayey SAND: low plasticity, fine to coarse, grey mottled light brown.		
2.5			ASS04					
3.0								Water strike at 2.8m.
3.5						EOI @ 3.0 m BGL.		

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357232.92
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6335041.59
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 5
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS								
Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency
0.0	0.0		TP05_0.1 Micro 03			TOPSOIL: sandy SILT, non plastic, fine to coarse, with grey.	D	
0.5	0.0	350	TP05_0.5	2		sandy CLAY: medium plasticity, fine to coarse, brown mottled orange, trace small subangular gravel.	D-M	Firm
				3				V Stiff
				6				
				9				
				6				
				8				
				8				
				10		sandy silty CLAY: medium plasticity, fine grained, light grey.		
				12				
1.5		500						
2								
2.5						XW SILTSTONE: pale grey to white, fine grained.	D	
3			PL					
3						EOI @ 3.0 m		
3.5								

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357259.44
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6334955.76
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 7
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 4	CHECKED BY JY

COMMENTS Stockpile height ~1m

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.0			TP06_0.1			FILL: silty SAND with gravel, non plastic, small to medium rounded to sub angular gravel, fine to coarse sand, brown.	D		
0.5	0.0		TP06_0.5						
1.0	0.0		TP06_1.0			sandy SILT (TOPSOIL):, non plastic, fine to coarse, with grey.	D-M		
1.5		200	CBR	2		sandy CLAY: medium plasticity, fine to coarse, brown mottled orange, trace small subangular gravel.		Firm	
				3				Stiff	
				5				V Stiff	
				6					
				7					
				9					
2.0				12					
				12					
2.5		400				As above: pale grey mottled orange.			
3.0						clayey SAND: low plasticity, fine to coarse, grey mottled light brown.			
3.5									
4.0						EOI @ 4.0 m			

PROJECT NUMBER EP1934

PROJECT NAME Preliminary Geo and Contam

CLIENT TSA c/- Winarch

ADDRESS 56-76 Mandalong Road, Morisset

DRILLING DATE 27/1/21

DRILLING COMPANY Lovette's

DRILLER -

DRILLING METHOD 25 t Excavator

TOTAL DEPTH 2.5

EASTING 357285.05

NORTHING 6334927.69

SURFACE ELEVATION 9

LOGGED BY SL

CHECKED BY JY

COMMENTS

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.6			TP07_0.1			FILL: sandy GRAVEL, non plastic, small to large angular, grey. FILL: sandy SILT, non plastic, fine to coarse, dark brown, trace small angular gravel.	D D-M		
0.5				3		sandy CLAY: medium plasticity, fine to coarse, orange brown mottled grey, trace small subangular gravel.	D-M	Firm	
1	0.0		TP17_1.0	2					
1.5				2					
2				2					
2.5				2					
2.5						EOI @ 2.5 m BGL.			
3									
3.5									

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357330.03
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6334928.13
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 11
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.0	0.0		TP08_0.1 NEPM Screen 02			TOPSOIL: sandy SILT, non plastic, fine to coarse, grey.	D		
0.5	0.0		TP08_0.5 SS	3		sandy silty CLAY: medium plasticity, fine grained, white.	D-M	Stiff	
		200		3					
				4					
				4					
1				7				V Stiff	
			ASS01	10		clayey SAND: low plasticity, fine to coarse grained, white.			
				10					
				8					
				7					
1.5				8					
				12					
									Water strike at 1.7m.
2		200				sandy CLAY: low plasticity, fine to coarse, white mottled orange/dark red,, trace small subangular gravel.			
2.5									
			PL			XW SANDSTONE: white mottled dark red, fine to coarse grained.	D		
3									
						EOI @ 3.0 m			
3.5									

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357345.00
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6335005.97
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 11
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS								
Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency
0.0	0.0		TP09_0.1			TOPSOIL: sandy SILT, non plastic, fine to coarse, with grey tending light grey.	D	
			Micro 01					
0.5	0.0		TP09_0.5	4		sandy CLAY: medium plasticity, fine to coarse, orange brown, trace small subangular gravel.	D-M	Stiff
				5				
			CBR	6				V Stiff
				9				
			250	12		As above: white mottled orange/red, fine to coarse grained.		
				10				
1				12				Hard
				14				
1.5								
2						XW SANDSTONE: white mottled red, fine to coarse grained.	D	
2.5			PL			As above: red to dark orange, fine to coarse.		
3								
3.5						EOI @ 3.0 m BGL.		

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357303.61
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6335055.41
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 7
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.0			TP10_0.1			TOPSOIL: sandy SILT, non plastic, fine to coarse, with grey.	D		
0.5	0.0		TP10_0.5	3		sandy CLAY: low plasticity, fine to coarse, orange brown, trace small subangular gravel.	D-M	Firm	
			SS	2					
				3		sandy silty CLAY: medium plasticity, fine grained, pale red-brown mottled white, trace ironstone..			
				3					
				3					
1		300		3					
				4				Stiff	
				10				V Stiff	
				12					
1.5									
						XW SILTSTONE: fine grained, white with trace red coarse sand.			
2									
2.5									
3									
						EOI @ 3.0 m			
3.5									

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357342.00
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6335102.22
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 8
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 2.5	CHECKED BY JY

COMMENTS

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.0	0.0		TP11_0.1 ACM02			FILL: sandy SILT, non plastic, fine to coarse sand, brown.	D		Anthropogenic material on surface. ACM on surface.
0.5	0.0	350	CBR	4		sandy SILT with some clay, non plastic, fine to coarse, yellow brown.	D-M		
				5		sandy CLAY: low plasticity, fine to coarse, orange brown, trace small subangular gravel.		Stiff	
				4					
				6					
				6					
1				7					
				7		As above: white mottled orange.			
				6					
				7					
1.5									
2						XW SANDSTONE: white mottled dark red, fine to coarse grained.	D		
2.5			PL						
2.5						EOI @ 2.5 m			
3									
3.5									

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357385.11
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6335086.08
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 9
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 2.5	CHECKED BY JY

COMMENTS

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.0 <									

PROJECT NUMBER EP1934

PROJECT NAME Preliminary Geo and Contam

CLIENT TSA c/- Winarch

ADDRESS 56-76 Mandalong Road, Morisset

DRILLING DATE 27/1/21

DRILLING COMPANY Lovette's

DRILLER -

DRILLING METHOD 25 t Excavator

TOTAL DEPTH 3.7

EASTING 357404.03

NORTHING 6335124.88

SURFACE ELEVATION 8

LOGGED BY SL

CHECKED BY JY

COMMENTS

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.0	0.0		TP13_0.1 ACM01 Micro 04			TOPSOIL: sandy SILT, non plastic, fine to coarse, grey.	D		
0.5	0.0		TP13_0.5	1		sandy CLAY: low to medium plasticity, fine to coarse, orange brown, trace small subangular gravel.	D-M	Soft	
				2				Stiff	
				4					
				4					
				5					
				5					
1		150		4					
				5					
				6					
				5					
				8				V Stiff	
1.5				Ref					
2		150				As above: white mottled orange.			
2.5									
3			ASS02			clayey SAND: low plasticity, fine to coarse grained, white.	D-M		
3.5			PL			XW SANDSTONE: white mottled dark red, fine to coarse grained.	D		
						EOI @ 3.7 m			

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357419.50
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6335153.72
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 6
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS								
Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency
0.0			TP14_0.1			FILL: sandy SILT, non plastic, fine to coarse sand, grey, one star picket observed.	D	
			ASS03	1		clayey SAND: low plasticity, fine to coarse grained, grey.	D-M	Soft
				3				Firm
0.5	0.0		TP14_0.5	4		sandy CLAY: medium plasticity, fine to coarse, white mottled orange, trace small subangular gravel.		Stiff
				4				
				4				
				5				
				5				
1				7				V Stiff
				9				
				12				
1.5		350						
2						XW SANDSTONE: white mottled orange, fine to coarse grained.	D	
2.5								
3						EOI @ 3.0 m		
3.5								

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357445.09
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6335112.02
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 7
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3.2	CHECKED BY JY

COMMENTS								
Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency
0.0			TP15_0.1			TOPSOIL: sandy silt, non plastic, fine to coarse, pale grey.	D	
0.5	0.0		TP15_0.5	4		clayey SAND: low plasticity, fine to coarse, orange brown.	D-M	Stiff
1.0				3		sandy CLAY: medium plasticity, fine to coarse, white mottled dark red, trace small subangular gravel.		V Stiff
1.5		250		4				Hard
2.0				5				
2.5				10				
3.0			PL	12				
3.5				16		XW SANDSTONE: white, fine to coarse mottled dark orange.	D	
						EOI @ 3.2 m BGL.		

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357444.34
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6335082.11
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 8
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS								
Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency
0.0			TP16_0.1			TOPSOIL: sandy silt, non plastic, fine to coarse, pale grey.	D	
0.5	0.0	150	CBR	2 4 3 3 5 5		sandy CLAY: medium plasticity, fine to coarse, orange mottled dark red, trace small subangular gravel.	D-M	Stiff
1.0				6 9 10 12		sandy silty CLAY: medium plasticity, fine grained, white mottled dark red, trace coarse sand.		V Stiff
1.5		150						
2.0						XW SILTSTONE: fine grained, white mottled orange/red.		
2.5								
3.0			PL					
3.5						EOI @ 3.0 m BGL.		

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357488.68
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6335005.93
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 11
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 4.5	CHECKED BY JY

COMMENTS

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.0			TP18_0.1			TOPSOIL: sandy SILT, non plastic, fine to coarse, grey.	D		
				4		sandy CLAY: low to medium plasticity, fine to coarse, orange brown, trace small subangular gravel.	D-M	Stiff	
0.5	0.0		TP18_0.5	3					
				4					
				4					
				5					
				6					
1				4					
				6		As above: dark red mottled light grey.		V Stiff	
				8					
				10					
				10					
1.5				12					
						sandy silty CLAY: low plasticity, white mottled orange-dark red, fine to coarse grained sand.			
2		200							
		450							
2.5						As above: white mottled red.			
3						XW SILTSTONE: white mottled dark red, fine grained.	D		
3.5									
4			PL						
4.5						EOI @ 4.5 m			

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357410.70
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6335019.46
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 12
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.8			TP19_0.1 NEPM Screen 01			FILL: sandy GRAVL, non plastic, medium to large angular gravel (Ballast), fine to coarse sand, grey, trace chitter.	D		
0.5	0.0		TP19_0.5	14		sandy CLAY: low plasticity, fine to coarse, dark orange, trace small subangular gravel.	D-M	Stiff	
				8					
				8					
				10					
				9					
1				8		silty sandy CLAY: medium plasticity, fine grained, pale pink with dark red ironstone.		V Stiff	
				7					
		600		10					
				12					
1.5									
2		600				XW SILTSTONE: white mottled dark red, fine grained.	D		
2.5			PL						
3						EOI @ 3.0 m			
3.5									

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357422.17
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6334963.81
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 12
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3	CHECKED BY JY

COMMENTS Stockpile 2.0 high

Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency	Additional Observations
0.4			TP20_0.1			FILL: sandy SILT with gravel, non plastic, fine to coarse, with some ballast, dark grey.	D		
			QC01/QC02	12		silty sandy CLAY: medium plasticity, fine to coarse, pale orange brown, trace small subangular gravel.	D-M	Hard	
				18					
0.5	0.0		TP20_0.5	17					
				REF					
						As above: pale red mottled light grey.			
1		>600							
						XW SANDSTONE: pale orange, fine to coarse mottled red.	D-M		
1.5									
2									
			PL						
2.5						XW SILTSTONE: fine grained, white mottled red.			
3									
						EOI @ 3.0 m BGL.			
3.5									

PROJECT NUMBER EP1934	DRILLING DATE 27/1/21	EASTING 357384.44
PROJECT NAME Preliminary Geo and Contam	DRILLING COMPANY Lovette's	NORTHING 6334953.64
CLIENT TSA c/- Winarch	DRILLER -	SURFACE ELEVATION 12
ADDRESS 56-76 Mandalong Road, Morisset	DRILLING METHOD 25 t Excavator	LOGGED BY SL
	TOTAL DEPTH 3.5	CHECKED BY JY

COMMENTS								
Depth (m)	PID	PP (kPa)	Samples	DCP (Blows per 100mm)	Graphic Log	Material Description: Soil type, plasticity/particle characteristics, colour, minor components	Moisture	Consistency
0.8			TP21_0.1			FILL: sandy SILT, non plastic, fine to coarse sand, grey, some brick/paver observed.	D	
				3		sandy CLAY: medium plasticity, fine to coarse, orange brown , trace small subangular gravel.	D-M	Stiff
				4				
				6				
0.5	0.0		TP21_0.5	8				V Stiff
				8				
				8				
				10		As above: white mottled dark red, dark red ironstone.		
				8				
1				12				Hard
				14				
1.5		350						
2			PL			XW SANDSTONE: orange brown mottled white, fine to coarse grained.	D	
2.5								
3								
3.5		400	PL					
						EOI @ 3.0 m		

Appendix F

NATA ACCREDITED LABORATORY REPORTS

CERTIFICATE OF ANALYSIS

Work Order : **ES2102692**
Client : **EP Risk Management**
Contact : **MR STUART LORD**
Address : **3/19 BOLTON STREET**
NEWCASTLE NSW 2300
Telephone : **----**
Project : **MANDALONG ROAD**
Order number : **----**
C-O-C number : **----**
Sampler : **----**
Site : **----**
Quote number : **SY/497/20 Primary analysis only**
No. of samples received : **72**
No. of samples analysed : **52**

Page : 1 of 53
Laboratory : Environmental Division Sydney
Contact : Hannah White
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 28-Jan-2021 10:56
Date Analysis Commenced : 29-Jan-2021
Issue Date : 05-Feb-2021 17:31



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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Aleksandar Vujkovic	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Rassem Ayoubi	Senior Organic Chemist	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW
Somlok Chai	Microbiologist	Sydney Microbiology, 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 Contact 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.

- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- 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.
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- 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.
- EG005: Poor precision was obtained for Iron on sample ES2102692-34. Results have been confirmed by re-extraction and reanalysis.
- EP080: ES2102692#39 is confirmed by re-analysis.
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- 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.
- 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.
- 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 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- 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
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H^+ + Al^{3+}).
- 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.
- EA200: N/A - Not Applicable



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP01_0.1 TP01_1.2	TP01_0.5	TP02_01.0	TP02_2.2	TP04_0.1
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-001	ES2102692-002	ES2102692-003	ES2102692-004	ES2102692-007
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	16.9	14.4	6.7	17.4	15.4
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	2	4	2	2	3
Copper	7440-50-8	5	mg/kg	<5	5	<5	<5	<5
Lead	7439-92-1	5	mg/kg	<5	10	6	5	6
Nickel	7440-02-0	2	mg/kg	<2	3	2	<2	<2
Zinc	7440-66-6	5	mg/kg	8	38	20	<5	7
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
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
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



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP01_0.1 TP01_1.2	TP01_0.5	TP02_01.0	TP02_2.2	TP04_0.1
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-001	ES2102692-002	ES2102692-003	ES2102692-004	ES2102692-007
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
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	72-54-8/72-55-9/5 0-2	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
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)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



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP01_0.1 TP01_1.2	TP01_0.5	TP02_01.0	TP02_2.2	TP04_0.1
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-001	ES2102692-002	ES2102692-003	ES2102692-004	ES2102692-007
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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
^ >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



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP01_0.1 TP01_1.2	TP01_0.5	TP02_01.0	TP02_2.2	TP04_0.1
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-001	ES2102692-002	ES2102692-003	ES2102692-004	ES2102692-007
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
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
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	91.0	----	84.6	----	85.4
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	86.0	93.6	137	84.3	116
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	72.0	60.8	53.2	67.9	80.5
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	106	----	101	----	103
2-Chlorophenol-D4	93951-73-6	0.5	%	99.8	----	95.5	----	96.7
2,4,6-Tribromophenol	118-79-6	0.5	%	95.5	----	86.7	----	93.0
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	107	----	101	----	103
Anthracene-d10	1719-06-8	0.5	%	104	----	100	----	101
4-Terphenyl-d14	1718-51-0	0.5	%	89.8	----	86.6	----	88.0
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	92.8	----	98.4	----	102
Toluene-D8	2037-26-5	0.2	%	99.4	----	104	----	108
4-Bromofluorobenzene	460-00-4	0.2	%	98.9	----	99.8	----	102



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_0.1	TP05_0.5	TP06_0.1	TP06_0.5	TP07_0.1
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-009	ES2102692-010	ES2102692-011	ES2102692-012	ES2102692-013
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		8.7	12.7	13.2	8.2	7.2
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		<2	2	4	3	2
Copper	7440-50-8	5	mg/kg		<5	<5	<5	6	<5
Lead	7439-92-1	5	mg/kg		<5	<5	<5	10	<5
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	2	<2
Zinc	7440-66-6	5	mg/kg		<5	<5	<5	26	<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
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
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



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP05_0.1	TP05_0.5	TP06_0.1	TP06_0.5	TP07_0.1
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-009	ES2102692-010	ES2102692-011	ES2102692-012	ES2102692-013
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
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	72-54-8/72-55-9/5 0-2	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
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)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



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP05_0.1	TP05_0.5	TP06_0.1	TP06_0.5	TP07_0.1
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-009	ES2102692-010	ES2102692-011	ES2102692-012	ES2102692-013
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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
^ >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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_0.1	TP05_0.5	TP06_0.1	TP06_0.5	TP07_0.1
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-009	ES2102692-010	ES2102692-011	ES2102692-012	ES2102692-013
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ 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
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		84.7	----	86.7	----	88.1
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		89.5	94.4	84.3	77.5	122
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		86.3	51.5	67.8	65.8	113
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		100	----	102	----	103
2-Chlorophenol-D4	93951-73-6	0.5	%		94.7	----	96.2	----	97.3
2,4,6-Tribromophenol	118-79-6	0.5	%		90.9	----	88.3	----	92.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		101	----	103	----	104
Anthracene-d10	1719-06-8	0.5	%		99.1	----	101	----	102
4-Terphenyl-d14	1718-51-0	0.5	%		85.2	----	88.2	----	88.3
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		106	----	92.7	----	98.6
Toluene-D8	2037-26-5	0.2	%		114	----	101	----	105
4-Bromofluorobenzene	460-00-4	0.2	%		106	----	100	----	101



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP07_0.5	TP09_0.1	TP09_0.5	TP10_0.1	TP11_0.1
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-014	ES2102692-017	ES2102692-018	ES2102692-019	ES2102692-021
				Result	Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		22.3	4.6	35.2	8.6	10.8
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		10	2	7	3	4
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg		8	5	<5	<5	11
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg		7	8	<5	<5	59
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
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
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP07_0.5	TP09_0.1	TP09_0.5	TP10_0.1	TP11_0.1
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-014	ES2102692-017	ES2102692-018	ES2102692-019	ES2102692-021
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
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	72-54-8/72-55-9/5 0-2	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
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)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



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP07_0.5	TP09_0.1	TP09_0.5	TP10_0.1	TP11_0.1
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-014	ES2102692-017	ES2102692-018	ES2102692-019	ES2102692-021
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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
^ >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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP07_0.5	TP09_0.1	TP09_0.5	TP10_0.1	TP11_0.1
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-014	ES2102692-017	ES2102692-018	ES2102692-019	ES2102692-021
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ 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
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	85.6	----	89.4	79.5
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		120	71.5	89.2	80.6	78.6
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		102	110	65.6	118	126
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	100	----	102	102
2-Chlorophenol-D4	93951-73-6	0.5	%		----	94.2	----	95.9	97.1
2,4,6-Tribromophenol	118-79-6	0.5	%		----	85.1	----	88.6	95.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	100	----	103	104
Anthracene-d10	1719-06-8	0.5	%		----	98.5	----	101	102
4-Terphenyl-d14	1718-51-0	0.5	%		----	85.9	----	88.2	88.2
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		----	107	----	107	104
Toluene-D8	2037-26-5	0.2	%		----	111	----	113	113
4-Bromofluorobenzene	460-00-4	0.2	%		----	104	----	108	106



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP11_0.5	TP13_0.1	TP13_0.5	TP16_0.5	TP16_0.1
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-022	ES2102692-025	ES2102692-026	ES2102692-032	ES2102692-033
				Result	Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		16.1	9.9	18.0	22.1	6.1
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		12	6	16	14	12
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg		<5	<5	5	8	7
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg		<5	20	<5	<5	34
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
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
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



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP11_0.5	TP13_0.1	TP13_0.5	TP16_0.5	TP16_0.1
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-022	ES2102692-025	ES2102692-026	ES2102692-032	ES2102692-033
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
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	72-54-8/72-55-9/5 0-2	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
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)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	----	----	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP11_0.5	TP13_0.1	TP13_0.5	TP16_0.5	TP16_0.1
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-022	ES2102692-025	ES2102692-026	ES2102692-032	ES2102692-033
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	----	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	<0.5	----	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	<0.5	----	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	----	----	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	----	----	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	<0.5	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	0.6	----	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	1.2	----	----	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	<10	----	----	<10
C10 - C14 Fraction	----	50	mg/kg	----	<50	----	----	<50
C15 - C28 Fraction	----	100	mg/kg	----	<100	----	----	<100
C29 - C36 Fraction	----	100	mg/kg	----	<100	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	<50	----	----	<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	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg	----	<100	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg	----	<100	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	<50	----	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	<50	----	----	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	----	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP11_0.5	TP13_0.1	TP13_0.5	TP16_0.5	TP16_0.1
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-022	ES2102692-025	ES2102692-026	ES2102692-032	ES2102692-033
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	----	----	<0.5
Naphthalene	91-20-3	1	mg/kg		----	<1	----	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	78.5	----	----	110
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		91.6	108	83.7	106	126
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		65.8	59.1	66.8	96.6	115
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	101	----	----	92.7
2-Chlorophenol-D4	93951-73-6	0.5	%		----	95.8	----	----	94.8
2,4,6-Tribromophenol	118-79-6	0.5	%		----	86.0	----	----	84.1
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	102	----	----	110
Anthracene-d10	1719-06-8	0.5	%		----	101	----	----	104
4-Terphenyl-d14	1718-51-0	0.5	%		----	87.0	----	----	96.5
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		----	106	----	----	103
Toluene-D8	2037-26-5	0.2	%		----	114	----	----	111
4-Bromofluorobenzene	460-00-4	0.2	%		----	106	----	----	103



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP20_0.5	TP20_0.1	Micro_01	Micro_02	Micro_03
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-038	ES2102692-039	ES2102692-042	ES2102692-043	ES2102692-044
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		----	----	6.3	7.6	8.2
Moisture Content	----	1.0	%		19.8	4.9	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	13	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg		12	6	----	----	----
Copper	7440-50-8	5	mg/kg		<5	37	----	----	----
Lead	7439-92-1	5	mg/kg		7	47	----	----	----
Nickel	7440-02-0	2	mg/kg		<2	7	----	----	----
Zinc	7440-66-6	5	mg/kg		<5	273	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	0.2	----	----	----
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	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP20_0.5	TP20_0.1	Micro_01	Micro_02	Micro_03
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-038	ES2102692-039	ES2102692-042	ES2102692-043	ES2102692-044
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	----	----
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	----	0.9	----	----	----
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

				TP20_0.5	TP20_0.1	Micro_01	Micro_02	Micro_03
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-038	ES2102692-039	ES2102692-042	ES2102692-043	ES2102692-044
				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	----	0.9	----	----	----
^ 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	----	130	----	----	----
C29 - C36 Fraction	----	100	mg/kg	----	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	130	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	12	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	12	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	----	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	----	150	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	----	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	150	----	----	----
^ >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	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP20_0.5	TP20_0.1	Micro_01	Micro_02	Micro_03
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-038	ES2102692-039	ES2102692-042	ES2102692-043	ES2102692-044
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
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	----	----	----
MM804: Faecal Coliforms & E.coli by MPN									
Faecal Coliforms	----	2	MPN/g		----	----	14	2	1000
Escherichia coli	----	2	MPN/g		----	----	14	2	1000
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	94.4	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		104	97.5	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		100	103	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	90.9	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	90.8	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		----	83.9	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	109	----	----	----
Anthracene-d10	1719-06-8	0.5	%		----	104	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	96.7	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		----	104	----	----	----
Toluene-D8	2037-26-5	0.2	%		----	112	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	103	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Micro_04	Micro_05	Micro_06	BH01_0.05	BH02_0.05
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-045	ES2102692-046	ES2102692-047	ES2102692-048	ES2102692-049
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		7.3	6.0	7.2	----	----
Moisture Content	----	1.0	%		----	----	----	8.8	7.8
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		----	----	----	6	<5
Cadmium	7440-43-9	1	mg/kg		----	----	----	<1	<1
Chromium	7440-47-3	2	mg/kg		----	----	----	8	4
Copper	7440-50-8	5	mg/kg		----	----	----	<5	<5
Lead	7439-92-1	5	mg/kg		----	----	----	8	5
Nickel	7440-02-0	2	mg/kg		----	----	----	<2	<2
Zinc	7440-66-6	5	mg/kg		----	----	----	8	9
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	----	----	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	----	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	----	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		----	----	----	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	----	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		----	----	----	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		----	----	----	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	----	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		----	----	----	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				Micro_04	Micro_05	Micro_06	BH01_0.05	BH02_0.05
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-045	ES2102692-046	ES2102692-047	ES2102692-048	ES2102692-049
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	----	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	----	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	----	----	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	----	----	----	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	----	----	----	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	----	----	----	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	----	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	----	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				Micro_04	Micro_05	Micro_06	BH01_0.05	BH02_0.05
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-045	ES2102692-046	ES2102692-047	ES2102692-048	ES2102692-049
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Pyrene	129-00-0	0.5	mg/kg	----	----	----	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	----	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	----	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg	----	----	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg	----	----	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg	----	----	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	<50	<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	<50
>C16 - C34 Fraction	----	100	mg/kg	----	----	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	----	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	----	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	----	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Micro_04	Micro_05	Micro_06	BH01_0.05	BH02_0.05
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-045	ES2102692-046	ES2102692-047	ES2102692-048	ES2102692-049
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		----	----	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		----	----	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		----	----	----	<1	<1
MM804: Faecal Coliforms & E.coli by MPN									
Faecal Coliforms	----	2	MPN/g		18	<2	36	----	----
Escherichia coli	----	2	MPN/g		18	<2	36	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	104	103
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	110	112
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	110	106
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	----	----	90.0	89.0
2-Chlorophenol-D4	93951-73-6	0.5	%		----	----	----	91.7	90.3
2,4,6-Tribromophenol	118-79-6	0.5	%		----	----	----	84.7	83.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	----	----	109	106
Anthracene-d10	1719-06-8	0.5	%		----	----	----	102	97.9
4-Terphenyl-d14	1718-51-0	0.5	%		----	----	----	95.3	92.8
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	----	106	101
Toluene-D8	2037-26-5	0.2	%		----	----	----	113	111
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	----	103	102



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH03_0.05	BH04_0.05	BH05_0.05	BH06_0.05	BH07_0.05
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-050	ES2102692-051	ES2102692-052	ES2102692-053	ES2102692-054
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		10.5	11.9	6.7	8.6	6.2
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		4	7	4	4	4
Copper	7440-50-8	5	mg/kg		<5	150	<5	<5	<5
Lead	7439-92-1	5	mg/kg		5	5	7	5	6
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg		8	18	8	7	<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
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



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH03_0.05	BH04_0.05	BH05_0.05	BH06_0.05	BH07_0.05
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-050	ES2102692-051	ES2102692-052	ES2102692-053	ES2102692-054
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
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	72-54-8/72-55-9/5 0-2	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
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)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



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH03_0.05	BH04_0.05	BH05_0.05	BH06_0.05	BH07_0.05
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-050	ES2102692-051	ES2102692-052	ES2102692-053	ES2102692-054
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH03_0.05	BH04_0.05	BH05_0.05	BH06_0.05	BH07_0.05
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-050	ES2102692-051	ES2102692-052	ES2102692-053	ES2102692-054
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ 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
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		104	98.5	104	108	103
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		119	104	102	101	96.8
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		112	99.1	98.5	98.3	91.5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		89.8	92.4	90.8	92.7	89.7
2-Chlorophenol-D4	93951-73-6	0.5	%		91.9	94.2	92.8	94.7	90.9
2,4,6-Tribromophenol	118-79-6	0.5	%		83.7	86.6	85.5	86.3	82.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		109	111	109	111	108
Anthracene-d10	1719-06-8	0.5	%		102	103	102	102	100
4-Terphenyl-d14	1718-51-0	0.5	%		94.9	97.5	94.6	97.0	93.1
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		106	102	106	106	96.9
Toluene-D8	2037-26-5	0.2	%		112	108	115	111	103
4-Bromofluorobenzene	460-00-4	0.2	%		103	99.8	106	104	91.8

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH08_0.05	BH09_0.6	NEPM Screen 01	NEPM Screen 02	ACM_001
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	28-Jan-2021 00:00	
Compound	CAS Number	LOR	Unit	ES2102692-055	ES2102692-056	ES2102692-058	ES2102692-059	ES2102692-060	
				Result	Result	Result	Result	Result	
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit	----	----	8.2	4.4	----	
EA002: pH 1:5 (Soils)									
pH Value	----	0.1	pH Unit	----	----	9.0	5.0	----	
EA010: Conductivity (1:5)									
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	196	8	----	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%	----	----	10.1	4.5	----	
Moisture Content	----	1.0	%	7.0	6.6	----	----	----	
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%	----	----	23	8	----	
EA152: Soil Particle Density									
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	----	2.53	2.61	----	
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	----	No	
Asbestos Type	1332-21-4	-	--	----	----	----	----	-	
Asbestos (Trace)	1332-21-4	5	Fibres	----	----	----	----	No	
Sample weight (dry)	----	0.01	g	----	----	----	----	425	
Synthetic Mineral Fibre	----	0.1	g/kg	----	----	----	----	No	
Organic Fibre	----	0.1	g/kg	----	----	----	----	No	
APPROVED IDENTIFIER:	----	-	--	----	----	----	----	A. SMYIE	
EA200N: Asbestos Quantification (non-NATA)									
∅ Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	----	----	----	<0.0004	
∅ Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	----	----	----	<0.001	
∅ Weight Used for % Calculation	----	0.0001	kg	----	----	----	----	0.425	
∅ Fibrous Asbestos >7mm	----	0.0004	g	----	----	----	----	<0.0004	
ED006: Exchangeable Cations on Alkaline Soils									
Exchangeable Calcium	----	0.2	meq/100g	----	----	6.5	----	----	
Exchangeable Magnesium	----	0.2	meq/100g	----	----	3.6	----	----	
Exchangeable Potassium	----	0.2	meq/100g	----	----	0.5	----	----	
Exchangeable Sodium	----	0.2	meq/100g	----	----	1.9	----	----	
Cation Exchange Capacity	----	0.2	meq/100g	----	----	12.5	----	----	
Exchangeable Sodium Percent	----	0.2	%	----	----	15.1	----	----	
ED007: Exchangeable Cations									



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH08_0.05	BH09_0.6	NEPM Screen 01	NEPM Screen 02	ACM_001
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	28-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-055	ES2102692-056	ES2102692-058	ES2102692-059	ES2102692-060
				Result	Result	Result	Result	Result
ED007: Exchangeable Cations - Continued								
Exchangeable Calcium	----	0.1	meq/100g	----	----	----	<0.1	----
Exchangeable Magnesium	----	0.1	meq/100g	----	----	----	0.2	----
Exchangeable Potassium	----	0.1	meq/100g	----	----	----	<0.1	----
Exchangeable Sodium	----	0.1	meq/100g	----	----	----	<0.1	----
Cation Exchange Capacity	----	0.1	meq/100g	----	----	----	0.4	----
Exchangeable Sodium Percent	----	0.1	%	----	----	----	12.4	----
EG005(ED093)T: Total Metals by ICP-AES								
Iron	7439-89-6	0.005	%	----	----	2.62	0.199	----
Arsenic	7440-38-2	5	mg/kg	<5	<5	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	4	<2	----	----	----
Copper	7440-50-8	5	mg/kg	<5	<5	----	----	----
Lead	7439-92-1	5	mg/kg	5	<5	----	----	----
Nickel	7440-02-0	2	mg/kg	<2	<2	----	----	----
Zinc	7440-66-6	5	mg/kg	<5	<5	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP004: Organic Matter								
Organic Matter	----	0.5	%	----	----	2.6	0.9	----
Total Organic Carbon	----	0.5	%	----	----	1.5	0.5	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH08_0.05	BH09_0.6	NEPM Screen 01	NEPM Screen 02	ACM_001
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	28-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-055	ES2102692-056	ES2102692-058	ES2102692-059	ES2102692-060
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<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	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH08_0.05	BH09_0.6	NEPM Screen 01	NEPM Screen 02	ACM_001
Sampling date / time				27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	28-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-055	ES2102692-056	ES2102692-058	ES2102692-059	ES2102692-060
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<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	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH08_0.05	BH09_0.6	NEPM Screen 01	NEPM Screen 02	ACM_001
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	28-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-055	ES2102692-056	ES2102692-058	ES2102692-059	ES2102692-060
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		95.7	109	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		85.6	103	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		85.0	104	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		92.8	94.6	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		94.4	94.9	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		84.6	87.3	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		112	112	----	----	----
Anthracene-d10	1719-06-8	0.5	%		103	103	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		96.3	96.6	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		103	106	----	----	----
Toluene-D8	2037-26-5	0.2	%		107	111	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		98.9	100	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	ACM_002	ACM_003	ACM_004	ACM_005	QC02
Sampling date / time					28-Jan-2021 00:00	28-Jan-2021 00:00	28-Jan-2021 00:00	28-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2102692-061	ES2102692-062	ES2102692-063	ES2102692-064	ES2102692-067
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		----	----	----	----	19.3
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	No	No	----
Asbestos Type	1332-21-4	-	--		-	-	-	-	----
Asbestos (Trace)	1332-21-4	5	Fibres		No	No	No	No	----
Sample weight (dry)	----	0.01	g		549	444	903	386	----
Synthetic Mineral Fibre	----	0.1	g/kg		No	No	No	No	----
Organic Fibre	----	0.1	g/kg		No	No	No	No	----
APPROVED IDENTIFIER:	----	-	--		A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	----
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	----
Ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		<0.001	<0.001	<0.001	<0.001	----
Ø Weight Used for % Calculation	----	0.0001	kg		0.549	0.444	0.903	0.386	----
Ø Fibrous Asbestos >7mm	----	0.0004	g		<0.0004	<0.0004	<0.0004	<0.0004	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		----	----	----	----	12
Cadmium	7440-43-9	1	mg/kg		----	----	----	----	<1
Chromium	7440-47-3	2	mg/kg		----	----	----	----	3
Copper	7440-50-8	5	mg/kg		----	----	----	----	16
Lead	7439-92-1	5	mg/kg		----	----	----	----	31
Nickel	7440-02-0	2	mg/kg		----	----	----	----	6
Zinc	7440-66-6	5	mg/kg		----	----	----	----	126
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



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				ACM_002	ACM_003	ACM_004	ACM_005	QC02
Sampling date / time				28-Jan-2021 00:00	28-Jan-2021 00:00	28-Jan-2021 00:00	28-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-061	ES2102692-062	ES2102692-063	ES2102692-064	ES2102692-067
				Result	Result	Result	Result	Result

EP068A: Organochlorine Pesticides (OC) - Continued

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
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
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	----	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				ACM_002	ACM_003	ACM_004	ACM_005	QC02
Sampling date / time				28-Jan-2021 00:00	28-Jan-2021 00:00	28-Jan-2021 00:00	28-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-061	ES2102692-062	ES2102692-063	ES2102692-064	ES2102692-067
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
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)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	----	0.8
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	----	----	----	----	1.1
Anthracene	120-12-7	0.5	mg/kg	----	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	----	----	----	<0.5
Benzo(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	----	----	----	----	1.9
^ 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	----	----	----	----	160
C29 - C36 Fraction	----	100	mg/kg	----	----	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	----	160
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	----	<10



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				ACM_002	ACM_003	ACM_004	ACM_005	QC02
Sampling date / time				28-Jan-2021 00:00	28-Jan-2021 00:00	28-Jan-2021 00:00	28-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-061	ES2102692-062	ES2102692-063	ES2102692-064	ES2102692-067
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ 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	----	----	----	----	180
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	----	----	180
^ >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
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	----	96.4
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	----	----	----	121
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	----	----	----	108
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	----	----	----	92.7
2-Chlorophenol-D4	93951-73-6	0.5	%	----	----	----	----	93.4
2,4,6-Tribromophenol	118-79-6	0.5	%	----	----	----	----	87.1
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	----	----	----	110
Anthracene-d10	1719-06-8	0.5	%	----	----	----	----	103
4-Terphenyl-d14	1718-51-0	0.5	%	----	----	----	----	96.9
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	----	----	----	----	98.1
Toluene-D8	2037-26-5	0.2	%	----	----	----	----	101



Analytical Results

Sub-Matrix: **SOIL**
 (Matrix: **SOIL**)

Sample ID

				ACM_002	ACM_003	ACM_004	ACM_005	QC02
Sampling date / time				28-Jan-2021 00:00	28-Jan-2021 00:00	28-Jan-2021 00:00	28-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2102692-061	ES2102692-062	ES2102692-063	ES2102692-064	ES2102692-067
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued								
4-Bromofluorobenzene	460-00-4	0.2	%	----	----	----	----	89.4



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC04	TB	TS	TSC	----
Sampling date / time					27-Jan-2021 00:00	22-Jan-2021 00:00	19-Jan-2021 00:00	19-Jan-2021 00:00	----
Compound	CAS Number	LOR	Unit		ES2102692-068	ES2102692-070	ES2102692-071	ES2102692-072	-----
					Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		7.9	----	----	----	----
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		6	----	----	----	----
Copper	7440-50-8	5	mg/kg		<5	----	----	----	----
Lead	7439-92-1	5	mg/kg		11	----	----	----	----
Nickel	7440-02-0	2	mg/kg		<2	----	----	----	----
Zinc	7440-66-6	5	mg/kg		6	----	----	----	----
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	----	----	----	----
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	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				QC04	TB	TS	TSC	----
Sampling date / time				27-Jan-2021 00:00	22-Jan-2021 00:00	19-Jan-2021 00:00	19-Jan-2021 00:00	----
Compound	CAS Number	LOR	Unit	ES2102692-068	ES2102692-070	ES2102692-071	ES2102692-072	-----
				Result	Result	Result	Result	----
EP068A: Organochlorine Pesticides (OC) - Continued								
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	----	----	----	----
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)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	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				QC04	TB	TS	TSC	----
Sampling date / time				27-Jan-2021 00:00	22-Jan-2021 00:00	19-Jan-2021 00:00	19-Jan-2021 00:00	----
Compound	CAS Number	LOR	Unit	ES2102692-068	ES2102692-070	ES2102692-071	ES2102692-072	-----
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	68	70	----
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	83	86	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	45	47	----
>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	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.3	0.3	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	16.5	17.0	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	2.6	2.7	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	13.0	13.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	5.6	5.8	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC04	TB	TS	TSC	----
Sampling date / time					27-Jan-2021 00:00	22-Jan-2021 00:00	19-Jan-2021 00:00	19-Jan-2021 00:00	----
Compound	CAS Number	LOR	Unit		ES2102692-068	ES2102692-070	ES2102692-071	ES2102692-072	-----
					Result	Result	Result	Result	----
EP080: BTEXN - Continued									
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	38.0	39.3	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	18.6	19.3	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		98.9	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		82.6	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		82.5	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		90.7	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		92.2	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		83.8	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		110	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		102	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		95.7	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		101	105	87.2	98.7	----
Toluene-D8	2037-26-5	0.2	%		108	110	104	111	----
4-Bromofluorobenzene	460-00-4	0.2	%		97.7	102	115	127	----



Analytical Results

Sub-Matrix: **SOLID**
 (Matrix: **SOLID**)

Sample ID

				ACM_ID_01	ACM_ID_02	----	----	----
Sampling date / time				28-Jan-2021 00:00	28-Jan-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2102692-065	ES2102692-066	-----	-----	-----
Result				Result	Result	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	Yes	No	----	----	----
Asbestos Type	1332-21-4	-	--	Ch	-	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	N/A	No	----	----	----
Sample weight (dry)	----	0.01	g	75.0	7.45	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	----	----	----
Organic Fibre	----	0.1	g/kg	No	No	----	----	----
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	----	----	----



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Sample ID

				RW102	----	----	----	----
Sampling date / time				28-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2102692-069	-----	-----	-----	-----
Result				----	----	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
^ Total Polychlorinated biphenyls	----	1	µg/L	<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Sample ID

				RW102	----	----	----	----
Sampling date / time				28-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2102692-069	-----	-----	-----	-----
Result				----	----	----	----	----

EP068A: Organochlorine Pesticides (OC) - Continued

^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.5	µg/L	<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	----	----	----	----

EP068B: Organophosphorus Pesticides (OP)

Dichlorvos	62-73-7	0.5	µg/L	<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	----	----	----	----

EP075(SIM)B: Polynuclear Aromatic Hydrocarbons

Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Sample ID

				RW102	----	----	----	----
				28-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2102692-069	-----	-----	-----	-----
				Result	----	----	----	----

EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued

Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----

EP080/071: Total Petroleum Hydrocarbons

C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----

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	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----

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	----	----	----	----

EP066S: PCB Surrogate

Decachlorobiphenyl	2051-24-3	1	%	88.3	----	----	----	----
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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RW102	----	----	----	----
Sampling date / time					28-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2102692-069	-----	-----	-----	-----
Result						----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		94.6	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		86.3	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		20.7	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		40.2	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		45.6	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		56.2	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		72.8	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		92.9	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		95.7	----	----	----	----
Toluene-D8	2037-26-5	2	%		98.8	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		102	----	----	----	----

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	ACM_001 - 28-Jan-2021 00:00	Mid brown soil.
EA200: Description	ACM_002 - 28-Jan-2021 00:00	Mid brown soil.
EA200: Description	ACM_003 - 28-Jan-2021 00:00	Mid brown soil.
EA200: Description	ACM_004 - 28-Jan-2021 00:00	Mid brown soil.
EA200: Description	ACM_005 - 28-Jan-2021 00:00	Mid brown soil.
Sub-Matrix: SOLID		
Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	ACM_ID_01 - 28-Jan-2021 00:00	One piece of asbestos cement sheeting approximately 120x80x5mm.
EA200: Description	ACM_ID_02 - 28-Jan-2021 00:00	Two pieces of cement sheeting.



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	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

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	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
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	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

Page : 53 of 53
Work Order : ES2102692
Client : EP Risk Management
Project : MANDALONG ROAD



Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates - Continued			

QUALITY CONTROL REPORT

Work Order	: ES2102692	Page	: 1 of 29
Client	: EP Risk Management	Laboratory	: Environmental Division Sydney
Contact	: MR STUART LORD	Contact	: Hannah White
Address	: 3/19 BOLTON STREET NEWCASTLE NSW 2300	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: MANDALONG ROAD	Date Samples Received	: 28-Jan-2021
Order number	: ----	Date Analysis Commenced	: 29-Jan-2021
C-O-C number	: ----	Issue Date	: 05-Feb-2021
Sampler	: ----		
Site	: ----		
Quote number	: SY/497/20 Primary analysis only		
No. of samples received	: 72		
No. of samples analysed	: 52		



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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Aleksandar Vujkovic	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
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Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
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Somlok Chai	Microbiologist	Sydney Microbiology, 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

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

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3488025)									
ES2102692-002	TP01_0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	4	4	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	5	5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	9	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	38	33	14.0	No Limit
		EG005T: Iron	7439-89-6	50	mg/kg	5540	5220	5.89	0% - 20%
ES2102692-034	TP18_0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	15	35.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Iron	7439-89-6	50	mg/kg	18100	# 22900	23.2	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3490289)									
ES2102692-001	TP01_0.1 TP01_1.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	8	8	0.00	No Limit
ES2102692-023	TP12_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	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 (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3490289) - continued									
ES2102692-023	TP12_0.1	EG005T: Chromium	7440-47-3	2	mg/kg	5	3	61.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	<5	22.3	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	18	16	13.4	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3490292)									
ES2102692-049	BH02_0.05	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	4	7	42.3	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	5	7	24.3	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	9	8	0.00	No Limit		
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 3488576)									
ES2102692-058	NEPM Screen 01	EA001: pH (CaCl2)	----	0.1	pH Unit	8.2	8.3	0.00	0% - 20%
EA002: pH 1:5 (Soils) (QC Lot: 3485414)									
ES2102692-058	NEPM Screen 01	EA002: pH Value	----	0.1	pH Unit	9.0	9.0	0.00	0% - 20%
EA010: Conductivity (1:5) (QC Lot: 3485415)									
ES2102692-058	NEPM Screen 01	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	196	175	11.3	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3488033)									
ES2102692-010	TP05_0.5	EA055: Moisture Content	----	0.1	%	12.7	13.0	2.82	0% - 50%
ES2102692-059	NEPM Screen 02	EA055: Moisture Content	----	0.1	%	4.5	5.3	16.2	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3490295)									
ES2102692-007	TP04_0.1	EA055: Moisture Content	----	0.1	%	15.4	15.4	0.00	0% - 50%
ES2102692-029	TP15_0.1	EA055: Moisture Content	----	0.1	%	7.1	6.9	2.82	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3490296)									
ES2102692-051	BH04_0.05	EA055: Moisture Content	----	0.1	%	11.9	10.7	10.4	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3492682)									
ES2102692-043	Micro_02	EA055: Moisture Content	----	0.1	%	7.6	7.1	6.63	0% - 20%
ES2103421-006	Anonymous	EA055: Moisture Content	----	0.1	%	<1.0	<1.0	0.00	No Limit
ED006: Exchangeable Cations on Alkaline Soils (QC Lot: 3495118)									
ES2102692-058	NEPM Screen 01	ED006: Exchangeable Sodium Percent	----	0.2	%	15.1	15.1	0.00	0% - 20%
		ED006: Exchangeable Calcium	----	0.2	meq/100g	6.5	6.2	4.18	0% - 20%
		ED006: Exchangeable Magnesium	----	0.2	meq/100g	3.6	3.5	4.42	0% - 50%
		ED006: Exchangeable Potassium	----	0.2	meq/100g	0.5	0.5	0.00	No Limit
		ED006: Exchangeable Sodium	----	0.2	meq/100g	1.9	1.8	0.00	No Limit
		ED006: Cation Exchange Capacity	----	0.2	meq/100g	12.5	12.0	4.24	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 (%)	Recovery Limits (%)
ED007: Exchangeable Cations (QC Lot: 3495121)									
ES2102692-059	NEPM Screen 02	ED007: Exchangeable Sodium Percent	----	0.1	%	12.4	12.0	3.08	0% - 20%
		ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	<0.1	0.00	No Limit
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	0.2	0.2	0.00	No Limit
		ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	<0.1	0.00	No Limit
		ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	<0.1	0.00	No Limit
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	0.4	0.4	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3488026)									
ES2102692-002	TP01_0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2102692-034	TP18_0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3490290)									
ES2102692-001	TP01_0.1 TP01_1.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2102692-023	TP12_0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3490291)									
ES2102692-049	BH02_0.05	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP004: Organic Matter (QC Lot: 3485076)									
ES2102642-012	Anonymous	EP004: Organic Matter	----	0.5	%	0.6	0.6	0.00	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3483700)									
ES2102692-001	TP01_0.1 TP01_1.2	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2102692-023	TP12_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3483705)									
ES2102692-033	TP16_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2102692-053	BH06_0.05	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3483699)									
ES2102692-001	TP01_0.1 TP01_1.2	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	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 (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3483699) - continued									
ES2102692-001	TP01_0.1 TP01_1.2	EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES2102692-023	TP12_0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3483704)									
ES2102692-033	TP16_0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	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 (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3483704) - continued									
ES2102692-033	TP16_0.1	EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit		
ES2102692-053	BH06_0.05	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068A: Organochlorine Pesticides (OC) (QC Lot: 3486407)							
ES2102915-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.25	<0.25	0.00	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 (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3486407) - continued									
ES2102915-001	Anonymous	EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
ES2102915-008	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3483699)							
ES2102692-001	TP01_0.1 TP01_1.2	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	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 (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3483699) - continued									
ES2102692-001	TP01_0.1 TP01_1.2	EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES2102692-023	TP12_0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3483704)							
ES2102692-033	TP16_0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	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 (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3483704) - continued									
ES2102692-033	TP16_0.1	EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES2102692-053	BH06_0.05	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3486407)							
ES2102915-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.25	<0.25	0.00	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 (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3486407) - continued									
ES2102915-001	Anonymous	EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
ES2102915-008	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3483698)							
ES2102692-001	TP01_0.1 TP01_1.2	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	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 (%)	Recovery Limits (%)	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3483698) - continued										
ES2102692-001	TP01_0.1 TP01_1.2	EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
	EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
ES2102692-023	TP12_0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
			EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3483707)								
ES2102692-033	TP16_0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	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 (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3483707) - continued									
ES2102692-033	TP16_0.1	EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
ES2102692-053	BH06_0.05	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3483697)							
ES2102692-001	TP01_0.1 TP01_1.2	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2102692-023	TP12_0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3483706)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3483706) - continued									
ES2102692-033	TP16_0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2102692-053	BH06_0.05	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3488977)									
ES2102692-001	TP01_0.1 TP01_1.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES2102692-023	TP12_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3488994)									
ES2102692-049	BH02_0.05	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES2102692-068	QC04	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3483697)									
ES2102692-001	TP01_0.1 TP01_1.2	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2102692-023	TP12_0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3483706)									
ES2102692-033	TP16_0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2102692-053	BH06_0.05	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3488977)									
ES2102692-001	TP01_0.1 TP01_1.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES2102692-023	TP12_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3488994)									
ES2102692-049	BH02_0.05	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES2102692-068	QC04	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 3488977)									
ES2102692-001	TP01_0.1 TP01_1.2	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	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 (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 3488977) - continued									
ES2102692-001	TP01_0.1 TP01_1.2	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES2102692-023	TP12_0.1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 3488994)									
ES2102692-049	BH02_0.05	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES2102692-068	QC04	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
		EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	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 (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 3488015)									
ES2102437-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.1 µg/L	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<1 µg/L	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	2 µg/L	<0.001	69.4	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<1 µg/L	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<1 µg/L	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<5 µg/L	<0.005	0.00	No Limit
ES2102833-006	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.012	0.014	17.8	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 (%)	Recovery Limits (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3490391)									
ES2102692-069	RW102	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES2103021-003	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3489409)									
ES2102692-069	RW102	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES2103136-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3489409)									
ES2102692-069	RW102	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES2103136-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 3489409)									
ES2102692-069	RW102	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
ES2103136-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (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 Spike (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**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3488025)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	94.9	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	92.5	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	92.0	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	100	89.0	111
EG005T: Iron	7439-89-6	50	mg/kg	<50	33227 mg/kg	96.6	89.0	112
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	93.7	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	93.1	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	74.9	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3490289)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	100	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	86.5	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	97.0	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	96.0	89.0	111
EG005T: Iron	7439-89-6	50	mg/kg	<50	33227 mg/kg	99.2	89.0	112
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	91.6	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	89.5	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	79.2	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3490292)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	89.1	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	96.1	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	91.8	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	98.9	89.0	111
EG005T: Iron	7439-89-6	50	mg/kg	<50	33227 mg/kg	94.8	89.0	112
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	85.5	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	80.4	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	66.1	66.0	133
EA010: Conductivity (1:5) (QCLot: 3485415)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	96.6	92.0	108
ED006: Exchangeable Cations on Alkaline Soils (QCLot: 3495118)								
ED006: Exchangeable Calcium	----	0.2	meq/100g	<0.2	2.5 meq/100g	99.2	80.0	110
ED006: Exchangeable Magnesium	----	0.2	meq/100g	<0.2	4.17 meq/100g	88.7	80.0	110
ED006: Exchangeable Potassium	----	0.2	meq/100g	<0.2	1.28 meq/100g	96.9	80.0	110
ED006: Exchangeable Sodium	----	0.2	meq/100g	<0.2	2.17 meq/100g	96.8	80.0	110
ED006: Cation Exchange Capacity	----	0.2	meq/100g	<0.2	----	----	----	----



Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
ED006: Exchangeable Cations on Alkaline Soils (QCLot: 3495118) - continued								
ED006: Exchangeable Sodium Percent	----	0.2	%	<0.2	----	----	----	----
ED007: Exchangeable Cations (QCLot: 3495121)								
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	1 meq/100g	99.0	75.8	120
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	1.67 meq/100g	89.2	74.9	115
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	0.51 meq/100g	96.1	80.0	120
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	0.87 meq/100g	89.6	80.0	120
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----
ED007: Exchangeable Sodium Percent	----	0.1	%	<0.1	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3488026)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	82.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3490290)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	103	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3490291)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	89.2	70.0	130
EP004: Organic Matter (QCLot: 3485076)								
EP004: Organic Matter	----	0.5	%	<0.5	2.53 %	88.5	82.0	98.0
EP004: Total Organic Carbon	----	0.5	%	<0.5	1.46 %	89.0	81.0	99.0
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3483700)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	94.2	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3483705)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	99.8	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 3483699)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.0	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.5	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	87.9	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.9	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.3	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.2	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	100	66.0	116
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	94.3	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.3	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	81.9	69.0	115



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP068A: Organochlorine Pesticides (OC) (QCLot: 3483699) - continued								
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	86.3	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.5	62.0	124
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	79.9	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.4	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	92.4	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3483704)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	101	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	106	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	105	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.3	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	101	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	103	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	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	104	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	69.0	115
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.6	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	62.0	124
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	104	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	100	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	101	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3486407)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.7	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	83.9	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	92.1	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	85.8	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.8	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.2	66.0	116



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP068A: Organochlorine Pesticides (OC) (QCLot: 3486407) - continued								
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.9	66.0	116
EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.2	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	85.9	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	69.0	115
EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	62.0	124
EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	90.2	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	86.5	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3483699)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	83.8	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	79.6	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	78.6	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	81.1	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.5	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	81.8	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	83.5	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.8	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	85.4	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.8	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	78.0	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.2	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	79.9	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	72.9	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3483704)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	78.1	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	79.6	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	92.4	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	96.2	68.0	120



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3483704) - continued								
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	104	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	97.7	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	102	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	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	96.0	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	107	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	100	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	101	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3486407)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	79.9	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	75.9	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	77.5	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.1	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	83.8	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	81.9	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	79.4	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.8	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	80.6	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	88.8	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.3	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	76.0	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.6	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	81.2	41.0	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3483698)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	117	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	115	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	114	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	117	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	120	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	123	77.0	127



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3486891) - continued								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	102	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3488977)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	107	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3488994)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	103	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3483697)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	91.4	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	95.4	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	92.8	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3483706)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	96.1	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	98.3	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	99.4	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3486891)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	103	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3488977)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	110	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3488994)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	104	68.4	128
EP080: BTEXN (QCLot: 3486891)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	92.7	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	100	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.8	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	99.1	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	106	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	99.0	63.0	119
EP080: BTEXN (QCLot: 3488977)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	107	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	110	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	108	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	109	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	109	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	103	63.0	119
EP080: BTEXN (QCLot: 3488994)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	102	62.0	116



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
EP080: BTEXN (QCLot: 3488994) - continued								
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	100	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.7	65.0	117
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	97.7	66.0	118
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	98.9	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	91.6	63.0	119

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
Method: Compound	CAS Number	LOR	Unit		Result	Spike	Spike Recovery (%)	Recovery Limits (%)	
						Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 3488015)									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	91.6	82.0	114	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.7	84.0	112	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.2	86.0	116	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.4	83.0	118	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	89.7	85.0	115	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	88.9	84.0	116	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	87.5	79.0	117	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3490391)									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.6	77.0	111	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3488102)									
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	89.8	68.9	113	
EP068A: Organochlorine Pesticides (OC) (QCLot: 3488100)									
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	81.7	64.9	107	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	92.6	58.3	111	
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	80.0	69.0	117	
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	85.6	70.0	112	
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	88.2	68.9	110	
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	83.8	65.2	108	
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	87.5	65.8	109	
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	98.4	67.1	107	
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	99.4	64.1	110	
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	86.9	66.7	112	
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	92.0	63.2	111	
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	93.6	65.2	113	
EP068: 4,4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	94.0	66.0	112	
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	93.0	65.2	113	
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	88.3	67.3	114	
EP068: 4,4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	100	72.0	122	



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit						
EP068A: Organochlorine Pesticides (OC) (QCLot: 3488100) - continued								
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	90.4	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	79.9	65.2	112
EP068: 4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	86.6	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	86.2	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	87.6	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3488100)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	82.6	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	79.8	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	25.2	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	89.9	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	78.8	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	79.5	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	81.0	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	89.1	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	86.1	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	82.6	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	80.0	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	86.6	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	94.2	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	99.3	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	80.1	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	95.4	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	94.5	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	89.1	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	72.6	51.6	128
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3488101)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	66.0	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	71.8	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	72.1	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	72.8	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	75.9	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	81.0	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	95.1	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	97.0	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	92.1	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	95.6	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	81.2	61.7	119
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	101	63.0	115



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit	Result					
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3488101) - continued								
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	85.7	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	85.3	59.9	118
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	84.6	61.2	117
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	81.8	59.1	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3488099)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	76.0	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	78.4	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	79.5	56.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3489409)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	89.1	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3488099)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	66.6	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	82.2	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	77.0	61.5	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3489409)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	92.2	75.0	127
EP080: BTEXN (QCLot: 3489409)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	83.2	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	87.3	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	89.3	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	89.5	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	88.2	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	90.9	70.0	120

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				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%)	Recovery Limits (%)	
					MS	Low	High
Sample ID	Method: Compound	CAS Number					
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3488025)							
ES2102692-002	TP01_0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	88.6	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	89.9	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	79.9	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	91.8	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	90.6	70.0	130



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3488025) - continued							
ES2102692-002	TP01_0.5	EG005T: Nickel	7440-02-0	50 mg/kg	86.2	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	92.2	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3490289)							
ES2102692-001	TP01_0.1 TP01_1.2	EG005T: Arsenic	7440-38-2	50 mg/kg	109	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	99.8	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	101	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	101	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	117	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3490292)							
ES2102692-049	BH02_0.05	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	93.0	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	94.4	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	96.9	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	90.0	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	91.9	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	101	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3488026)							
ES2102692-002	TP01_0.5	EG035T: Mercury	7439-97-6	5 mg/kg	77.3	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3490290)							
ES2102692-001	TP01_0.1 TP01_1.2	EG035T: Mercury	7439-97-6	5 mg/kg	80.5	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3490291)							
ES2102692-049	BH02_0.05	EG035T: Mercury	7439-97-6	5 mg/kg	76.2	70.0	130
EP004: Organic Matter (QCLot: 3485076)							
ES2102642-012	Anonymous	EP004: Organic Matter	----	0.45 %	71.0	70.0	130
		EP004: Total Organic Carbon	----	0.26 %	70.4	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3483700)							
ES2102692-001	TP01_0.1 TP01_1.2	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	96.0	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3483705)							
ES2102692-033	TP16_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	80.2	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3483699)							
ES2102692-001	TP01_0.1 TP01_1.2	EP068: gamma-BHC	58-89-9	0.5 mg/kg	102	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	99.6	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	89.0	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	88.8	70.0	130

Page : 27 of 29
 Work Order : ES2102692
 Client : EP Risk Management
 Project : MANDALONG ROAD



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3483699) - continued							
ES2102692-001	TP01_0.1 TP01_1.2	EP068: Endrin	72-20-8	2 mg/kg	106	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	83.6	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3483704)							
ES2102692-033	TP16_0.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	94.6	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	90.3	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	89.6	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	89.1	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	79.8	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	83.7	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3486407)							
ES2102915-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	90.9	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	77.6	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	82.3	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	79.8	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	93.8	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	84.0	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3483699)							
ES2102692-001	TP01_0.1 TP01_1.2	EP068: Diazinon	333-41-5	0.5 mg/kg	107	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	84.1	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	79.4	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	82.2	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	101	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3483704)							
ES2102692-033	TP16_0.1	EP068: Diazinon	333-41-5	0.5 mg/kg	97.5	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	80.1	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	89.7	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	81.3	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	96.8	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3486407)							
ES2102915-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	87.7	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	77.2	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	78.6	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	85.3	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	74.9	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3483698)							
ES2102692-001	TP01_0.1 TP01_1.2	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	100.0	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	109	70.0	130



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3483707)							
ES2102692-033	TP16_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	92.4	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	99.8	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3483697)							
ES2102692-001	TP01_0.1 TP01_1.2	EP071: C10 - C14 Fraction	----	523 mg/kg	98.8	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	102	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	107	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3483706)							
ES2102692-033	TP16_0.1	EP071: C10 - C14 Fraction	----	523 mg/kg	80.2	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	86.1	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	84.0	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3488977)							
ES2102692-001	TP01_0.1 TP01_1.2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	91.6	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3488994)							
ES2102692-049	BH02_0.05	EP080: C6 - C9 Fraction	----	32.5 mg/kg	103	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3483697)							
ES2102692-001	TP01_0.1 TP01_1.2	EP071: >C10 - C16 Fraction	----	860 mg/kg	99.3	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	104	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	107	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3483706)							
ES2102692-033	TP16_0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	92.4	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	81.5	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	85.2	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3488977)							
ES2102692-001	TP01_0.1 TP01_1.2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	90.7	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3488994)							
ES2102692-049	BH02_0.05	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	101	70.0	130
EP080: BTEXN (QCLot: 3488977)							
ES2102692-001	TP01_0.1 TP01_1.2	EP080: Benzene	71-43-2	2.5 mg/kg	86.6	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	89.1	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.7	70.0	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	89.2	70.0	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.5	70.0	130
	EP080: Naphthalene	91-20-3	2.5 mg/kg	85.0	70.0	130	
EP080: BTEXN (QCLot: 3488994)							
ES2102692-049	BH02_0.05	EP080: Benzene	71-43-2	2.5 mg/kg	93.9	70.0	130



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 3488994) - continued							
ES2102692-049	BH02_0.05	EP080: Toluene	108-88-3	2.5 mg/kg	93.5	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	93.9	70.0	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	94.4	70.0	130
		106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	92.1	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	87.9	70.0	130
Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 3488015)							
ES2102692-069	RW102	EG020A-T: Arsenic	7440-38-2	1 mg/L	85.3	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	93.9	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	89.7	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	88.4	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	90.3	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	86.9	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	87.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3490391)							
ES2102769-012	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	89.1	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3489409)							
ES2102692-069	RW102	EP080: C6 - C9 Fraction	----	325 µg/L	101	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3489409)							
ES2102692-069	RW102	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	100	70.0	130
EP080: BTEXN (QCLot: 3489409)							
ES2102692-069	RW102	EP080: Benzene	71-43-2	25 µg/L	86.1	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	89.3	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	92.0	70.0	130
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	91.7	70.0	130
		106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	93.4	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	88.7	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2102692	Page	: 1 of 15
Client	: EP Risk Management	Laboratory	: Environmental Division Sydney
Contact	: MR STUART LORD	Telephone	: +61-2-8784 8555
Project	: MANDALONG ROAD	Date Samples Received	: 28-Jan-2021
Site	: ----	Issue Date	: 05-Feb-2021
Sampler	: ----	No. of samples received	: 72
Order number	: ----	No. of samples analysed	: 52

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** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005(ED093)T: Total Metals by ICP-AES	ES2102692--034	TP18_0.5	Iron	7439-89-6	23.2 %	0% - 20%	RPD exceeds LOR based limits

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	16	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	14	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	16	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	14	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract								
Soil Glass Jar - Unpreserved (EA001) NEPM Screen 01, NEPM Screen 02		27-Jan-2021	01-Feb-2021	03-Feb-2021	✓	01-Feb-2021	02-Feb-2021	✓
EA002: pH 1:5 (Soils)								
Soil Glass Jar - Unpreserved (EA002) NEPM Screen 01, NEPM Screen 02		27-Jan-2021	01-Feb-2021	03-Feb-2021	✓	01-Feb-2021	01-Feb-2021	✓
EA010: Conductivity (1:5)								
Soil Glass Jar - Unpreserved (EA010) NEPM Screen 01, NEPM Screen 02		27-Jan-2021	01-Feb-2021	03-Feb-2021	✓	01-Feb-2021	01-Mar-2021	✓

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) TP01_0.5, TP05_0.5, TP07_0.5, TP11_0.5, TP16_0.5, NEPM Screen 01, TP02_2.2, TP06_0.5, TP09_0.5, TP13_0.5, TP20_0.5, NEPM Screen 02	27-Jan-2021	----	----	----	01-Feb-2021	10-Feb-2021	✓
Soil Glass Jar - Unpreserved (EA055) TP01_0.1 - TP01_1.2, TP04_0.1, TP06_0.1, TP09_0.1, TP11_0.1, TP16_0.1, BH01_0.05, BH03_0.05, BH05_0.05, BH07_0.05, BH09_0.6, QC04, TP02_01.0, TP05_0.1, TP07_0.1, TP10_0.1, TP13_0.1, TP20_0.1, BH02_0.05, BH04_0.05, BH06_0.05, BH08_0.05, QC02,	27-Jan-2021	----	----	----	02-Feb-2021	10-Feb-2021	✓
Sterile Plastic Jar (EA055) Micro_01, Micro_03, Micro_05, Micro_02, Micro_04, Micro_06	27-Jan-2021	----	----	----	03-Feb-2021	10-Feb-2021	✓
EA150: Soil Classification based on Particle Size							
Snap Lock Bag (EA150H) NEPM Screen 01, NEPM Screen 02	27-Jan-2021	----	----	----	03-Feb-2021	26-Jul-2021	✓
EA152: Soil Particle Density							
Snap Lock Bag (EA152) NEPM Screen 01, NEPM Screen 02	27-Jan-2021	----	----	----	03-Feb-2021	26-Jul-2021	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) ACM_001, ACM_003, ACM_005, ACM_002, ACM_004,	28-Jan-2021	----	----	----	29-Jan-2021	27-Jul-2021	✓
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N) ACM_001, ACM_003, ACM_005, ACM_002, ACM_004,	28-Jan-2021	----	----	----	29-Jan-2021	27-Jul-2021	✓

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED006: Exchangeable Cations on Alkaline Soils								
Soil Glass Jar - Unpreserved (ED006) NEPM Screen 01		27-Jan-2021	04-Feb-2021	24-Feb-2021	✓	04-Feb-2021	24-Feb-2021	✓
ED007: Exchangeable Cations								
Soil Glass Jar - Unpreserved (ED007) NEPM Screen 02		27-Jan-2021	04-Feb-2021	24-Feb-2021	✓	04-Feb-2021	24-Feb-2021	✓
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) TP01_0.5, TP02_2.2, TP05_0.5, TP06_0.5, TP07_0.5, TP09_0.5, TP11_0.5, TP13_0.5, TP16_0.5, TP20_0.5, NEPM Screen 01, NEPM Screen 02		27-Jan-2021	01-Feb-2021	26-Jul-2021	✓	02-Feb-2021	26-Jul-2021	✓
Soil Glass Jar - Unpreserved (EG005T) TP01_0.1 - TP01_1.2, TP04_0.1, TP05_0.1, TP06_0.1, TP07_0.1, TP09_0.1, TP10_0.1, TP11_0.1, TP13_0.1, TP16_0.1, TP20_0.1, BH01_0.05, BH02_0.05, BH03_0.05, BH04_0.05, BH05_0.05, BH06_0.05, BH07_0.05, BH08_0.05, BH09_0.6, QC02, QC04		27-Jan-2021	02-Feb-2021	26-Jul-2021	✓	04-Feb-2021	26-Jul-2021	✓

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
TP01_0.5, TP05_0.5, TP07_0.5, TP11_0.5, TP16_0.5, TP02_2.2, TP06_0.5, TP09_0.5, TP13_0.5, TP20_0.5	27-Jan-2021	01-Feb-2021	24-Feb-2021	✓	03-Feb-2021	24-Feb-2021	✓
Soil Glass Jar - Unpreserved (EG035T)							
TP01_0.1 - TP01_1.2, TP04_0.1, TP06_0.1, TP09_0.1, TP11_0.1, TP16_0.1, BH01_0.05, BH03_0.05, BH05_0.05, BH07_0.05, BH09_0.6, QC04, TP02_01.0, TP05_0.1, TP07_0.1, TP10_0.1, TP13_0.1, TP20_0.1, BH02_0.05, BH04_0.05, BH06_0.05, BH08_0.05, QC02,	27-Jan-2021	02-Feb-2021	24-Feb-2021	✓	05-Feb-2021	24-Feb-2021	✓
EP004: Organic Matter							
Soil Glass Jar - Unpreserved (EP004)							
NEPM Screen 01, NEPM Screen 02	27-Jan-2021	01-Feb-2021	24-Feb-2021	✓	01-Feb-2021	24-Feb-2021	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
TP01_0.1 - TP01_1.2, TP04_0.1, TP06_0.1, TP09_0.1, TP11_0.1, TP16_0.1, BH01_0.05, BH03_0.05, BH05_0.05, BH07_0.05, BH09_0.6, QC04, TP02_01.0, TP05_0.1, TP07_0.1, TP10_0.1, TP13_0.1, TP20_0.1, BH02_0.05, BH04_0.05, BH06_0.05, BH08_0.05, QC02,	27-Jan-2021	02-Feb-2021	10-Feb-2021	✓	03-Feb-2021	14-Mar-2021	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
TP02_2.2, TP16_0.5	TP06_0.5,	27-Jan-2021	01-Feb-2021	10-Feb-2021	✔	02-Feb-2021	13-Mar-2021	✔
Soil Glass Jar - Unpreserved (EP068)								
TP01_0.1 - TP01_1.2, TP02_01.0, TP05_0.1, TP06_0.1, TP07_0.5, TP09_0.5, TP11_0.1, TP13_0.1, TP16_0.1, TP20_0.1, BH02_0.05, BH04_0.05, BH06_0.05, BH08_0.05, QC04	TP01_0.5, TP04_0.1, TP05_0.5, TP07_0.1, TP09_0.1, TP10_0.1, TP11_0.5, TP13_0.5, TP20_0.5, BH01_0.05, BH03_0.05, QC02, BH05_0.05, BH07_0.05, BH09_0.6,	27-Jan-2021	02-Feb-2021	10-Feb-2021	✔	03-Feb-2021	14-Mar-2021	✔
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068)								
TP02_2.2, TP16_0.5	TP06_0.5,	27-Jan-2021	01-Feb-2021	10-Feb-2021	✔	02-Feb-2021	13-Mar-2021	✔
Soil Glass Jar - Unpreserved (EP068)								
TP01_0.1 - TP01_1.2, TP02_01.0, TP05_0.1, TP06_0.1, TP07_0.5, TP09_0.5, TP11_0.1, TP13_0.1, TP16_0.1, TP20_0.1, BH02_0.05, BH04_0.05, BH06_0.05, BH08_0.05, QC04	TP01_0.5, TP04_0.1, TP05_0.5, TP07_0.1, TP09_0.1, TP10_0.1, TP11_0.5, TP13_0.5, TP20_0.5, BH01_0.05, BH03_0.05, QC02, BH05_0.05, BH07_0.05, BH09_0.6,	27-Jan-2021	02-Feb-2021	10-Feb-2021	✔	03-Feb-2021	14-Mar-2021	✔



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))	27-Jan-2021	02-Feb-2021	10-Feb-2021	✔	03-Feb-2021	14-Mar-2021	✔	
TP01_0.1 - TP01_1.2,								TP02_01.0,
TP04_0.1,								TP05_0.1,
TP06_0.1,								TP07_0.1,
TP09_0.1,								TP10_0.1,
TP11_0.1,								TP13_0.1,
TP16_0.1,								TP20_0.1,
BH01_0.05,								BH02_0.05,
BH03_0.05,								BH04_0.05,
BH05_0.05,								BH06_0.05,
BH07_0.05,								BH08_0.05,
BH09_0.6,								QC02,
QC04								
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080)	19-Jan-2021	01-Feb-2021	02-Feb-2021	✔	02-Feb-2021	02-Feb-2021	✔	
TS,								TSC
Soil Glass Jar - Unpreserved (EP080)	22-Jan-2021	02-Feb-2021	05-Feb-2021	✔	03-Feb-2021	05-Feb-2021	✔	
TB								
Soil Glass Jar - Unpreserved (EP080)	27-Jan-2021	02-Feb-2021	10-Feb-2021	✔	03-Feb-2021	10-Feb-2021	✔	
TP01_0.1 - TP01_1.2,								TP02_01.0,
TP04_0.1,								TP05_0.1,
TP06_0.1,								TP07_0.1,
TP09_0.1,								TP10_0.1,
TP11_0.1,								TP13_0.1,
TP16_0.1,								TP20_0.1,
BH01_0.05,								BH02_0.05,
BH03_0.05,								BH04_0.05,
BH05_0.05,								BH06_0.05,
BH07_0.05,								BH08_0.05,
BH09_0.6,								QC02,
QC04								



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis									
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions															
Soil Glass Jar - Unpreserved (EP080)															
TS,	TSC	19-Jan-2021	01-Feb-2021	02-Feb-2021	✓	02-Feb-2021	02-Feb-2021	✓							
Soil Glass Jar - Unpreserved (EP080)															
TB		22-Jan-2021	02-Feb-2021	05-Feb-2021	✓	03-Feb-2021	05-Feb-2021	✓							
Soil Glass Jar - Unpreserved (EP080)															
TP01_0.1 - TP01_1.2,	TP02_01.0,	27-Jan-2021	02-Feb-2021	10-Feb-2021	✓	03-Feb-2021	10-Feb-2021	✓							
TP04_0.1,	TP05_0.1,														
TP06_0.1,	TP07_0.1,														
TP09_0.1,	TP10_0.1,														
TP11_0.1,	TP13_0.1,														
TP16_0.1,	TP20_0.1,														
BH01_0.05,	BH02_0.05,														
BH03_0.05,	BH04_0.05,														
BH05_0.05,	BH06_0.05,														
BH07_0.05,	BH08_0.05,														
BH09_0.6,	QC02,														
QC04															
EP080: BTEXN															
Soil Glass Jar - Unpreserved (EP080)															
TS,	TSC	19-Jan-2021	01-Feb-2021	02-Feb-2021	✓	02-Feb-2021	02-Feb-2021	✓							
Soil Glass Jar - Unpreserved (EP080)															
TB		22-Jan-2021	02-Feb-2021	05-Feb-2021	✓	03-Feb-2021	05-Feb-2021	✓							
Soil Glass Jar - Unpreserved (EP080)															
TP01_0.1 - TP01_1.2,	TP02_01.0,	27-Jan-2021	02-Feb-2021	10-Feb-2021	✓	03-Feb-2021	10-Feb-2021	✓							
TP04_0.1,	TP05_0.1,														
TP06_0.1,	TP07_0.1,														
TP09_0.1,	TP10_0.1,														
TP11_0.1,	TP13_0.1,														
TP16_0.1,	TP20_0.1,														
BH01_0.05,	BH02_0.05,														
BH03_0.05,	BH04_0.05,														
BH05_0.05,	BH06_0.05,														
BH07_0.05,	BH08_0.05,														
BH09_0.6,	QC02,														
QC04															
MM804: Faecal Coliforms & E.coli by MPN															
Sterile Plastic Jar (MM804)															
Micro_01,	Micro_02,	27-Jan-2021	----	----	----	29-Jan-2021	----	----							
Micro_03,	Micro_04,														
Micro_05,	Micro_06														

Matrix: **SOLID**

Evaluation: * = Holding time breach ; ✓ = Within holding time.



Matrix: **SOLID**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
ACM_ID_01, ACM_ID_02	28-Jan-2021	----	----	----	29-Jan-2021	27-Jul-2021	✔

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) RW102	28-Jan-2021	01-Feb-2021	27-Jul-2021	✓	01-Feb-2021	27-Jul-2021	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) RW102	28-Jan-2021	----	----	----	03-Feb-2021	25-Feb-2021	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) RW102	28-Jan-2021	03-Feb-2021	04-Feb-2021	✓	04-Feb-2021	15-Mar-2021	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) RW102	28-Jan-2021	03-Feb-2021	04-Feb-2021	✓	04-Feb-2021	15-Mar-2021	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) RW102	28-Jan-2021	03-Feb-2021	04-Feb-2021	✓	04-Feb-2021	15-Mar-2021	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) RW102	28-Jan-2021	03-Feb-2021	04-Feb-2021	✓	04-Feb-2021	15-Mar-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) RW102	28-Jan-2021	03-Feb-2021	04-Feb-2021	✓	04-Feb-2021	15-Mar-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) RW102	28-Jan-2021	03-Feb-2021	11-Feb-2021	✓	03-Feb-2021	11-Feb-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) RW102	28-Jan-2021	03-Feb-2021	04-Feb-2021	✓	04-Feb-2021	15-Mar-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) RW102	28-Jan-2021	03-Feb-2021	11-Feb-2021	✓	03-Feb-2021	11-Feb-2021	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) RW102	28-Jan-2021	03-Feb-2021	11-Feb-2021	✓	03-Feb-2021	11-Feb-2021	✓



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)							
Electrical Conductivity (1:5)	EA010	1	2	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	2	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	1	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	7	59	11.86	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	4	23	17.39	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	6	41	14.63	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	1	2	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	1	2	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	4	23	17.39	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	5	40	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	5	40	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	23	17.39	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	38	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Electrical Conductivity (1:5)	EA010	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	40	7.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	40	7.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	38	7.89	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Electrical Conductivity (1:5)	EA010	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	40	7.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	40	7.50	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	
Method Blanks (MB) - Continued							
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	38	7.89	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Organic Matter	EP004	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	23	8.70	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	41	7.32	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	23	8.70	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	40	7.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	40	7.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	38	5.26	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)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	16	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	1	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	1	0.00	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-MS - Suite A	EG020A-T	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	14	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	16	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	1	100.00	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-MS - Suite A	EG020A-T	1	20	5.00	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	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	16	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	1	100.00	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-MS - Suite A	EG020A-T	1	20	5.00	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	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard

Matrix Spikes (MS)



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							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	16	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	1	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	1	0.00	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-MS - Suite A	EG020A-T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	14	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001	SOIL	In house: Referenced to Rayment and Lyons 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
pH (1:5)	EA002	SOIL	In house: Referenced to Rayment and Lyons 4A1 and APHA 4500H+. pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
Electrical Conductivity (1:5)	EA010	SOIL	In house: Referenced to Rayment and Lyons 3A1 and APHA 2510. Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
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).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Soil Particle Density	EA152	SOIL	Soil Particle Density by AS 1289.3.5.1: Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
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).
Exchangeable Cations on Alkaline Soils	ED006	SOIL	In house: Referenced to Soil Survey Test Method C5. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with alcoholic ammonium chloride at pH 8.5. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil.
Exchangeable Cations	ED007	SOIL	In house: Referenced to Rayment & Lyons Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM Schedule B(3).
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 AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (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 SnCl ₂ 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)
Organic Matter	EP004	SOIL	In house: Referenced to AS1289.4.1.1. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM Schedule B(3)



Analytical Methods	Method	Matrix	Method Descriptions
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.
Thermotolerant Coliforms & E.coli by MPN	MM804	SOIL	In house: Referenced to AS 4276.6 & AS 4276.23
Asbestos Identification in Bulk Solids	EA200	SOLID	In house: Referenced to AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. 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.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ 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)



Analytical Methods	Method	Matrix	Method Descriptions
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)
Preparation Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001-PR	SOIL	In house: Referenced to Rayment and Lyons 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Exchangeable Cations Preparation Method (Alkaline Soils)	ED006PR	SOIL	In house: Referenced to Rayment and Lyons method 15C1.
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Lyons method 15A1. A 1M NH ₄ Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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).
Organic Matter	EP004-PR	SOIL	In house: Referenced to AS1289.4.1.1. Dichromate oxidation method after Walkley and Black. 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, Na ₂ SO ₄ 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.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
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.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : ES2102692

Client : EP Risk Management Contact : MR STUART LORD Address : 109/283 Alfred St NORTH SYDNEY NSW 2060 E-mail : stuart.lord@eprisk.com.au Telephone : ---- Facsimile : ---- Project : MANDALONG ROAD Order number : ---- C-O-C number : ---- Site : ---- Sampler :	Laboratory : Environmental Division Sydney Contact : Hannah White Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Hannah.White@alsglobal.com Telephone : +61-2-8784 8555 Facsimile : +61-2-8784 8500 Page : 1 of 4 Quote number : ES2020EPRISK0006 (SY/497/20 Primary analysis only) QC Level : NEPM 2013 B3 & ALS QC Standard
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Dates

Date Samples Received : 28-Jan-2021 10:56	Issue Date : 29-Jan-2021
Client Requested Due Date : 08-Feb-2021	Scheduled Reporting Date : 08-Feb-2021

Delivery Details

Mode of Delivery : Undefined	Security Seal : Not Available
No. of coolers/boxes : ----	Temperature : 7.4°C - Ice present
Receipt Detail :	No. of samples received / analysed : 69 / 52
	No. of samples NOT collected : 3

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Sample QC01 and QC03 forwarded to EUROFINs.**
- **Sample 1 ID on the COC is TP01_0.1, but received labelled on the jar as TP01_1.2, please confirm which is the correct ID.**
- **Trip Blank and Trip spike received extra and conducted TPH C6-C9/BTEX analysis, Please confirm.**
- **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 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).**
- Sample TP03_0.1 was not received due to the following reason: Sample was not received
- Sample TP03_0.5 was not received due to the following reason: Sample was not received
- Sample TP15_0.1 was not received due to the following reason: Same ID as sample 29 (TP15_0.1)
- **Asbestos and PSD analysis will be conducted by ALS Newcastle.**
- Sample 3 ID on the COC is TP02_0.1, but received labelled on the jar as TP02_1.0, please confirm which is the correct ID.
- Sample 4 ID on the COC is TP02_0.5, but received labelled on the jar as TP02_2.2, please confirm which is the correct ID.
- 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 57 ID on the COC is BH09_1.0, but received labelled on the jar as BH09_0.2 please confirm which is the correct ID.
- 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.

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Soil Particle Density : EA152		
NEPM Screen 01	- Snap Lock Bag	- Dried soil
NEPM Screen 02	- Snap Lock Bag	- Dried soil
Thermotolerant Coliforms & E.coli by MPN : MM804		
Micro_01	- Sterile Plastic Jar	-
Micro_02	- Sterile Plastic Jar	-
Micro_03	- Sterile Plastic Jar	-
Micro_04	- Sterile Plastic Jar	-
Micro_05	- Sterile Plastic Jar	-
Micro_06	- Sterile Plastic Jar	-

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 - EA055-103 Moisture Content	SOIL - MM804 Thermotolerant Coliforms & E.coli by MPN	SOIL - P-22 (WA/SYD) NEPM Screen for Soil Classification WA	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides	SOIL - S-16 TRH/BTEX/PAH/OC/OP/PCB/8Metals
ES2102692-001	27-Jan-2021 00:00	TP01_0.1 TP01_1.2		✓					✓
ES2102692-002	27-Jan-2021 00:00	TP01_0.5		✓			✓	✓	
ES2102692-003	27-Jan-2021 00:00	TP02_0.1 TP02_1.0		✓					✓
ES2102692-004	27-Jan-2021 00:00	TP02_0.5 TP02_2.2		✓			✓	✓	
ES2102692-007	27-Jan-2021 00:00	TP04_0.1		✓					✓
ES2102692-008	27-Jan-2021 00:00	TP04_0.5	✓						
ES2102692-009	27-Jan-2021 00:00	TP05_0.1		✓					✓
ES2102692-010	27-Jan-2021 00:00	TP05_0.5		✓			✓	✓	
ES2102692-011	27-Jan-2021 00:00	TP06_0.1		✓					✓
ES2102692-012	27-Jan-2021 00:00	TP06_0.5		✓			✓	✓	
ES2102692-013	27-Jan-2021 00:00	TP07_0.1		✓					✓
ES2102692-014	27-Jan-2021 00:00	TP07_0.5		✓			✓	✓	
ES2102692-016	27-Jan-2021 00:00	TP08_0.5	✓						
ES2102692-017	27-Jan-2021 00:00	TP09_0.1		✓					✓
ES2102692-018	27-Jan-2021 00:00	TP09_0.5		✓			✓	✓	
ES2102692-019	27-Jan-2021 00:00	TP10_0.1		✓					✓
ES2102692-020	27-Jan-2021 00:00	TP10_0.5	✓						
ES2102692-021	27-Jan-2021 00:00	TP11_0.1		✓					✓
ES2102692-022	27-Jan-2021 00:00	TP11_0.5		✓			✓	✓	
ES2102692-024	27-Jan-2021 00:00	TP12_0.5	✓						
ES2102692-025	27-Jan-2021 00:00	TP13_0.1		✓					✓
ES2102692-026	27-Jan-2021 00:00	TP13_0.5		✓			✓	✓	
ES2102692-028	27-Jan-2021 00:00	TP14_0.5	✓						
ES2102692-032	27-Jan-2021 00:00	TP16_0.5		✓			✓	✓	
ES2102692-033	27-Jan-2021 00:00	TP16_0.1		✓					✓
ES2102692-036	27-Jan-2021 00:00	TP19_0.5	✓						
ES2102692-038	27-Jan-2021 00:00	TP20_0.5		✓			✓	✓	



			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - MM804 Thermotolerant Coliforms & E.coli by MPN	SOIL - P-22 (WA/SYD) NEPM Screen for Soil Classification WA	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides	SOIL - S-16 TRH/BTEXN/PAH/OC/OP/PCB/8Metals
ES2102692-039	27-Jan-2021 00:00	TP20_0.1		✓					✓
ES2102692-040	27-Jan-2021 00:00	TP21_0.5	✓						
ES2102692-042	27-Jan-2021 00:00	Micro_01		✓	✓				
ES2102692-043	27-Jan-2021 00:00	Micro_02		✓	✓				
ES2102692-044	27-Jan-2021 00:00	Micro_03		✓	✓				
ES2102692-045	27-Jan-2021 00:00	Micro_04		✓	✓				
ES2102692-046	27-Jan-2021 00:00	Micro_05		✓	✓				
ES2102692-047	27-Jan-2021 00:00	Micro_06		✓	✓				
ES2102692-048	27-Jan-2021 00:00	BH01_0.05		✓					✓
ES2102692-049	27-Jan-2021 00:00	BH02_0.05		✓					✓
ES2102692-050	27-Jan-2021 00:00	BH03_0.05		✓					✓
ES2102692-051	27-Jan-2021 00:00	BH04_0.05		✓					✓
ES2102692-052	27-Jan-2021 00:00	BH05_0.05		✓					✓
ES2102692-053	27-Jan-2021 00:00	BH06_0.05		✓					✓
ES2102692-054	27-Jan-2021 00:00	BH07_0.05		✓					✓
ES2102692-055	27-Jan-2021 00:00	BH08_0.05		✓					✓
ES2102692-056	27-Jan-2021 00:00	BH09_0.6		✓					✓
ES2102692-057	27-Jan-2021 00:00	BH09_1.0 BH09_0.2	✓						
ES2102692-058	27-Jan-2021 00:00	NEPM Screen 01		✓		✓			
ES2102692-059	27-Jan-2021 00:00	NEPM Screen 02		✓		✓			
ES2102692-067	27-Jan-2021 00:00	QC02		✓					✓
ES2102692-068	27-Jan-2021 00:00	QC04		✓					✓

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs
ES2102692-060	28-Jan-2021 00:00	ACM_001	✓	
ES2102692-061	28-Jan-2021 00:00	ACM_002	✓	
ES2102692-062	28-Jan-2021 00:00	ACM_003	✓	
ES2102692-063	28-Jan-2021 00:00	ACM_004	✓	
ES2102692-064	28-Jan-2021 00:00	ACM_005	✓	
ES2102692-070	22-Jan-2021 00:00	TB		✓
ES2102692-071	19-Jan-2021 00:00	TS		✓
ES2102692-072	19-Jan-2021 00:00	TSC		✓



CHAIN OF CUSTODY

ALS Laboratory, please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2164
Ph: 02 8784 8555 E: samples.syd@alsenviro.com
☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304
Ph: 02 4906 9433 E: samples.newcastle@alsenviro.com

☐ Brisbane: 32 Shand St, Stafford QLD 4053
Ph: 07 3245 7222 E: samples.brisbane@alsenviro.com
☐ Townsville: 14-15 Dasmu Ct, Bonhe QLD 4818
Ph: 07 4796 0600 E: townsville.environmental@alsenviro.com

☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171
Ph: 03 8649 5000 E: samples.melbourne@alsenviro.com
☐ Adelaide: 2-1 Burma Rd, Poonindie SA 5095
Ph: 08 8339 0890 E: adelaide@alsenviro.com

CLIENT:

EP1934

TURNAROUND REQUIREMENTS:

☐ Standard TAT (list due date):

OFFICE:

3/19 Bolton St Newcastle

(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

☐ Non Standard or urgent TAT (list due date):

PROJECT:

Mandalong Road

ALS QUOTE NO.:

SY-497-20 V2

ORDER NUMBER:

CONTACT PH: 0403768722

PROJECT MANAGER:

SL

SAMPLER:

SAMPLER MOBILE:

COC emailed to ALS? (YES / NO)

EDD FORMAT (or default):

Email Reports to (will default to PM if no other addresses are listed):

Email Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

RECEIVED BY:
DATE/TIME: 28/11/21 10:54

RECEIVED BY:
DATE/TIME: 28/11/21 17:00

RECEIVED BY:
DATE/TIME: 28/11/21 17:00

RECEIVED BY:
DATE/TIME: 28/11/21 17:00

RECEIVED BY:
DATE/TIME: 28/11/21 17:00

RECEIVED BY:
DATE/TIME: 28/11/21 17:00

RECEIVED BY:
DATE/TIME: 28/11/21 17:00

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)	CONTAINER INFORMATION	ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (acid filtered bottle required).	Additional Information Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
--------------	---	-----------------------	--	---

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	Hold	S-12	S-2										
15	TP08_0.1	27/01/2021	S		1	X													
16	TP08_0.5	27/01/2021	S		1		X												
17	TP09_0.1	27/01/2021	S		1	X													
18	TP09_0.5	27/01/2021	S		1			X	X										
19	TP10_0.1	27/01/2021	S		1	X													
20	TP10_0.5	27/01/2021	S		1		X												
21	TP11_0.1	27/01/2021	S		1	X													
22	TP11_0.5	27/01/2021	S		1			X	X										
23	TP12_0.1	27/01/2021	S		1	X													
24	TP12_0.5	27/01/2021	S		1		X												
25	TP13_0.1	27/01/2021	S		1		X												
26	TP013_0.5	27/01/2021	S		1			X	X										
27	TP14_0.1	27/01/2021	S		1	X													
28	TP14_0.5	27/01/2021	S		1		X												
TOTAL																			

Water Container Codes: P = Unpreserved Plastic, N = Nitric Preserved Plastic, ORC = Nitric Preserved ORC, SH = Sodium Hydroxide/Cl Preserved, S = Sodium Hydroxide Preserved Plastic, AG = Amber Glass Unpreserved, AP = Airtight Unpreserved Plastic, V = VOA Vial HCl Preserved, VB = VOA Vial Sodium Bisphosphate Preserved, VS = VOA Vial Sulfuric Preserved, AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass, H = HCl Preserved Plastic, HS = HCl Preserved Speciation bottle, SP = Sulfuric Preserved Plastic, F = Formaldehyde Preserved Glass, Z = Zinc Acetate Preserved Bottle, E = EDTA Preserved Bottles, ST = Sterile Bottle, ASS = Plastic Bag for Acid Sulfate Soils, B = Unpreserved Bag



CHAIN OF CUSTODY

ALS Laboratory, please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2164
Ph: 02 8784 8555 E: samples.syd@alsenviro.com
☐ Newcastle: 5 Rossmore Rd, Wyarralook NSW 2304
Ph: 02 4988 9433 E: samples.newcastle@alsenviro.com

☐ Brisbane: 32 Shand St, Stafford QLD 4053
Ph: 07 3243 7232 E: samples.brisbane@alsenviro.com
☐ Townsville: 14-15 Deanna Ct, Baulme QLD 4818
Ph: 07 4799 0500 E: townsville.environmental@alsenviro.com

☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171
Ph: 03 8549 8000 E: samples.melbourne@alsenviro.com
☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5095
Ph: 08 8369 0590 E: adelaide@alsenviro.com

CUSTOMER:

EP1934

OFFICE:

3/19 Bolton St Newcastle

PROJECT:

Mandabong Road

ORDER NUMBER:

PROJECT MANAGER: SL

CONTACT PH: 0403768722

SAMPLER:

SAMPLER MOBILE:

COC emailed to ALS? (YES / NO)

EDD FORMAT (or default):

Email Reports to (will default to PM if no other addresses are listed):

Email Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:

(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

☐ Standard TAT (List due date):

☐ Non Standard or Urgent TAT (List due date):

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7
OF: 1 2 3 4 5 6 7

RECEIVED BY:

DATE/TIME:

28/1/21 10:54

RELINQUISHED BY:

DATE/TIME:

28/1/21 17:20

FOR LABORATORY USE ONLY (Circle)

Client Seal intact?

For 100% frozen for 100% present upon

Returned Sample Temperature on Receipt

Other comment:

Yes

No

Yes

No

Yes

No

Yes

No

AGE/USE ONLY

SAMPLE DETAILS
MATRIX: Solid(S) Water(W)

CONTAINER INFORMATION

ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attract suite price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).

Additional Information

Comments on likely contaminant levels, dilutions, or samples requiring specific GC analysis etc.

LAB ID

SAMPLE ID

DATE / TIME

MATRIX

TYPE & PRESERVATIVE
(refer to codes below)

TOTAL BOTTLES

S-16

Hold

Faecal Coliform and E. Coli

S-12

S-2

29

TP15_0.1

27/01/2021

S

S

S

S

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30

TP15_0.5

27/01/2021

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31

TP15_0.1

27/01/2021

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TP16_0.5

27/01/2021

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TP18_0.5

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TP18_0.1

27/01/2021

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TP19_0.5

27/01/2021

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37

TP19_0.1

27/01/2021

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CHAIN OF CUSTODY

ALS Laboratory, please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2164
Ph: 02 8784 8565 E: samples.syd@alsenviro.com
☐ Newcastle: 5 Roseglen Rd, Warabrook NSW 2304
Ph: 02 4988 9433 E: samples.newcastle@alsenviro.com

☐ Brisbane: 32 Strand St, Sturtford QLD 4053
Ph: 07 3243 7222 E: samples.brisbane@alsenviro.com
☐ Townsville: 14-16 Dwyer Ct, Bohle QLD 4816
Ph: 07 4796 0800 E: townsville.environmental@alsenviro.com

☐ Melbourne: 24 Westall Rd, Springvale VIC 3171
Ph: 03 8549 9000 E: samples.melbourne@alsenviro.com
☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5095
Ph: 08 8339 0890 E: adelaide@alsenviro.com

FOR LABORATORY USE ONLY (circle)

Correctly sealed in box? ☒ Yes ☐ No

Correctly labelled in box? ☒ Yes ☐ No

Refrigerated Sample Temperature on Receipt? ☒ Yes ☐ No

Other comment:

RECEIVED BY: ☒ Yes ☐ No

DATE/TIME: 28/11/21 17:00

RECEIVED BY: ☒ Yes ☐ No

DATE/TIME: 28/11/21 10:54

CLIENT:	EP1934	TURNAROUND REQUIREMENTS:	☐ Standard TAT (list due date): ☐ Non Standard or urgent TAT (list due date):
OFFICE:	3/19 Bolton St Newcastle	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	
PROJECT:	Mandelong Road	ALS QUOTE NO.:	SY-497-20 V2
ORDER NUMBER:		CONTACT PH: 0403768722	
PROJECT MANAGER:	SL	SAMPLER MOBILE:	
SAMPLER:		EDD FORMAT (or default):	
COC emailed to ALS? (YES / NO)		REINQUISHED BY:	RECEIVED BY:
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME: 28/11/21 10:54	DATE/TIME: 28/11/21 17:00
Email Invoice to (will default to PM if no other addresses are listed):			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)	CONTAINER INFORMATION	ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price) (Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required))	Additional Information
--------------	---	-----------------------	--	------------------------

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	Faecal Coliform and E. Coli	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
43	Micro_02	27/01/2021	S		1		X	
44	Micro_03	27/01/2021	S		1		X	
45	Micro_04	27/01/2021	S		1		X	
46	Micro_05	27/01/2021	S		1		X	
47	Micro_06	27/01/2021	S		1		X	
48	BH01_0.05	27/01/2021	S		1		X	
49	BH02_0.05	27/01/2021	S		1		X	
50	BH03_0.05	27/01/2021	S		1		X	
51	BH04_0.05	27/01/2021	S		1		X	
52	BH05_0.05	27/01/2021	S		1		X	
53	BH06_0.05	27/01/2021	S		1		X	
54	BH07_0.05	27/01/2021	S		1		X	
55	BH08_0.05	27/01/2021	S		1		X	
56	BH09_0.6	27/01/2021	S		1		X	
TOTAL								

Water Container Codes: F = Unpreserved Plastic; N = Nitric Preserved Plastic; ORG = Nitric Preserved ORG; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial (HCl Preserved); VB = VOA Vial (Sodium Bisulfate Preserved); VS = VOA Vial (Sulfuric Preserved); AV = Airfreight Unpreserved Vial (S = Sulfuric Preserved Amber Glass); H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulfate Solids; B = Unpreserved Bag



CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2154
Ph: 02 8784 8555 E: samples.syd@alsenviro.com
☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304
Ph: 02 4969 9433 E: samples.newcastle@alsenviro.com

☐ Brisbane: 32 Strand St, Sturford QLD 4003
Ph: 07 3243 7222 E: samples.brisbane@alsenviro.com
☐ Townsville: 14-15 Deering Ct, Boite QLD 4816
Ph: 07 4796 0600 E: townsville.environmental@alsenviro.com

☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171
Ph: 03 8549 9600 E: samples.melbourne@alsenviro.com
☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5095
Ph: 08 8359 0890 E: adelaide@alsenviro.com

FOR LABORATORY USE ONLY (Circle)

Energy Seal Intact

Freezer Seal Intact (for liquids preserved upon)

Refrigerator Temperature (for liquids preserved upon)

Container Sealed (for liquids preserved upon)

Container Sealed (for solids preserved upon)

Container Sealed (for gases preserved upon)

Container Sealed (for other preserved upon)

Container Sealed (for other preserved upon)

Container Sealed (for other preserved upon)

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CLIENT:	EP1934	TURNAROUND REQUIREMENTS:	☐ Standard TAT (List due date): ☐ Non Standard or Urgent TAT (List due date):	FOR LABORATORY USE ONLY (Circle)	
OFFICE:	3119 Bolton St Newcastle	ALIS QUOTE NO.:	SY-497-20 V2		
PROJECT:	Mandalong Road	CONTACT PH:	0403768722		
ORDER NUMBER:		SAMPLER MOBILE:			
PROJECT MANAGER:	SL	EDD FORMAT (or default):			
SAMPLER:		RELINQUISHED BY:			
COC emailed to ALS? (YES / NO)		DATE/TIME:			
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:			
Email Invoice to (will default to PM if no other addresses are listed):		DATE/TIME:			
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:					

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)						Additional Information
						Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)	Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)	Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)	Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)	Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)	Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)	
57	BH09_1.0	27/01/2021	S		1							
58	NEPM Screen 01	27/01/2021	S		1							
59	NEPM Screen 02	27/01/2021	S		1							
60	ACM_001	27/01/2021	S		1							
61	ACM_002	27/01/2021	S		1							
62	ACM_003	27/01/2021	S		1							
63	ACM_004	27/01/2021	S		1							
64	ACM_005	27/01/2021	S		1							
65	ACM_ID_01	27/01/2021	S		1							
66	ACM_ID_02	27/01/2021	S		1							
67	QC01	27/01/2021	S		1							please send to Eurofins for analysis
67	QC02	27/01/2021	S		1							please send to Eurofins for analysis
67	QC03	27/01/2021	S		1							please send to Eurofins for analysis
68	QC04	27/01/2021	S		1							
TOTAL												

Write Contain Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORG = Nitric Preserved Plastic; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Air-tight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Air-tight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.



CHAIN OF CUSTODY

ALS Laboratory, please refer to

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2164
Ph: 02 8764 8555 E: samples.syd@alsenviro.com
☐ Newcastle: 5 Rosegum Rd, Warminster NSW 2304
Ph: 02 4968 9433 E: samples.newcastle@alsenviro.com

☐ Brisbane: 32 Shand St, Stafford QLD 4053
Ph: 07 3243 7222 E: samples.brisbane@alsenviro.com
☐ Townsville: 14-16 Deema Ct, Bohle QLD 4818
Ph: 07 4786 0600 E: townsville.environmental@alsenviro.com

☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171
Ph: 03 8548 9600 E: samples.melbourne@alsenviro.com
☐ Adelaide: 2-1 Burns Rd, Pooraka SA 5095
Ph: 08 8359 0890 E: adelaide@alsenviro.com

FOR LABORATORY USE ONLY (Circle)

Client: EP1934

Office: 3/19 Bolton St Newcastle

Project: Mandalong Road

Order Number:

Project Manager: SL

Sampler:

COC emailed to ALS? (YES / NO)

Email Reports to (will default to PM if no other addresses are listed):

Email Invoice to (will default to PM if no other addresses are listed):

TURNAROUND REQUIREMENTS: ☐ Standard TAT (list due date):
☐ Non Standard or urgent TAT (list due date):

Standard TAT may be longer for some tests e.g. Ultra Trace Organics

ALS QUOTE NO.:

CONTACT PH: 0403768722

SAMPLER MOBILE:

EDD FORMAT (or default):

RELINQUISHED BY:

DATE/TIME:

RECEIVED BY:

DATE/TIME:

RECEIVED BY:

DATE/TIME:

RECEIVED BY:

DATE/TIME:

RECEIVED BY:

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COC SEQUENCE NUMBER (Circle)
COC: 1 2 3 4 5 6 7
OF: 1 2 3 4 5 6 7

ANALYSIS REQUIRED including SITES (NB: Site Codes must be listed to attract suite price)
When Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).

LAB ID: 69

SAMPLE ID: RW102

DATE / TIME: 27/01/2021

MATRIX: w

TYPE & PRESERVATIVE (refer to codes below)

TOTAL BOTTLES: 1

W-16

X

Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.

Additional Information

Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.

Additional Information

Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.

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Water Container Codes: P = Unpreserved Plastic, N = Nitro Preserved Plastic, ORC = Nitro Preserved ORC, SH = Sodium Hydroxide/Cd Preserved, S = Sodium Hydroxide Preserved Plastic, AG = Amber Glass Unpreserved, AP = Airtight Unpreserved Plastic, V = VOA Vial HCl Preserved, VA = VOA Vial Sodium Bisphosphate Preserved, VS = VOA Vial Sulfuric Preserved, AV = Airtight Unpreserved Vial SG = Sulfuric Preserved, Amber Glass, H = HCl Preserved Plastic, HS = HCl Preserved Speciation bottle, SP = Sulfuric Preserved Plastic, F = Fomaldelyde Preserved Glass, Z = Zinc Acetate Preserved Bottle, E = EDTA Preserved Bottles, ST = Sterile Bottle, ASS = Plastic Bag for Acid Sulphate Solids, B = Unpreserved Bag.



☐ **Melbourne:** 2-4 Westall Rd. Springvale VIC 3171
Ph:03 8549 9600 E: samples.melbourne@alsenviro.com

☐ **Adelaide:** 2-1 Burma Rd. Pooraka SA 5095

CHAIN OF CUSTODY

☐ **Melbourne:** 2-4 Westall Rd. Springvale VIC 3171
Ph:03 8549 9600 E: samples.melbourne@alsenviro.com

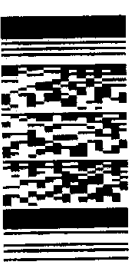
☐ **Adelaide:** 2-1 Burma Rd. Pooraka SA 5095

CLIENT:	EP1934	TURNAROUND REQUIREMENTS :	☒ Standard TAT (list due date): (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Non Standard or urgent TAT (list due date):	FOR LABORATORY USE ONLY (circle) QALITY Seal Inged? ☐ Elected to accept the present work? ☒ Performance Sample Temperature ok (Record)? ☒ Other Comments: _____						
OFFICE:	3/19 Bolton St Newcastle										
PROJECT:	Mandalong Road	ALS QUOTE NO.:	SY-497-20 v2								
ORDER NUMBER:											
PROJECT MANAGER:	SL	CONTACT PH:	0403768722								
SAMPLER:		SAMPLER MOBILE:		RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):		DATE/TIME:	26/11/21	DATE/TIME:	28/11/21 10:54	DATE/TIME:	28/11/21 17:00	DATE/TIME:	28/01/21 07:30
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:											

ALS USE ONLY		SAMPLE DETAILS MATRIX: Solid(S) Water(W)		CONTAINER INFORMATION		ANALYSIS REQUIRED including SUTES (NB: Sute Codes must be listed to attract suite prices) Where Metals are required, specify Total (unfiltered bottles required) or Dissolved (acid filtered bottle required).				Additional Information	
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	POH	S-12	S-2	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.	
1	TP01-0.1 TP01-1.2	27/01/2021	S		1	X				Collected / Forwarded Lab / Split W/O Lab / Analysis: ACC1, ACC3 Organised By / Date: Enefifas Requisitioned By / Date: Remote / Courier: Newcal W/O No.: Attsch By PO / Internal Sheet:	
2	TP01-0.5	27/01/2021	S		1			X	X		
3	TP02-0.1 TP02-1.6	27/01/2021	S		1	X					
4	TP02-0.5 TP02-2.2	27/01/2021	S		1		X				
5	TP03-0.1	27/01/2021	S		1	X					
6	TP03-0.5 3 SNR	27/01/2021	S		1			X	X		
7	TP04-0.1	27/01/2021	S		1	X					
8	TP04-0.5	27/01/2021	S		1		X				
9	TP05-0.1	27/01/2021	S		1	X					
10	TP05-0.5	27/01/2021	S		1			X	X		
11	TP06-0.1	27/01/2021	S		1	X					
12	TP06-0.5	27/01/2021	S		1		X				
13	TP07-0.1	27/01/2021	S		1	X					
14	TP07-0.5	27/01/2021	S		1			X	X		

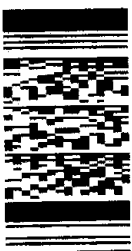
Environmental Division
Sydney
Work Order Reference
ES2102692

Telephone : + 61-2-8784 8655



Water Container Codes: P = Unpreserved Plastic; ORC = Nitric Preserved ORC; NV = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic; VA = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SS = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VAS = VOA Vial Sulfuric Preserved; VAS = Airtight Unpreserved Vial SS = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Stainless Steel; B = Unpreserved Bag; A = Acid Sulfuric Preserved; AS = Plastic Bag for Acid Sulfuric Solids; B = Unpreserved Bag.

Telephone : + 61-2-8784 8555



Environmental Division
Sydney
Work Order Reference
ES2102692

Case/On / Forward Lab / Split WO	
Lab / Analysis:	0001 bcc3
Organised By / Date:	Emm/hrs
Reiminished By / Date:	
Domnote / Courier:	Newcal
WO No.:	
Attach By PO / Internal Sheet:	

Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.

DAVID



ALS Laboratory: please tick ☐

☐ **Sydney:** 277 Woodpark Rd. Smithfield NSW 2164
 Ph: 02 8784 8555 E: samples.sydney@alserviro.com
☐ **Newcastle:** 5 Rosegum Rd. Warbrook NSW 2304
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☐ **Brisbane:** 32 Shand St, Stafford QLD 4053
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☐ **Townsville:** 14-15 Desma Ct, Bohle QLD 4818
 Ph:07 4796 0600 E:townsville.environmental@aisenviro.com

☐ **Melbourne:** 2-4 Westliff Rd, Springvale VIC 3171
Ph: 03 8549 9600 E: samples.melbourne@atserviro.com

☐ **Adelaide:** 2-1 Burma Rd, Pooraka SA 5095
Ph: 08 8359 0890 E: adelaide@atserviro.com

CUSTOMER:	EP1934	TURMAROUND REQUIREMENTS :	☐ Standard TAT (List due date):
OFFICE:	3719 Bolton St Newcastle	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☒ Non Standard or urgent TAT (List due date):
PROJECT:	Mandalong Road	ALS QUOTE NO.:	SY-497-20 v2
ORDER NUMBER:			
PROJECT MANAGER:	SL	CONTACT PH: 0403768722	
SAMPLER:		SAMPLER MOBILE:	
COC emailed to ALST? (YES / NO)			
Email Reports to (will default to PM if no other addresses are listed):			
Email Invoice to (will default to PM if no other addresses are listed):			
RECEIVED BY: [Signature]		COC SEQUENCE NUMBER (Circle) COO: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	
DATE/TIME: 28/1/21			
RELINQUISHED BY: [Signature]		RECEIVED BY: [Signature]	
DATE/TIME: 28/1/21 17:00		DATE/TIME: 28/1/21 17:00	
FOR LABORATORY USE ONLY (Circle) Expiry Seal intact? Yes No N/A No use of test in the possession of Yes No N/A Random sample temperature OK Record Yes No N/A Other comment: 7.4			

ALS USE ONLY		SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION			ANALYSIS REQUIRED INCLUDING SUITES (NB, Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).						Additional Information	
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	9-15 \$	Hold	9-12 \$	9-2 \$						Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
15	TP08_0.1	27/01/2021	S		1	X									
16	TP08_0.5	27/01/2021	S		1		X								
17	TP09_0.1	27/01/2021	S		1	X									
18	TP09_0.5	27/01/2021	S		1			X	X						
19	TP10_0.1	27/01/2021	S		1	X									
20	TP10_0.5	27/01/2021	S		1		X								
21	TP11_0.1	27/01/2021	S		1	X									
22	TP11_0.5	27/01/2021	S		1			X	X						
23	TP12_0.1	27/01/2021	S		1	X									
24	TP12_0.5	27/01/2021	S		1		X								
25	TP13_0.1	27/01/2021	S		1	X									
26	TP013_0.5	27/01/2021	S		1			X	X						
27	TP14_0.1	27/01/2021	S		1	X									
28	TP14_0.5	27/01/2021	S		1		X								

Water Container Codes: P = Unpreserved Plastic; n = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VA = VOA Vial Sulfuric Preserved; A = Airtight Unpreserved; VLA SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; F = Formaldehyde Preserved Glass
V = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Storage Bottle; ASS = Plastic Bag for Acid Sulphate; B = Unpreserved Bag.



CHAIN OF CUSTODY

ALS Laboratory, please tick →

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☐ Brisbane: 32 Strand St, Sturford QLD 4073
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☐ Townsville: 14-15 Deema Ct, Bohle QLD 4818
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☐ Melbourne: 24 Westall Rd, Springvale VIC 3171
Ph: 03 8548 0800 E: samples.melbourne@als-sydney.com
☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5095
Ph: 08 8355 0890 E: adelaide@als-sydney.com

FOR LABORATORY USE ONLY (circle)

Original Seal Intact? ☒ Yes ☐ No

File (15) frozen ice bricks present upon receipt? ☒ Yes ☐ No

Random Sample Temperature on Receipt: ☒ 7-10°C ☐ 10-15°C ☐ 15-20°C

Other comments: ☒ N/A

TURNAROUND REQUIREMENTS:

☐ Standard TAT (list due date):

☐ Non Standard or urgent TAT (list due date):

(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

SY-497-20 V2

COC SEQUENCE NUMBER (circle)

COC: 1 2 3 4 5 6 7

OR: 1 2 3 4 5 6 7

RECEIVED BY: ☒ 7-4

DATE/TIME: 28/1/21 17:00

CLIENT:	EP1934	TURNAROUND REQUIREMENTS:	☐ Standard TAT (list due date):	☐ Non Standard or urgent TAT (list due date):
OFFICE:	319 Bolton St Newcastle	ALS QUOTE NO.:	SY-497-20 V2	COC SEQUENCE NUMBER (circle)
PROJECT:	Mandalong Road	CONTACT PH: 0403768722	SAMPLER MOBILE:	RECEIVED BY: ☒ 7-4
ORDER NUMBER:				DATE/TIME: 28/1/21 17:00
PROJECT MANAGER:	SL			
SAMPLER:				
COC emailed to ALS? (YES / NO)				
Email Reports to (will default to PM if no other addresses are listed):				
Email Invoice to (will default to PM if no other addresses are listed):				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(s) Water(w)	CONTAINER INFORMATION	ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attract suite price) Where Models are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).	Additional Information Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
--------------	---	-----------------------	--	--

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	9-1-S	Hold	Faecal Coliform and E. Coli	9-12	9-2	Additional Information
29	TP15_0.1	27/01/2021	S		1	X					
30	TP15_0.5	27/01/2021	S		1			X	X		
31	TP15_0.1	27/01/2021	S	Score will be 29.	1	X					
32	TP16_0.5	27/01/2021	S		1		X				
33	TP16_0.1	27/01/2021	S		1	X					
34	TP18_0.5	27/01/2021	S		1			X	X		
35	TP18_0.1	27/01/2021	S		1	X					
36	TP19_0.5	27/01/2021	S		1		X				
37	TP19_0.1	27/01/2021	S		1	X					
38	TP20_0.5	27/01/2021	S		1			X	X		
39	TP20_0.1	27/01/2021	S		1	X					
40	TP21_0.5	27/01/2021	S		1		X				
41	TP21_0.1	27/01/2021	S		1	X					
42	Miro_01	27/01/2021	S		1			X			
TOTAL											

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORG = Nitric Preserved Plastic; SH = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airtight Unpreserved Plastic; V = VOA Vial HCl Preserved Plastic; VB = VOA Vial Sodium Bisphosphate Preserved Plastic; VS = VOA Vial Sulfuric Preserved Plastic; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Ascorbic Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; AS = Plastic Bag for Acid Sulfate Soils; B = Unpreserved Bag.



CHAIN OF CUSTODY

ALS Laboratory, please tick →

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Ph: 02 8764 8555 E: samples.syd@alsenviro.com
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Ph: 02 4388 9433 E: samples.newcastle@alsenviro.com

☐ Brisbane: 32 Sheard St, Sturtford QLD 4053
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Ph: 07 4796 0500 E: townsville@alsenviro.com

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☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5095
Ph: 08 8359 0850 E: adelaide@alsenviro.com

FOR LABORATORY USE ONLY (tick)

Client: See label?

Field sample temperature on receipt:

Field sample temperature on receipt:

Other comment:

RECEIVED BY:

DATE/TIME:

RECEIVED BY:

DATE/TIME:

Yes ☒ No ☐ N/A ☐

Yes ☒ No ☐ N/A ☐

Yes ☒ No ☐ N/A ☐

Yes ☒ No ☐ N/A ☐

Yes ☒ No ☐ N/A ☐

Yes ☒ No ☐ N/A ☐

Yes ☒ No ☐ N/A ☐

Yes ☒ No ☐ N/A ☐

Yes ☒ No ☐ N/A ☐

CLIENT:

EP1934

OFFICE: 3/19 Bolton St Newcastle

PROJECT: Mandalong Road

ORDER NUMBER: SL

PROJECT MANAGER: SL

SAMPLER: SL

COC emailed to ALS? (YES / NO)

Email Reports to (will default to PM if no other addresses are listed):

Email Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:

(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

Standard TAT (list due date):

Non Standard or urgent TAT (list due date):

SY-497-20 V2

CONTACT PH: 0403768722

SAMPLER MOBILE:

EDD FORMAT (or default):

RELINQUISHED BY:

DATE/TIME:

RECEIVED BY:

DATE/TIME:

RECEIVED BY:

DATE/TIME:

RECEIVED BY:

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DATE/TIME:

RECEIVED BY:

DATE/TIME:

RECEIVED BY:

DATE/TIME:

RECEIVED BY:

DATE/TIME:

SAMPLE DETAILS

MATRIX: Solid(s) Water(W)

LAB ID

SAMPLE ID

DATE / TIME

MATRIX

TYPE & PRESERVATIVE

(refer to codes below)

TOTAL BOTTLES

ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price)

Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).

Additional Information

Comments on likely contamination levels, dilutions, or samples requiring specific QC analysis etc.

LAB ID

SAMPLE ID

DATE / TIME

MATRIX

TYPE & PRESERVATIVE

(refer to codes below)

TOTAL BOTTLES

ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price)

Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).

Additional Information

Comments on likely contamination levels, dilutions, or samples requiring specific QC analysis etc.

LAB ID

SAMPLE ID

DATE / TIME

MATRIX

TYPE & PRESERVATIVE

(refer to codes below)

TOTAL BOTTLES

ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price)

Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORG = Nitric Preserved ORG; SH = Sodium Hydroxide/Cl Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airtight Unpreserved Plastic; V = VOA Vial HQ Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; NV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HQ Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag



CHAIN OF CUSTODY

ALS Laboratory, please tick →

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☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304
Ph: 02 4568 9433 E: samples.newcastle@alsenviro.com

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☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171
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☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5035
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FOR LABORATORY USE ONLY (Guide)

GLASSY SEAL TIGHT? ☒ Yes ☐ No

DOES THE OPEN INDICATOR PRESERVATIVE? ☒ Yes ☐ No

RANDOM SAMPLE TEMPERATURE OF BEZEL? ☒ Yes ☐ No

DATE/TIME: 28/11/21 17:00

RECEIVED BY: [Signature]

DATE/TIME: 28/11/21 10:54

RECEIVED BY: [Signature]

DATE/TIME: 28/11/21 10:54

RECEIVED BY: [Signature]

DATE/TIME: 28/11/21 10:54

RECEIVED BY: [Signature]

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RECEIVED BY: [Signature]

DATE/TIME: 28/11/21 10:54

RECEIVED BY: [Signature]

DATE/TIME: 28/11/21 10:54

RECEIVED BY: [Signature]

DATE/TIME: 28/11/21 10:54

CLIENT: EP1934
OFFICE: 3/19 Bolton St Newcastle
PROJECT: Mandalong Road
ORDER NUMBER: SL
PROJECT MANAGER: SL
CONTACT PH: 0403768722
SAMPLER MOBILE: [Blank]
SAMPLER MOBILE: [Blank]
COC emailed to ALS? (YES / NO)
Email Reports to (will default to PM if no other addresses are listed):
Email Invoice to (will default to PM if no other addresses are listed):
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attract suite price) When Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required):	Additional Information
57	BH09_1.0	27/01/2021	S		1	S-16	
58	NEPM Screen 01	27/01/2021	S		1	Hold	
59	NEPM Screen 02	27/01/2021	S		1	p-22	
60	ACM_001	27/01/2021	S		1		
61	ACM_002	27/01/2021	S		1		
62	ACM_003	27/01/2021	S		1		
63	ACM_004	27/01/2021	S		1		
64	ACM_005	27/01/2021	S		1		
65	ACM_ID_01	27/01/2021	S		1		
66	ACM_ID_02	27/01/2021	S		1		
67	QC02	27/01/2021	S		1		
68	QC04	27/01/2021	S		1		
TOTAL							

Water Container Codes: P = Unpreserved Plastic, N = Nitro Preserved Plastic, ORC = Nitro Preserved ORC, SH = Sodium Hydroxide Preserved, S = Sodium Hydroxide Preserved Plastic, AG = Amber Glass Unpreserved, AP = Airtight Unpreserved Plastic, V = VOA Vial HCl Preserved, VB = VOA Vial Sodium Bisulfate Preserved, VS = VOA Vial Sulfuric Preserved, AV = Airtight Unpreserved Vial, SQ = Sulfuric Preserved Amber Glass, H = HCl Preserved Plastic, HS = HCl Preserved Speciation bottle, SP = Sulfuric Preserved Plastic, F = Formaldehyde Preserved Glass, Z = Zinc Acetate Preserved Bottle, E = EDTA Preserved Bottles, ST = Sealed Bottle, ASS = Plastic Bag for Acid Sulphate Solids, B = Unpreserved Bag.



CHAIN OF CUSTODY

ALS Laboratory, please tick →

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☐ Townsville: 14-15 Deanna Ct, Bonlie QLD 4813
Ph: 07 4795 0500 E: townsville.analysis@alsenviro.com

☐ Melbourne: 2-4 Western Rd, Springvale VIC 3171
Ph: 03 8549 9500 E: samples.melbourne@alsenviro.com
☐ Adelaide: 2-1 Burns Rd, Pooraka SA 5065
Ph: 08 8350 0590 E: adelaide@alsenviro.com

CLIENT: EPI394

OFFICE: 313 Bolton St Newcastle

PROJECT: Mandalong Road

ORDER NUMBER: SL

PROJECT MANAGER: SL

SAMPLER: SL

COC emailed to ALS? (YES / NO)

Email Reports to (will default to PM if no other addresses are listed):

Email Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:

(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

ALS QUOTE NO: SY497-20 V2

CONTACT PH: 0403768722

SAMPLER MOBILE: EDD FORMAT (or default):

REINQUISHED BY: DATE/TIME:

RECEIVED BY: DATE/TIME:

RECEIVED BY: DATE/TIME:

RECEIVED BY: DATE/TIME:

RECEIVED BY: DATE/TIME:

RECEIVED BY: DATE/TIME:

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RECEIVED BY: DATE/TIME:

CONTAINER INFORMATION

ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attract suite prices)

Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)

LAB ID

SAMPLE ID

DATE / TIME

MATRIX

TYPE & PRESERVATIVE (refer to codes below)

TOTAL BOTTLES

91-5

PH

21-5

21-5

21-5

21-5

21-5

21-5

21-5

21-5

21-5

21-5

21-5

21-5

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21-5

ADDITIONAL INFORMATION

Comments on likely contaminants, sample dilutions, or sampler requiring specific QC analysis etc.

Environmental Division

Sydney

Work Order Reference

ES2102692

Telephone: +61-2-8794 8555

Barcode

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CHAIN OF CUSTODY

ALS Laboratory, please tick →

☐ Sydney 277 Macquarie Rd, Smithfield NSW 2154
Ph: 02 8764 5555 E: samples@als.com.au
☐ Newcastle 15 Hoggan Rd, Waratah NSW 2304
Ph: 02 4958 5435 E: samples@als.com.au

☐ Brisbane 33 Shaw St, Stretton QLD 4053
Ph: 07 3243 7222 E: samples@als.com.au
☐ Townsville 14-15 Lysons Ct, Bohle QLD 4818
Ph: 07 4756 0600 E: samples@als.com.au

☐ Melbourne 21 Westall Rd, Springvale VIC 3171
Ph: 03 8549 5000 E: samples@als.com.au
☐ Adelaide 211 Burns Rd, Morphett SA 5005
Ph: 08 8356 0850 E: samples@als.com.au

FOR LABORATORY USE ONLY (Cont)

Checklist for sample receipt and analysis

Sample received	Yes	No
Sample analysed	Yes	No
Sample stored	Yes	No
Sample disposed	Yes	No

TURNAROUND REQUIREMENTS :

☐ Standard TAT (list due date):
(Standard TAT may be longer for some tests eg. Ultra Trace Organics)

☐ Non Standard or urgent TAT (list due date):

ALSO QUOTE NO. SY 497.20 V2

PROJECT: Mandalong Road

ORDER NUMBER: SL

PROJECT MANAGER: SL

CONTACT PH: 0403768722

SAMPLER MOBILE: EDD FORMAT (or default):

COC emailed to ALS? (YES / NO)

Email Reports to (will default to PM if no other addresses are listed):

Email Invoice to (will default to PM if no other addresses are listed):

RECEIVED BY: DATE/TIME:

RECEIVED BY: DATE/TIME:

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SAMPLE DETAILS

MATRIX: Solid(S) Water(W)

CONTAINER INFORMATION

ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attract suite price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).

Additional Information

Comments on likely container levels, dilutions or samples requiring specific QC analysis etc.

LAB ID

SAMPLE ID

DATE / TIME

MATRIX

TYPE & PRESERVATIVE
(refer to codes below)

TOTAL BOTTLES

91-5

12

2

15

TP08_0.1

27/01/2021

S

1

X

X

X

X

X

16

TP08_0.5

27/01/2021

S

1

X

X

X

X

X

17

TP09_0.1

27/01/2021

S

1

X

X

X

X

X

18

TP09_0.5

27/01/2021

S

1

X

X

X

X

X

19

TP10_0.1

27/01/2021

S

1

X

X

X

X

X

20

TP10_0.5

27/01/2021

S

1

X

X

X

X

X

21

TP11_0.1

27/01/2021

S

1

X

X

X

X

X

22

TP11_0.5

27/01/2021

S

1

X

X

X

X

X

23

TP12_0.1

27/01/2021

S

1

X

X

X

X

X

24

TP12_0.5

27/01/2021

S

1

X

X

X

X

X

25

TP13_0.1

27/01/2021

S

1

X

X

X

X

X

26

TP013_0.5

27/01/2021

S

1

X

X

X

X

X

27

TP14_0.1

27/01/2021

S

1

X

X

X

X

X

28

TP14_0.5

27/01/2021

S

1

X

X

X

X

X

TOTAL

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; OHC = Nitric Preserved OHC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic; V = VOA via HCl Preserved; VB = VOA via Sodium Bisulfate Preserved; VS = VOA via Sulfuric Preserved; AV = Airtight Unpreserved via SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Supplied Solids; B = Unpreserved Bag.



CHAIN OF CUSTODY

ALS Laboratory, please tick →

☐ Sydney 227 VocoPark Rd, Smithfield NSW 2161
Ph 02 8764 8999 E samples@sydney.alsenviro.com
☐ Newcastle 8 Beaumont Rd, Warabrook NSW 2304
Ph 02 4980 3633 E samples@newcastle.alsenviro.com

☐ Brisbane 32 Sharni St, Stafford QLD 4053
Ph 07 3233 7222 E samples@brisbane.alsenviro.com
☐ Townsville 14-15 Desha Ct, Bonnie QLD 4818
Ph 07 4784 0620 E samples@townsville.alsenviro.com

☐ Melbourne 2-4 Muddell Rd, Springvale VIC 3171
Ph 03 8549 9900 E samples@melbourne.alsenviro.com
☐ Adelaide 2-1 Burma Rd, Pooraka SA 5005
Ph 08 8285 0087 E samples@adelaide.alsenviro.com

FOR LABORATORY USE ONLY (Card)

Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.

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Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.

CLIENT:		EP1934		TURNAROUND REQUIREMENTS:		☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):		FOR LABORATORY USE ONLY (Card)									
OFFICE:		3719 Bolton St Newcastle		Standard TAT may be longer for some tests e.g. Ultra Trace Organics				Quantity of TAT used									
PROJECT:		Mandalong Road		ALS QUOTE NO.:		SY497-20 V2		Biology: If present, use bottles present upon receipt									
ORDER NUMBER:								Biology: If present, use bottles present upon receipt									
PROJECT MANAGER:		SL		CONTACT PH: 0403768722				Biology: If present, use bottles present upon receipt									
SAMPLER:				SAMPLER MOBILE:		RELINQUISHED BY:		Biology: If present, use bottles present upon receipt									
COC emailed to ALST (YES / NO)				EDD FORMAT (or default):		DATE/TIME:		Biology: If present, use bottles present upon receipt									
Email Reports to (will default to PM if no other addresses are listed):				DATE/TIME:		RECEIVED BY:		Biology: If present, use bottles present upon receipt									
Email Invoice to (will default to PM if no other addresses are listed):				DATE/TIME:		RECEIVED BY:		Biology: If present, use bottles present upon receipt									
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:																	
LAB ID		SAMPLE ID		DATE / TIME		MATRIX		TYPE & PRESERVATIVE (refer to codes below)		TOTAL BOTTLES		ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attach suite price) Where Multiple are required, specify Total (unfilled bottle required) or Dissolved (fill blank bottle required)		Additional Information			
443		Micro_02		27/01/2021		S				1		S-16		Faecal Coliform and E. Coll		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.	
444		Micro_03		27/01/2021		S				1				X			
445		Micro_04		27/01/2021		S				1				X			
446		Micro_05		27/01/2021		S				1				X			
447		Micro_06		27/01/2021		S				1				X			
448		BH01_0.05		27/01/2021		S				1				X			
449		BH02_0.05		27/01/2021		S				1				X			
500		BH03_0.05		27/01/2021		S				1				X			
501		BH04_0.05		27/01/2021		S				1				X			
502		BH05_0.05		27/01/2021		S				1				X			
503		BH06_0.05		27/01/2021		S				1				X			
504		BH07_0.05		27/01/2021		S				1				X			
505		BH08_0.05		27/01/2021		S				1				X			
506		BH09_0.6		27/01/2021		S				1				X			
TOTAL																	

Water Container Codes: P = Unpreserved Plastic, N = Nitrite Preserved Plastic, ORC = Nitrite Preserved ORC, SH = Sodium Hydroxide Preserved Plastic, S = Sodium Hydroxide Preserved Plastic, AG = Amber Glass Unpreserved, AP = Airtight Unpreserved Plastic

N = VOA Vial HCl Preserved, VB = VOA Vial Sodium Bisphosphate Preserved, VS = VOA Vial Sulfuric Preserved, VAS = Sulfuric Preserved Amber Glass, H = HCl Preserved Plastic, HS = HCl Preserved Speciation bottle, SP = Sulfuric Preserved Plastic, F = Formaldehyde Preserved Glass,

Z = Zinc Acetate Preserved Bottle, E = EDTA Preserved Bottle, ST = Sterile Bottle, ASS = Plastic Bag for Acid Supplied Solids, S = Unpreserved Bag

Water Container Codes: P = Unpreserved Plastic, N = Nitric Preserved Plastic, ORC = Nitric Preserved ORC, SH = Sodium Hydroxide Preserved, S = Sodium Hydroxide Preserved Plastic, AG = Amber Glass Unpreserved, AP = Airtight Unpreserved Plastic, V = VOA Vial HCl Preserved, VG = VOA Vial Sodium Bisphosphate Preserved, VS = VOA Vial Sulfuric Preserved, AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass, H = HCl Preserved Plastic, HS = HCl Preserved Speciation bottle, SP = Sulfuric Preserved Plastic, F = Fomalehyde Preserved Glass, Z = Zinc Acetate Preserved Bottle, E = EDTA Preserved Bottle, ST = Saline Bottle, ASS = Plastic Bag for Acid Supplied Soils, B = Unpreserved Bag.



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☐ Brisbane: 305 Sand St, Stafford QLD 4053
Ph: 07 3243 7222 E: samples.brisbane@caselaw.com

☐ Townsville: 14-15 Desma Ct, Bonnie QLD 4818
Ph: 07 4796 0600 E: townsville.solutions@caselaw.com

☐ Melbourne 2-1 Westall Rd Springvale VIC 3171
Ph 03 8549 9600 E: samples.melbourne@dfservco.com

FABIAN ROYAL V. GRIFFIN

(Gutty) Seal intact?
 Evidence / Impression of any product upon
 the seal?
 Random Sample / Temperature on Receipt
 Other comments

CLIENT:	EP1934						TURNDOWN REQUIREMENTS :							☐ Standard TAT (list due date):		FOR LABORATORY USE ONLY (CASH) Questioned Seal tested: Yes No Prescribed Quantities present in room: Yes No Random Samples analysed on Receipt: Yes No Other comments:							
OFFICE:	3419 Bolton St Newcastle						(Standard TAT may be longer for some tests e.g. Ultra Traces Organics)							Non Standard or urgent TAT (list due date):									
PROJECT:	Mandlions Road						ALS QUOTE NO.:																
ORDER NUMBER:							SY 497-20 v2																
PROJECT MANAGER:	SL						CONTACT PH: 040368722																
SAMPLER:							SAMPLER MOBILE:																
COC emailed to ALS? (YES / NO)							EDD FORMAT (or default):																
Email Reports to (will default to PM if no other addresses are listed):														DATE/TIME:									
Email invoice to (will default to PM if no other addresses are listed):														DATE/TIME:									
													RELINQUISHED BY:										
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													DATE/TIME:										

[illegible]

CERTIFICATE OF ANALYSIS

Work Order : **EB2102179**
Client : **EP Risk Management**
Contact : **MR STUART LORD**
Address : **3/19 BOLTON STREET**
NEWCASTLE NSW 2300
Telephone : **----**
Project : **Preliminary Acid Sulfate Soil**
Order number : **EP1934**
C-O-C number : **----**
Sampler : **----**
Site : **----**
Quote number : **SY/497/20 Primary analysis only**
No. of samples received : **5**
No. of samples analysed : **5**

Page : 1 of 2
Laboratory : Environmental Division Brisbane
Contact : Hannah White
Address : 2 Byth Street Stafford QLD Australia 4053
Telephone : +61-7-3243 7222
Date Samples Received : 29-Jan-2021 09:36
Date Analysis Commenced : 05-Feb-2021
Issue Date : 05-Feb-2021 11:52



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

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
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD



General Comments

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

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

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

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

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact 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.

- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- 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'.

Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

				Sample ID	ASS01	ASS02	ASS03	ASS04	ASS05
Sampling date / time					27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00	27-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		EB2102179-001	EB2102179-002	EB2102179-003	EB2102179-004	EB2102179-005
					Result	Result	Result	Result	Result
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit		4.9	4.7	4.6	5.2	5.3
Titrateable Actual Acidity (23F)	----	2	mole H+ / t		5	26	9	3	3
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S		<0.02	0.04	<0.02	<0.02	<0.02
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S		0.007	0.022	0.019	0.012	0.017
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t		<10	14	12	<10	11
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-		1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S		<0.02	0.06	0.03	<0.02	0.02
Net Acidity (acidity units)	----	10	mole H+ / t		<10	40	20	11	13
Liming Rate	----	1	kg CaCO ₃ /t		<1	3	2	<1	1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		<0.02	0.06	0.03	<0.02	0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		<10	40	20	11	13
Liming Rate excluding ANC	----	1	kg CaCO ₃ /t		<1	3	2	<1	1

QUALITY CONTROL REPORT

Work Order	: EB2102179	Page	: 1 of 3
Client	: EP Risk Management	Laboratory	: Environmental Division Brisbane
Contact	: MR STUART LORD	Contact	: Hannah White
Address	: 3/19 BOLTON STREET NEWCASTLE NSW 2300	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61-7-3243 7222
Project	: Preliminary Acid Sulfate Soil	Date Samples Received	: 29-Jan-2021
Order number	: EP1934	Date Analysis Commenced	: 05-Feb-2021
C-O-C number	: ----	Issue Date	: 05-Feb-2021
Sampler	: ----		
Site	: ----		
Quote number	: SY/497/20 Primary analysis only		
No. of samples received	: 5		
No. of samples analysed	: 5		



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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD



General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA033-A: Actual Acidity (QC Lot: 3494763)									
EB2102179-001	ASS01	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.00	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	5	6	0.00	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	4.9	4.9	0.00	0% - 20%
EA033-B: Potential Acidity (QC Lot: 3494763)									
EB2102179-001	ASS01	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.007	0.014	66.7	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (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 Spike (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**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result			LCS	Low
EA033-A: Actual Acidity (QCLot: 3494763)								
EA033: pH KCl (23A)	----	----	pH Unit	----	4.4 pH Unit	97.7	91.0	107
EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	15 mole H+ / t	93.8	70.0	124
EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-B: Potential Acidity (QCLot: 3494763)								
EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.155 % S	102	77.0	121
EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	----	----

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	: EB2102179	Page	: 1 of 4
Client	: EP Risk Management	Laboratory	: Environmental Division Brisbane
Contact	: MR STUART LORD	Telephone	: +61-7-3243 7222
Project	: Preliminary Acid Sulfate Soil	Date Samples Received	: 29-Jan-2021
Site	: ----	Issue Date	: 05-Feb-2021
Sampler	: ----	No. of samples received	: 5
Order number	: EP1934	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, **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	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA033-A: Actual Acidity								
Snap Lock Bag - frozen (EA033) ASS01, ASS03, ASS05	ASS02, ASS04,	27-Jan-2021	05-Feb-2021	27-Jan-2022	✓	05-Feb-2021	06-May-2021	✓
EA033-B: Potential Acidity								
Snap Lock Bag - frozen (EA033) ASS01, ASS03, ASS05	ASS02, ASS04,	27-Jan-2021	05-Feb-2021	27-Jan-2022	✓	05-Feb-2021	06-May-2021	✓
EA033-C: Acid Neutralising Capacity								
Snap Lock Bag - frozen (EA033) ASS01, ASS03, ASS05	ASS02, ASS04,	27-Jan-2021	05-Feb-2021	27-Jan-2022	✓	05-Feb-2021	06-May-2021	✓
EA033-D: Retained Acidity								
Snap Lock Bag - frozen (EA033) ASS01, ASS03, ASS05	ASS02, ASS04,	27-Jan-2021	05-Feb-2021	27-Jan-2022	✓	05-Feb-2021	06-May-2021	✓
EA033-E: Acid Base Accounting								
Snap Lock Bag - frozen (EA033) ASS01, ASS03, ASS05	ASS02, ASS04,	27-Jan-2021	05-Feb-2021	27-Jan-2022	✓	05-Feb-2021	06-May-2021	✓



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	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Suite for Acid Sulphate Soils	EA033	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Suite for Acid Sulphate Soils	EA033	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
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.
Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EB2102179

Client	: EP Risk Management	Laboratory	: Environmental Division Brisbane
Contact	: MR STUART LORD	Contact	: Hannah White
Address	: 109/283 Alfred St NORTH SYDNEY NSW 2060	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: stuart.lord@eprisk.com.au	E-mail	: Hannah.White@alsglobal.com
Telephone	: ----	Telephone	: +61-7-3243 7222
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: Preliminary Acid Sulfate Soil	Page	: 1 of 2
Order number	: EP1934	Quote number	: ES2020EPRISK0006 (SY/497/20 Primary analysis only)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 29-Jan-2021 09:36	Issue Date	: 01-Feb-2021
Client Requested Due Date	: 05-Feb-2021	Scheduled Reporting Date	: 05-Feb-2021

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 3.4°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 5 / 5

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- *Samples were originally received by ALS Newcastle on 28/1/21 and have been forwarded to ALS Brisbane for analysis. Temperature on arrival in ALS Brisbane has been noted above.
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

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

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

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

SOIL - EA033
Chromium Suite for Acid Sulphate Soils

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - E Chromi
EB2102179-001	27-Jan-2021 00:00	ASS01	✓
EB2102179-002	27-Jan-2021 00:00	ASS02	✓
EB2102179-003	27-Jan-2021 00:00	ASS03	✓
EB2102179-004	27-Jan-2021 00:00	ASS04	✓
EB2102179-005	27-Jan-2021 00:00	ASS05	✓

Sample(s) have been received within the recommended holding times for the requested analysis.

ACCOUNTS PAYABLE

- Email accounts@eprisk.com.au

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- EDI Format - ENMRG (ENMRG)
- EDI Format - ESDAT (ESDAT)

- [illegible]

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Analyte Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

EP Risk Management (NSW)
109/283 Alfred Street
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: **Stuart Lord**

Report **770609-S**

Project name **MANDALONG ROAD**

Received Date **Jan 29, 2021**

Client Sample ID			QC01	QC03
Sample Matrix			Soil	Soil
Eurofins Sample No.			S21-Fe00030	S21-Fe00031
Date Sampled			Jan 27, 2021	Jan 27, 2021
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	33	< 20
TRH C15-C28	50	mg/kg	150	< 50
TRH C29-C36	50	mg/kg	< 50	62
TRH C10-C36 (Total)	50	mg/kg	183	62
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	54	58
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	190	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	190	< 100
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			QC01	QC03
Sample Matrix			Soil	Soil
Eurofins Sample No.			S21-Fe00030	S21-Fe00031
Date Sampled			Jan 27, 2021	Jan 27, 2021
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	1.0	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	1	< 0.5
2-Fluorobiphenyl (surr.)	1	%	85	76
p-Terphenyl-d14 (surr.)	1	%	104	97
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.1	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2
Dibutylchlorobenzene (surr.)	1	%	104	115
Tetrachloro-m-xylene (surr.)	1	%	94	96
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2

Client Sample ID			QC01	QC03
Sample Matrix			Soil	Soil
Eurofins Sample No.			S21-Fe00030	S21-Fe00031
Date Sampled			Jan 27, 2021	Jan 27, 2021
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Disulfoton	0.2	mg/kg	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	113	116
Polychlorinated Biphenyls				
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5
Dibutylchloroendate (surr.)	1	%	104	115
Tetrachloro-m-xylene (surr.)	1	%	94	96
Heavy Metals				
Arsenic	2	mg/kg	8.8	4.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	5.6	8.6
Copper	5	mg/kg	24	< 5
Lead	5	mg/kg	31	5.5
Mercury	0.1	mg/kg	0.2	< 0.1
Nickel	5	mg/kg	8.0	< 5
Zinc	5	mg/kg	110	6.2
% Moisture	1	%	20	6.7

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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 - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Feb 02, 2021	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Feb 02, 2021	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Feb 02, 2021	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Feb 02, 2021	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Feb 02, 2021	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Feb 02, 2021	180 Days
Eurofins Suite B15			
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Feb 02, 2021	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Feb 02, 2021	14 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Feb 02, 2021	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Feb 01, 2021	14 Days

Australia

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Dandenong South VIC 3175
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NATA # 1261
Site # 1254 & 14271

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NATA # 1261 Site # 20794

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Company Name: EP Risk Management (NSW)
Address: 109/283 Alfred Street
North Sydney
NSW 2060
Project Name: MANDALONG ROAD

Order No.:
Report #: 770609
Phone: 02 99225021
Fax:

Received: Jan 29, 2021 6:00 PM
Due: Feb 5, 2021
Priority: 5 Day
Contact Name: Stuart Lord

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						Eurofins Suite B15	Moisture Set	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Mayfield Laboratory								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	QC01	Jan 27, 2021		Soil	S21-Fe00030	X	X	X
2	QC03	Jan 27, 2021		Soil	S21-Fe00031	X	X	X
Test Counts						2	2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - 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.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. 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.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. 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 - 1999 NEPM Fractions							
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	
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	
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							
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-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	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-BHC (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	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 0.1			0.1	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	< 0.5			0.5	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB*	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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	71			70-130	Pass	
TRH C10-C14	%	82			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	77			70-130	Pass	
Toluene	%	75			70-130	Pass	
Ethylbenzene	%	79			70-130	Pass	
m&p-Xylenes	%	80			70-130	Pass	
o-Xylene	%	79			70-130	Pass	
Xylenes - Total*	%	80			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	75			70-130	Pass	
TRH C6-C10	%	71			70-130	Pass	
TRH >C10-C16	%	80			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	85			70-130	Pass	
Acenaphthylene	%	86			70-130	Pass	
Anthracene	%	91			70-130	Pass	
Benz(a)anthracene	%	88			70-130	Pass	
Benzo(a)pyrene	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	%	104			70-130	Pass	
Benzo(g,h,i)perylene	%	85			70-130	Pass	
Benzo(k)fluoranthene	%	103			70-130	Pass	
Chrysene	%	95			70-130	Pass	
Dibenz(a,h)anthracene	%	80			70-130	Pass	
Fluoranthene	%	95			70-130	Pass	
Fluorene	%	87			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	85			70-130	Pass	
Naphthalene	%	82			70-130	Pass	
Phenanthrene	%	81			70-130	Pass	
Pyrene	%	94			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	105			70-130	Pass	
4,4'-DDD	%	76			70-130	Pass	
4,4'-DDE	%	95			70-130	Pass	
4,4'-DDT	%	93			70-130	Pass	
α-BHC	%	94			70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin				%	88			70-130	Pass	
b-BHC				%	87			70-130	Pass	
d-BHC				%	89			70-130	Pass	
Dieldrin				%	89			70-130	Pass	
Endosulfan I				%	107			70-130	Pass	
Endosulfan II				%	97			70-130	Pass	
Endosulfan sulphate				%	89			70-130	Pass	
Endrin				%	105			70-130	Pass	
Endrin aldehyde				%	85			70-130	Pass	
Endrin ketone				%	109			70-130	Pass	
g-BHC (Lindane)				%	88			70-130	Pass	
Heptachlor				%	95			70-130	Pass	
Heptachlor epoxide				%	89			70-130	Pass	
Hexachlorobenzene				%	85			70-130	Pass	
Methoxychlor				%	92			70-130	Pass	
LCS - % Recovery										
Organophosphorus Pesticides										
Diazinon				%	114			70-130	Pass	
Dimethoate				%	92			70-130	Pass	
Ethion				%	95			70-130	Pass	
Fenitrothion				%	107			70-130	Pass	
Methyl parathion				%	116			70-130	Pass	
Mevinphos				%	127			70-130	Pass	
LCS - % Recovery										
Polychlorinated Biphenyls										
Aroclor-1016				%	87			70-130	Pass	
Aroclor-1260				%	121			70-130	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	100			80-120	Pass	
Cadmium				%	104			80-120	Pass	
Chromium				%	112			80-120	Pass	
Copper				%	113			80-120	Pass	
Lead				%	97			80-120	Pass	
Mercury				%	99			80-120	Pass	
Nickel				%	114			80-120	Pass	
Zinc				%	108			80-120	Pass	
Test		Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C6-C9		S21-Fe03403	NCP	%	71			70-130	Pass	
TRH C10-C14		S21-Fe06825	NCP	%	112			70-130	Pass	
Spike - % Recovery										
BTEX					Result 1					
Benzene		S21-Fe03403	NCP	%	85			70-130	Pass	
Toluene		S21-Fe03403	NCP	%	85			70-130	Pass	
Ethylbenzene		S21-Fe03403	NCP	%	87			70-130	Pass	
m&p-Xylenes		S21-Fe03403	NCP	%	88			70-130	Pass	
o-Xylene		S21-Fe03403	NCP	%	89			70-130	Pass	
Xylenes - Total*		S21-Fe03403	NCP	%	88			70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
Naphthalene		S21-Fe03403	NCP	%	90			70-130	Pass	
TRH C6-C10		S21-Fe03403	NCP	%	74			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH >C10-C16	S21-Fe06825	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-Fe01635	NCP	%	83			70-130	Pass	
Acenaphthylene	S21-Fe01635	NCP	%	84			70-130	Pass	
Anthracene	S21-Fe01635	NCP	%	82			70-130	Pass	
Benz(a)anthracene	S21-Fe01635	NCP	%	89			70-130	Pass	
Benzo(a)pyrene	S21-Fe01635	NCP	%	78			70-130	Pass	
Benzo(b&i)fluoranthene	S21-Fe01635	NCP	%	82			70-130	Pass	
Benzo(g,h,i)perylene	S21-Fe01635	NCP	%	74			70-130	Pass	
Benzo(k)fluoranthene	S21-Fe01635	NCP	%	88			70-130	Pass	
Chrysene	S21-Fe01635	NCP	%	87			70-130	Pass	
Dibenz(a,h)anthracene	S21-Fe01635	NCP	%	80			70-130	Pass	
Fluoranthene	S21-Fe01635	NCP	%	82			70-130	Pass	
Fluorene	S21-Fe01635	NCP	%	84			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S21-Fe01635	NCP	%	77			70-130	Pass	
Naphthalene	S21-Fe01635	NCP	%	81			70-130	Pass	
Phenanthrene	S21-Fe01635	NCP	%	81			70-130	Pass	
Pyrene	S21-Fe01635	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-Fe02309	NCP	%	85			70-130	Pass	
4,4'-DDD	S21-Fe02309	NCP	%	95			70-130	Pass	
4,4'-DDE	S21-Fe02309	NCP	%	85			70-130	Pass	
4,4'-DDT	S21-Fe01635	NCP	%	70			70-130	Pass	
a-BHC	S21-Fe02309	NCP	%	91			70-130	Pass	
Aldrin	S21-Fe02309	NCP	%	86			70-130	Pass	
b-BHC	S21-Fe02309	NCP	%	87			70-130	Pass	
d-BHC	S21-Fe02309	NCP	%	87			70-130	Pass	
Dieldrin	S21-Fe02309	NCP	%	80			70-130	Pass	
Endosulfan I	S21-Fe02309	NCP	%	96			70-130	Pass	
Endosulfan II	S21-Fe02309	NCP	%	97			70-130	Pass	
Endosulfan sulphate	S21-Fe02309	NCP	%	74			70-130	Pass	
Endrin	S21-Fe02309	NCP	%	85			70-130	Pass	
Endrin ketone	S21-Fe02309	NCP	%	106			70-130	Pass	
g-BHC (Lindane)	S21-Fe02309	NCP	%	89			70-130	Pass	
Heptachlor	S21-Fe02309	NCP	%	86			70-130	Pass	
Heptachlor epoxide	S21-Fe02309	NCP	%	92			70-130	Pass	
Hexachlorobenzene	S21-Fe02309	NCP	%	87			70-130	Pass	
Methoxychlor	S21-Fe01635	NCP	%	76			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S21-Fe02309	NCP	%	107			70-130	Pass	
Dimethoate	S21-Fe02309	NCP	%	79			70-130	Pass	
Ethion	S21-Fe02309	NCP	%	93			70-130	Pass	
Fenitrothion	S21-Fe02309	NCP	%	99			70-130	Pass	
Methyl parathion	S21-Fe02309	NCP	%	105			70-130	Pass	
Mevinphos	S21-Fe02309	NCP	%	125			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S21-Fe01512	NCP	%	86			70-130	Pass	
Aroclor-1260	S21-Fe01512	NCP	%	123			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic	S21-Fe01808	NCP	%	114			75-125	Pass	
Cadmium	S21-Fe01808	NCP	%	106			75-125	Pass	
Chromium	S21-Fe01808	NCP	%	111			75-125	Pass	
Copper	S21-Fe00066	NCP	%	120			75-125	Pass	
Lead	S21-Fe08248	NCP	%	106			75-125	Pass	
Mercury	S21-Fe01808	NCP	%	101			75-125	Pass	
Nickel	S21-Fe00066	NCP	%	114			75-125	Pass	
Zinc	S21-Fe00066	NCP	%	119			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S21-Fe05687	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S21-Ja36723	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-Ja36723	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S21-Ja36723	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-Fe05687	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-Fe05687	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-Fe05687	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-Fe05687	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-Fe05687	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-Fe05687	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S21-Fe05687	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-Fe05687	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S21-Ja36723	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-Ja36723	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-Ja36723	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-Fe06723	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Fe02307	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
a-BHC	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S21-Fe02307	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S21-Fe02307	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S21-Fe02307	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S21-Fe02307	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S21-Fe02307	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1254	S21-Ja35861	NCP	mg/kg	4900	5300	9.0	30%	Pass
Total PCB*	S21-Ja35861	NCP	mg/kg	4900	5300	9	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S21-Fe00030	CP	mg/kg	8.8	7.3	18	30%	Pass
Cadmium	S21-Fe00030	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S21-Fe00030	CP	mg/kg	5.6	6.8	20	30%	Pass
Copper	S21-Fe00030	CP	mg/kg	24	19	23	30%	Pass
Lead	S21-Fe00030	CP	mg/kg	31	17	60	30%	Fail
Mercury	S21-Fe00030	CP	mg/kg	0.2	0.1	54	30%	Fail
Nickel	S21-Fe00030	CP	mg/kg	8.0	8.0	1.0	30%	Pass
Zinc	S21-Fe00030	CP	mg/kg	110	74	43	30%	Fail
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S21-Fe01620	NCP	%	26	24	11	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
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Asim Khan	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)



Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Company Name: EP Risk Management (NSW)
Address: 109/283 Alfred Street
 North Sydney
 NSW 2060

Project Name: MANDALONG ROAD

Order No.:
Report #: 770609
Phone: 02 99225021
Fax:

Received: Jan 29, 2021 6:00 PM
Due: Feb 5, 2021
Priority: 5 Day
Contact Name: Stuart Lord

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						Eurofins Suite B15	Moisture Set	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Mayfield Laboratory								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	QC01	Jan 27, 2021		Soil	S21-Fe00030	X	X	X
2	QC03	Jan 27, 2021		Soil	S21-Fe00031	X	X	X
Test Counts						2	2	2

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name: EP Risk Management (NSW)
Contact name: Stuart Lord
Project name: MANDALONG ROAD
Project ID: Not provided
Turnaround time: 5 Day
Date/Time received: Jan 29, 2021 6:00 PM
Eurofins reference: 770609

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

Notes

Contact

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

Elvis Dsouza on phone : or by email: ElvisDsouza@eurofins.com

Results will be delivered electronically via email to Stuart Lord - Stuart.Lord@eprisk.com.au.

Note: A copy of these results will also be delivered to the general EP Risk Management (NSW) email address.



CHAIN OF CUSTODY

ALS Laboratory - please tick →

Sydney 277 Woodlark Rd, Lindfield NSW 2150
Ph: 02 8784 8555 E: samples.sydney@als.com.au

Brisbane 30 Island St, Stafford QLD 4053
Ph: 07 3243 1222 E: samples.brisbane@als.com.au

Townsville 14-15 Enderby Ave, Dubble QLD 4810
Ph: 07 4716 0600 E: samples.townsville@als.com.au

Melbourne 2-4 Winton Pl, Springvale VIC 3171
Ph: 03 8549 0800 E: samples.melbourne@als.com.au

Auckland 211 Hume St, Auckland 1010
Ph: 09 3339 6850 E: samples.auckland@als.com.au

CLIENT:	EP1934	TURNAROUND REQUIREMENTS:	☒ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)	
OFFICE:	3/19 Bolton St Newcastle	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No N/A
PROJECT:	Mandalong Road	ALS QUOTE NO.:	SY-497-20 v2	Free ice / frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER:				Random Sample Temperature on Receipt:	7.4 °C
PROJECT MANAGER:	SL	CONTACT PH:	0403768722	Other comment:	
SAMPLER:		SAMPLER MOBILE:		RECEIVED BY:	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):		RELINQUISHED BY:	
Email Reports to (will default to PM if no other addresses are listed):				DATE/TIME:	
Email Invoice to (will default to PM if no other addresses are listed):				DATE/TIME:	

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite once) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)				Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	Hold	S-12	S-2	Comments on likely contaminant levels, suites requiring specific QC analysis etc.
1	TP01_0.1	27/01/2021	S		1	X				Subcon / Forward Lab / Split WO
2	TP01_0.5	27/01/2021	S		1			X	X	Lab / Analysis:
3	TP02_0.1	27/01/2021	S		1	X				Organised By / Date:
4	TP02_0.5	27/01/2021	S		1		X			Relinquished By / Date:
5	TP03_0.1	27/01/2021	S		1	X				Connote / Courier:
6	TP03_0.5	27/01/2021	S		1			X	X	WO No:
7	TP04_0.1	27/01/2021	S		1	X				Attached By PO / Internal Sheet:
8	TP04_0.5	27/01/2021	S		1		X			
9	TP05_0.1	27/01/2021	S		1	X				
10	TP05_0.5	27/01/2021	S		1			X	X	
11	TP06_0.1	27/01/2021	S		1	X				
12	TP06_0.5	27/01/2021	S		1		X			
13	TP07_0.1	27/01/2021	S		1	X				
14	TP07_0.5	27/01/2021	S		1			X	X	
TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag

Environmental Division
Sydney
Work Order Reference
ES2102692



Telephone - 61-2-8784 8555



CHAIN OF CUSTODY

ALS Laboratory, please tick →

Sydney 277 Woodlark Rd, Greenfield NSW 2114
Ph: 02 8794 0000 E: sydney@als.com.au
Newcastle 51 Princess St, Newcastle NSW 1608
Ph: 02 4958 9433 E: newcastle@als.com.au

Brisbane 37 Sharn St, Brisbane QLD 4005
Ph: 07 3243 1222 E: brisbane@als.com.au
Townsville 14 E. Esplanade, Townsville QLD 4810
Ph: 07 4795 0000 E: townsville@als.com.au

Melbourne 247 Wertheim St, Springvale VIC 3171
Ph: 03 9497 0000 E: melbourne@als.com.au
Adelaide 211 Rundle St, Adelaide SA 5000
Ph: 08 8359 0000 E: adelaide@als.com.au

CLIENT:	EP1934	TURNAROUND REQUIREMENTS:	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)	
OFFICE:	3/19 Bolton St Newcastle	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No <u>N/A</u>
PROJECT:	Mandalong Road	ALS QUOTE NO.:	SY-497-20 v2	Free Ice / frozen ice bricks present upon receipt?	Yes No <u>N/A</u>
ORDER NUMBER:				Random Sample Temperature on Receipt:	7.4 °C
PROJECT MANAGER:	SL	CONTACT PH:	0403768722	Other comment:	
SAMPLER:		SAMPLER MOBILE:		RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):		DATE/TIME:	DATE/TIME:
Email Reports to (will default to PM if no other addresses are listed)					
Email Invoice to (will default to PM if no other addresses are listed)					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unless bottle required) or Dissolved (if three bottles required)								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	Hold	S-12	S-2					Comments on likely contaminant levels, dilutions, or samples requiring specific GC analysis etc.
15	TP08_0.1	27/01/2021	s		1	X								
16	TP08_0.5	27/01/2021	s		1		X							
17	TP09_0.1	27/01/2021	s		1	X								
18	TP09_0.5	27/01/2021	s		1			X	X					
19	TP10_0.1	27/01/2021	s		1	X								
20	TP10_0.5	27/01/2021	s		1		X							
21	TP11_0.1	27/01/2021	s		1	X								
22	TP11_0.5	27/01/2021	s		1			X	X					
23	TP12_0.1	27/01/2021	s		1	X								
24	TP12_0.5	27/01/2021	s		1		X							
25	TP13_0.1	27/01/2021	s		1	X								
26	TP013_0.5	27/01/2021	s		1			X	X					
27	TP14_0.1	27/01/2021	s		1	X								
28	TP14_0.5	27/01/2021	s		1		X							
TOTAL														

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag



CHAIN OF CUSTODY

ALS Laboratory please tick →

1 Sydney 277 Wondewick Rd, Lindfield NSW 1585
Ph 02 9370 0555 E sample@sydney.als.com.au

3 Newcastle 5 Broadmead Dr, Mereworth NSW 2261
Ph 02 4906 6433 E sample@newcastle.als.com.au

7 Brisbane 32 Turpin St, St Albans QLD 4058
Ph 07 3241 7222 E sample@brisbane.als.com.au

11 Townsville 14-15 Forester Ct, Tully QLD 4856
Ph 07 4705 0500 E sample@townsville.als.com.au

14 Melbourne 104 Snowdon Pl, Springvale VIC 3171
Ph 03 8549 0000 E sample@melbourne.als.com.au

17 Adelaide 203 Herring Rd, Mawson SA 5095
Ph 08 8253 1890 E sample@adelaide.als.com.au

CLIENT:	EP1934	TURNAROUND REQUIREMENTS:	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)	
OFFICE:	3/19 Bolton St Newcastle	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No N/A
PROJECT:	Mandalong Road	ALS QUOTE NO.:	SY-497-20 v2	Free ice/frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER:				Random Sample Temperature on Receipt:	7.4 °C
PROJECT MANAGER:	SL	CONTACT PH:	0403768722	Other comment:	
SAMPLER:		SAMPLER MOBILE:		RECEIVED BY:	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):		RELINQUISHED BY:	
Email Reports to (will default to PM if no other addresses are listed):				DATE/TIME:	
Email Invoice to (will default to PM if no other addresses are listed):				DATE/TIME:	

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)					Additional Information	
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	Hold	Faecal Coliform and E. Coll	S-12	S-2	Comments on likely contaminant levels, dilutions, or samples requiring specific GC analysis etc.	
29	TP15_0.1	27/01/2021	s		1	X						
30	TP15_0.5	27/01/2021	s		1				X	X		
31	TP15_0.1	27/01/2021	s		1	X						
32	TP16_0.5	27/01/2021	s		1		X					
33	TP16_0.1	27/01/2021	s		1	X						
34	TP18_0.5	27/01/2021	s		1				X	X		
35	TP18_0.1	27/01/2021	s		1	X						
36	TP19_0.5	27/01/2021	s		1		X					
37	TP19_0.1	27/01/2021	s		1	X						
38	TP20_0.5	27/01/2021	s		1				X	X		
39	TP20_0.1	27/01/2021	s		1	X						
40	TP21_0.5	27/01/2021	s		1		X					
41	TP21_0.1	27/01/2021	s		1	X						
42	Miro_01	27/01/2021	s		1			X				
TOTAL												

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved; Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag



CHAIN OF CUSTODY

ALS Laboratory please tick →

Sydney 2/7 Windsor Rd, Sydney NSW 2115
Ph: 02 8754 8550 E: samples@sydney.als.com.au

Brisbane 32 Strand St, St Leonards QLD 4055
Ph: 07 3243 7222 E: samples@brisbane.als.com.au

Newcastle 5 Hargrave Rd, Newcastle NSW 2304
Ph: 02 4900 6434 E: samples@newcastle.als.com.au

Melbourne 250 Warralla Rd, Springvale VIC 3171
Ph: 03 8545 0600 E: samples@melbourne.als.com.au

Adelaide 2-1 Hurrell Rd, Prospect SA 5082
Ph: 08 8269 0600 E: adelaide@als.com.au

CLIENT:	EP1934	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date):		FOR LABORATORY USE ONLY (Circle)	
OFFICE:	3/19 Bolton St Newcastle	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)		Custody Seal Intact? Yes No <u>N/A</u>	
PROJECT:	Mandalong Road	ALS QUOTE NO.:	SY-497-20 v2	Free ice/frozen ice bricks present upon receipt? Yes No <u>N/A</u>	
ORDER NUMBER:				Random Sample Temperature on Receipt: <u>7.4</u> °C	
PROJECT MANAGER: SL	CONTACT PH: 0403768722			Other comment:	
SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
Email Reports to (will default to PM if no other addresses are listed):					
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)										Additional Information	
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE <i>(refer to codes below)</i>	TOTAL BOTTLES	S-16	Faecal Coliform and E. Coli										Comments on likely contaminant levels, dilutions, or samples requiring specific GC analysis etc.
43	Micro_02	27/01/2021	s		1		X										
44	Micro_03	27/01/2021	s		1		X										
45	Micro_04	27/01/2021	s		1		X										
46	Micro_05	27/01/2021	s		1		X										
47	Micro_06	27/01/2021	s		1		X										
48	BH01_0.05	27/01/2021	s		1	X											
49	BH02_0.05	27/01/2021	s		1	X											
50	BH03_0.05	27/01/2021	s		1	X											
51	BH04_0.05	27/01/2021	s		1	X											
52	BH05_0.05	27/01/2021	s		1	X											
53	BH06_0.05	27/01/2021	s		1	X											
54	BH07_0.05	27/01/2021	s		1	X											
55	BH08_0.05	27/01/2021	s		1	X											
56	BH09_0.6	27/01/2021	s		1	X											
TOTAL																	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass.
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag



CHAIN OF CUSTODY

ALS Laboratory: please tick →

1 Sydney 277 Woodpoint Rd, Sydney NSW 2144
Ph: 02 9254 4000 F: 02 9254 4001
2 Newcastle 300 Waratah St, Newcastle NSW 2300
Ph: 02 9490 1111 F: 02 9490 1112

3 Brisbane 12 Gregory St, Brisbane QLD 4000
Ph: 07 3251 3333 F: 07 3251 3334
4 Melbourne 211 Victoria St, Melbourne VIC 3000
Ph: 03 9594 9600 F: 03 9594 9601

5 Adelaide 211 Victoria St, Adelaide SA 5000
Ph: 08 8251 3333 F: 08 8251 3334
6 Perth 211 Victoria St, Perth WA 6000
Ph: 08 9490 1111 F: 08 9490 1112

CLIENT:	EP1934	TURNAROUND REQUIREMENTS:	☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)	
OFFICE:	3/19 Bolton St Newcastle	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No
PROJECT:	Mandalong Road	ALS QUOTE NO.:	SY-497-20 v2	Free Ice / Frozen ice bricks present upon receipt?	Yes No
ORDER NUMBER:				Random Sample Temperature on Receipt:	7.4 °C
PROJECT MANAGER:	SL	CONTACT PH:	0403768722	Other comment:	
SAMPLER:		SAMPLER MOBILE:		RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):		DATE/TIME:	DATE/TIME:
Email Reports to (will default to PM if no other addresses are listed)				DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed)				DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required)					Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	Hold	P-22	EA200F	EA200B	
57	BH09_1.0	27/01/2021	S		1		X				
58	NEPM Screen 01	27/01/2021	S		1			X			
59	NEPM Screen 02	27/01/2021	S		1			X			
60	ACM_001	27/01/2021	S		1				X		
61	ACM_002	27/01/2021	S		1				X		
62	ACM_003	27/01/2021	S		1				X		
63	ACM_004	27/01/2021	S		1				X		
64	ACM_005	27/01/2021	S		1				X		
65	ACM_ID_01	27/01/2021	S		1					X	
66	ACM_ID_02	27/01/2021	S		1					X	
	QC01	27/01/2021	S		1	X					please send to Eurofins for analysis
67	QC02	27/01/2021	S		1	X					
	QC03	27/01/2021	S		1	X					please send to Eurofins for analysis
68	QC04	27/01/2021	S		1	X					
TOTAL											

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag

CHAIN OF CUSTODY

ALS Laboratory: please tick →

¹ Newcastle University, Newcastle, UK; ² Department of Health, Education and Social Policy, University of York, York, UK

Dr. Gabriele Di Lorenzo, Italian Civil Servant
 Tel: +39 02 7241 7222 E: gabriele.di.lorenzo@stc-events.com

CLIENT:	EP1934	TURNAROUND REQUIREMENTS:	☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)		FOR LABORATORY USE ONLY (Circle) Custody Seal intact? Yes No NA	
OFFICE:	3/19 Bolton St Newcastle		Non Standard or urgent TAT (List due date):		Free ice / frozen ice bricks present upon receipt? Yes No NA	
PROJECT:	Mandalong Road	ALS QUOTE NO.:	SY-497-20 v2	COC SEQUENCE NUMBER (Circle)	Random Sample Temperature on Receipt: 7.4 °C	
ORDER NUMBER:				COC 1 2 3 4 5 6 7		
PROJECT MANAGER:	SL	CONTACT PH:	0403768722	OF: 1 2 3 4 5 6 7	Other comment:	
SAMPLER:		SAMPLER MOBILE:		RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):		DATE/TIME	DATE/TIME	DATE/TIME
Email Reports to (will default to PM if no other addresses are listed)				20/1/21	20/1/21 10:54	
Email Invoice to (will default to PM if no other addresses are listed)						

[illegible]

CERTIFICATE OF ANALYSIS

Work Order : **EM2100655**
Client : **EP Risk Management**
Contact : **MR STUART LORD**
Address : **109/283 Alfred St**
 NORTH SYDNEY NSW 2060
Telephone : ----
Project : **EP1934**
Order number : **EP1934**
C-O-C number : ----
Sampler : **SL**
Site : ----
Quote number : **EN/222**
No. of samples received : **2**
No. of samples analysed : **2**

Page : 1 of 13
Laboratory : Environmental Division Melbourne
Contact : Shirley LeCornu
Address : 4 Westall Rd Springvale VIC Australia 3171
Telephone : +6138549 9630
Date Samples Received : 19-Jan-2021 08:55
Date Analysis Commenced : 20-Jan-2021
Issue Date : 27-Jan-2021 13:37



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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Samantha Smith	Laboratory Coordinator	WRG Subcontracting, Springvale, VIC



General Comments

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

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

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

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

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact 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.

- EG020-F: Metals for EM2100655 #1 has been confirmed by re-preparation and re-analysis.
- 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.
- 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.
- EP131A: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane 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.
- EP132: Where reported, Total PAH reported as the sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QS102	----	----	----	----
Sampling date / time				14-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2100655-002	-----	-----	-----	-----
Result				----	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	28.0	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	7	----	----	----	----
Copper	7440-50-8	5	mg/kg	<5	----	----	----	----
Lead	7439-92-1	5	mg/kg	8	----	----	----	----
Nickel	7440-02-0	2	mg/kg	<2	----	----	----	----
Zinc	7440-66-6	5	mg/kg	<5	----	----	----	----
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	----	----	----	----
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	----	----	----	----
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	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QS102	----	----	----	----
Sampling date / time					14-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2100655-002	-----	-----	-----	-----
Result						----	----	----	----
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	----	----	----	----
^ >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	----	----	----	----
EP130A: Organophosphorus Pesticides (Ultra-trace)									
Bromophos-ethyl	4824-78-6	10	µg/kg		<10	----	----	----	----
Carbophenothion	786-19-6	10	µg/kg		<10	----	----	----	----
Chlorfenvinphos (E)	18708-86-6	10.0	µg/kg		<10.0	----	----	----	----
Chlorfenvinphos (Z)	18708-87-7	10	µg/kg		<10	----	----	----	----
Chlorpyrifos	2921-88-2	10	µg/kg		<10	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	10	µg/kg		<10	----	----	----	----
Demeton-S-methyl	919-86-8	10	µg/kg		<10	----	----	----	----
Diazinon	333-41-5	10	µg/kg		<10	----	----	----	----
Dichlorvos	62-73-7	10	µg/kg		<10	----	----	----	----
Dimethoate	60-51-5	10	µg/kg		<10	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				QS102	----	----	----	----
Sampling date / time				14-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2100655-002	-----	-----	-----	-----
Result				----	----	----	----	----

EP130A: Organophosphorus Pesticides (Ultra-trace) - Continued

Ethion	563-12-2	10	µg/kg	<10	----	----	----	----
Fenamiphos	22224-92-6	10	µg/kg	<10	----	----	----	----
Fenthion	55-38-9	10	µg/kg	<10	----	----	----	----
Malathion	121-75-5	10	µg/kg	<10	----	----	----	----
Azinphos Methyl	86-50-0	10	µg/kg	<10	----	----	----	----
Monocrotophos	6923-22-4	10	µg/kg	<10	----	----	----	----
Parathion	56-38-2	10	µg/kg	<10	----	----	----	----
Parathion-methyl	298-00-0	10	µg/kg	<10	----	----	----	----
Pirimphos-ethyl	23505-41-1	10	µg/kg	<10	----	----	----	----
Prothiofos	34643-46-4	10	µg/kg	<10	----	----	----	----

EP131A: Organochlorine Pesticides

Aldrin	309-00-2	0.50	µg/kg	<0.50	----	----	----	----
alpha-BHC	319-84-6	0.50	µg/kg	<0.50	----	----	----	----
beta-BHC	319-85-7	0.50	µg/kg	<0.50	----	----	----	----
delta-BHC	319-86-8	0.50	µg/kg	<0.50	----	----	----	----
4,4'-DDD	72-54-8	0.50	µg/kg	<0.50	----	----	----	----
4,4'-DDE	72-55-9	0.50	µg/kg	<0.50	----	----	----	----
4,4'-DDT	50-29-3	0.50	µg/kg	<0.50	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.50	µg/kg	<0.50	----	----	----	----
Dieldrin	60-57-1	0.50	µg/kg	<0.50	----	----	----	----
alpha-Endosulfan	959-98-8	0.50	µg/kg	<0.50	----	----	----	----
beta-Endosulfan	33213-65-9	0.50	µg/kg	<0.50	----	----	----	----
Endosulfan sulfate	1031-07-8	0.50	µg/kg	<0.50	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.50	µg/kg	<0.50	----	----	----	----
Endrin	72-20-8	0.50	µg/kg	<0.50	----	----	----	----
Endrin aldehyde	7421-93-4	0.50	µg/kg	<0.50	----	----	----	----
Endrin ketone	53494-70-5	0.50	µg/kg	<0.50	----	----	----	----
Heptachlor	76-44-8	0.50	µg/kg	<0.50	----	----	----	----
Heptachlor epoxide	1024-57-3	0.50	µg/kg	<0.50	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.50	µg/kg	<0.50	----	----	----	----
gamma-BHC	58-89-9	0.25	µg/kg	<0.25	----	----	----	----
Methoxychlor	72-43-5	0.50	µg/kg	<0.50	----	----	----	----
cis-Chlordane	5103-71-9	0.50	µg/kg	<0.50	----	----	----	----
trans-Chlordane	5103-74-2	0.50	µg/kg	<0.50	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QS102	----	----	----	----
Sampling date / time				14-Jan-2021 00:00	----	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2100655-002	-----	-----	-----	-----	-----
Result				----	----	----	----	----	----
EP131A: Organochlorine Pesticides - Continued									
^ Total Chlordane (sum)	----	0.50	µg/kg	<0.50	----	----	----	----	----
Oxychlordane	27304-13-8	0.50	µg/kg	<0.50	----	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.50	µg/kg	<0.50	----	----	----	----	----
MM869: E.coli and Thermotolerant Coliforms by MPN									
Faecal Coliforms by MPN	----	10	MPN/g	<14	----	----	----	----	----
E.coli by MPN	----	10	MPN/g	<14	----	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	92.5	----	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	85.0	----	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	87.8	----	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%	65.1	----	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	102	----	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	108	----	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	107	----	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	59.9	----	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	58.9	----	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	75.3	----	----	----	----	----
EP130S: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	10	%	49.6	----	----	----	----	----
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.50	%	58.3	----	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QW101	----	----	----	----
Sampling date / time					14-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2100655-001	-----	-----	-----	-----
					Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		0.003	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		0.008	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L		<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4,4'-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L		<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	----	----	----	----
4,4'-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	----	----	----	----
4,4'-DDT	50-29-3	2.0	µg/L		<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L		<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L		<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.5	µg/L		<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Sample ID

				QW101	----	----	----	----
Sampling date / time				14-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2100655-001	-----	-----	-----	-----
Result				----	----	----	----	----

EP068A: Organochlorine Pesticides (OC) - Continued

EP068B: Organophosphorus Pesticides (OP)

Dichlorvos	62-73-7	0.5	µg/L	<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L	<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L	<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	----	----	----	----

EP075(SIM)B: Polynuclear Aromatic Hydrocarbons

Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2	205-82-3	1.0	µg/L	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9		1.0	µg/L	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

				QW101	----	----	----	----
Sampling date / time				14-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2100655-001	-----	-----	-----	-----
Result				----	----	----	----	----

EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued

Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----

EP080/071: Total Petroleum Hydrocarbons

C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----

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	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----

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	----	----	----	----

EP132B: Polynuclear Aromatic Hydrocarbons

3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	----	----	----	----
2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Sample ID

				QW101	----	----	----	----
Sampling date / time				14-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2100655-001	-----	-----	-----	-----
Result				----	----	----	----	----

EP132B: Polynuclear Aromatic Hydrocarbons - Continued

Acenaphthene	83-32-9	0.1	µg/L	<0.1	----	----	----	----
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	----	----	----	----
Anthracene	120-12-7	0.1	µg/L	<0.1	----	----	----	----
Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	----	----	----	----
Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	----	----	----	----
Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	----	----	----	----
Chrysene	218-01-9	0.1	µg/L	<0.1	----	----	----	----
Coronene	191-07-1	0.1	µg/L	<0.1	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	----	----	----	----
Fluoranthene	206-44-0	0.1	µg/L	<0.1	----	----	----	----
Fluorene	86-73-7	0.1	µg/L	<0.1	----	----	----	----
Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	----	----	----	----
Naphthalene	91-20-3	0.1	µg/L	<0.1	----	----	----	----
Perylene	198-55-0	0.1	µg/L	<0.1	----	----	----	----
Phenanthrene	85-01-8	0.1	µg/L	<0.1	----	----	----	----
Pyrene	129-00-0	0.1	µg/L	<0.1	----	----	----	----
^ Sum of PAHs	----	0.05	µg/L	<0.05	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.05	µg/L	<0.05	----	----	----	----

MM301: E.coli & Faecal Coliforms MPN

<i>Escherichia coli</i>	----	1	MPN/100mL	<10	----	----	----	----
Faecal Coliforms	----	1	MPN/100mL	<10	----	----	----	----

EP068S: Organochlorine Pesticide Surrogate

Dibromo-DDE	21655-73-2	0.5	%	70.8	----	----	----	----
-------------	------------	-----	---	-------------	------	------	------	------

EP068T: Organophosphorus Pesticide Surrogate

DEF	78-48-8	0.5	%	73.7	----	----	----	----
-----	---------	-----	---	-------------	------	------	------	------

EP075(SIM)S: Phenolic Compound Surrogates

Phenol-d6	13127-88-3	1.0	%	12.9	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	53.4	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%	81.8	----	----	----	----

EP075(SIM)T: PAH Surrogates

2-Fluorobiphenyl	321-60-8	1.0	%	62.4	----	----	----	----
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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QW101	----	----	----	----
				Sampling date / time	14-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2100655-001	-----	-----	-----	-----
				Result	----	----	----	----	----
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	1.0	%		69.6	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		66.7	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		100	----	----	----	----
Toluene-D8	2037-26-5	2	%		105	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		101	----	----	----	----
EP132T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		55.7	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%		56.5	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		52.9	----	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	36	140
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2,4,6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP130S: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	14	102
EP131S: OC Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	119

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	117
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	51	127
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	51
2-Chlorophenol-D4	93951-73-6	30	114
2,4,6-Tribromophenol	118-79-6	26	133
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	35	127
Anthracene-d10	1719-06-8	44	122
4-Terphenyl-d14	1718-51-0	44	124
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP132T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	43	135

Page : 13 of 13
Work Order : EM2100655
Client : EP Risk Management
Project : EP1934



Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP132T: Base/Neutral Extractable Surrogates - Continued			
Anthracene-d10	1719-06-8	48	138
4-Terphenyl-d14	1718-51-0	48	144

QUALITY CONTROL REPORT

Work Order	: EM2100655	Page	: 1 of 13
Client	: EP Risk Management	Laboratory	: Environmental Division Melbourne
Contact	: MR STUART LORD	Contact	: Shirley LeCornu
Address	: 109/283 Alfred St NORTH SYDNEY NSW 2060	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9630
Project	: EP1934	Date Samples Received	: 19-Jan-2021
Order number	: EP1934	Date Analysis Commenced	: 20-Jan-2021
C-O-C number	: ----	Issue Date	: 27-Jan-2021
Sampler	: SL		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 2		
No. of samples analysed	: 2		



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.

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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

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

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3474166)									
EM2100513-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	7	8	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	5	18.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	9	9	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	7	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	22	24	7.71	No Limit
EM2100725-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	32	36	12.1	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	18	19	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	14	14	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	12	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	17	20	18.3	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3475090)									
EM2100627-001	Anonymous	EA055: Moisture Content	----	0.1	%	75.5	76.2	0.930	0% - 20%
EM2100667-010	Anonymous	EA055: Moisture Content	----	0.1	%	14.9	12.3	19.3	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3474165)									
EM2100513-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM2100725-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3472917)									
EM2100722-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3472919)									
EM2100768-031	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	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 (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3472919) - continued									
EM2100768-031	Anonymous	EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM2100722-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3472902)									
EM2100655-002	QS102	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EM2100768-031	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3472918)									
EM2100768-031	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	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 (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3472918) - continued									
EM2100768-031	Anonymous	EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	0.00	No Limit
EM2100722-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
		EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3472902)									
EM2100655-002	QS102	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EM2100768-031	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3472918)									
EM2100768-031	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
		EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	0.00	No Limit
EM2100722-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
		EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 3472902)									
EM2100655-002	QS102	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EM2100768-031	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	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 (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3472295)									
EM2100678-007	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.017	0.017	0.00	0% - 50%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3472295) - continued									
EM2100678-007	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.011	0.011	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.005	0.00	No Limit
EM2100571-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.008	0.007	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.016	0.016	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.016	0.017	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 3472297)									
EM2100723-007	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM2100571-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3470159)									
EM2100653-005	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	140	150	9.00	No Limit
EM2100642-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	80	80	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3470159)									
EM2100653-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	110	120	0.00	No Limit
EM2100642-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	120	120	0.00	No Limit
EP080: BTEXN (QC Lot: 3470159)									
EM2100653-005	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM2100642-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	3	3	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (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 Spike (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**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3474166)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	99.8	70.0	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	58.1	50.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	106	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	108	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	92.6	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	99.7	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	79.7	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3474165)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.5 mg/kg	117	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3472917)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	106	68.0	133
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3472919)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	102	85.7	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	101	81.0	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	99.6	83.6	120
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	97.7	81.3	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	99.4	79.4	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	104	81.7	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	101	78.3	124
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	103	79.9	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	98.4	76.9	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	102	80.9	130
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	3 mg/kg	84.8	70.0	121
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	102	80.4	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	89.9	70.2	123
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	88.2	67.9	122
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	88.2	65.8	123
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	91.3	65.8	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3472902)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	36 mg/kg	111	58.6	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3472918)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	900 mg/kg	92.6	75.0	128
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	3030 mg/kg	97.8	82.0	123



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3472918) - continued								
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	1520 mg/kg	95.0	82.4	121
EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3472902)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	108	59.3	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3472918)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	1160 mg/kg	103	77.0	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	4020 mg/kg	93.4	81.5	120
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	280 mg/kg	97.1	73.3	137
EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN (QCLot: 3472902)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	99.9	61.6	117
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	111	65.8	125
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	110	65.8	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	121	64.8	134
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	124	68.7	132
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	95.3	61.8	123
EP130A: Organophosphorus Pesticides (Ultra-trace) (QCLot: 3475958)								
EP130: Bromophos-ethyl	4824-78-6	10	µg/kg	<10	50 µg/kg	95.6	49.0	117
EP130: Carbophenothion	786-19-6	10	µg/kg	<10	50 µg/kg	97.1	54.0	104
EP130: Chlorfenvinphos (E)	18708-86-6	10	µg/kg	<10.0	5 µg/kg	79.4	48.0	156
EP130: Chlorfenvinphos (Z)	18708-87-7	10	µg/kg	<10	50 µg/kg	91.3	53.0	119
EP130: Chlorpyrifos	2921-88-2	10	µg/kg	<10	50 µg/kg	82.6	54.0	112
EP130: Chlorpyrifos-methyl	5598-13-0	10	µg/kg	<10	50 µg/kg	94.8	52.0	108
EP130: Demeton-S-methyl	919-86-8	10	µg/kg	<10	50 µg/kg	91.8	51.0	109
EP130: Diazinon	333-41-5	10	µg/kg	<10	50 µg/kg	88.6	57.0	121
EP130: Dichlorvos	62-73-7	10	µg/kg	<10	50 µg/kg	89.0	48.0	104
EP130: Dimethoate	60-51-5	10	µg/kg	<10	50 µg/kg	77.0	52.0	120
EP130: Ethion	563-12-2	10	µg/kg	<10	50 µg/kg	90.6	51.0	121
EP130: Fenamiphos	22224-92-6	10	µg/kg	<10	50 µg/kg	80.3	50.0	120
EP130: Fenthion	55-38-9	10	µg/kg	<10	50 µg/kg	81.0	48.0	112
EP130: Malathion	121-75-5	10	µg/kg	<10	50 µg/kg	81.5	51.0	121
EP130: Azinphos Methyl	86-50-0	10	µg/kg	<10	50 µg/kg	86.6	45.0	127
EP130: Monocrotophos	6923-22-4	10	µg/kg	<10	50 µg/kg	80.1	48.0	128
EP130: Parathion	56-38-2	10	µg/kg	<10	50 µg/kg	79.2	49.0	125
EP130: Parathion-methyl	298-00-0	10	µg/kg	<10	50 µg/kg	93.0	51.0	119
EP130: Pirimphos-ethyl	23505-41-1	10	µg/kg	<10	50 µg/kg	94.0	48.0	120
EP130: Prothiofos	34643-46-4	10	µg/kg	<10	50 µg/kg	87.8	51.0	117



Sub-Matrix: **SOIL**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit						
EP131A: Organochlorine Pesticides (QCLot: 3475959)								
EP131A: Aldrin	309-00-2	0.5	µg/kg	<0.50	5 µg/kg	60.2	38.0	139
EP131A: alpha-BHC	319-84-6	0.5	µg/kg	<0.50	5 µg/kg	46.4	17.6	136
EP131A: beta-BHC	319-85-7	0.5	µg/kg	<0.50	5 µg/kg	42.6	30.5	131
EP131A: delta-BHC	319-86-8	0.5	µg/kg	<0.50	5 µg/kg	53.2	37.0	140
EP131A: 4,4'-DDD	72-54-8	0.5	µg/kg	<0.50	5 µg/kg	66.6	25.9	141
EP131A: 4,4'-DDE	72-55-9	0.5	µg/kg	<0.50	5 µg/kg	62.6	35.0	129
EP131A: 4,4'-DDT	50-29-3	0.5	µg/kg	<0.50	5 µg/kg	61.5	23.4	138
EP131A: Sum of DDD + DDE + DDT	72-54-8/72-5-9/50-2	0.5	µg/kg	<0.50	----	----	----	----
EP131A: Dieldrin	60-57-1	0.5	µg/kg	<0.50	5 µg/kg	69.7	30.2	140
EP131A: alpha-Endosulfan	959-98-8	0.5	µg/kg	<0.50	5 µg/kg	59.4	38.0	140
EP131A: beta-Endosulfan	33213-65-9	0.5	µg/kg	<0.50	5 µg/kg	67.1	32.0	152
EP131A: Endosulfan sulfate	1031-07-8	0.5	µg/kg	<0.50	5 µg/kg	59.4	36.0	155
EP131A: Endosulfan (sum)	115-29-7	0.5	µg/kg	<0.50	----	----	----	----
EP131A: Endrin	72-20-8	0.5	µg/kg	<0.50	5 µg/kg	83.2	25.8	158
EP131A: Endrin aldehyde	7421-93-4	0.5	µg/kg	<0.50	5 µg/kg	52.6	20.1	118
EP131A: Endrin ketone	53494-70-5	0.5	µg/kg	<0.50	5 µg/kg	63.1	13.4	135
EP131A: Heptachlor	76-44-8	0.5	µg/kg	<0.50	5 µg/kg	54.3	39.0	155
EP131A: Heptachlor epoxide	1024-57-3	0.5	µg/kg	<0.50	5 µg/kg	62.8	34.0	148
EP131A: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/kg	<0.50	5 µg/kg	50.0	26.1	152
EP131A: gamma-BHC	58-89-9	0.25	µg/kg	<0.25	5 µg/kg	45.9	31.2	137
EP131A: Methoxychlor	72-43-5	0.5	µg/kg	<0.50	5 µg/kg	63.7	36.0	152
EP131A: cis-Chlordane	5103-71-9	0.25	µg/kg	<0.25	5 µg/kg	68.5	36.0	142
EP131A: trans-Chlordane	5103-74-2	0.25	µg/kg	<0.25	5 µg/kg	66.8	29.5	138
EP131A: Total Chlordane (sum)	----	0.25	µg/kg	<0.25	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit						
EG020F: Dissolved Metals by ICP-MS (QCLot: 3472295)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	104	89.0	111
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.8	83.5	111
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.7	83.2	109
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.4	83.1	107
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.9	84.6	108
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	84.3	110
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	86.3	112
EG035F: Dissolved Mercury by FIMS (QCLot: 3472297)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.0	71.6	116



Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result			Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3469455)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	2.5 µg/L	87.6	50.6	119
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	2.5 µg/L	81.3	44.2	117
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	2.5 µg/L	87.2	53.7	119
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	2.5 µg/L	87.7	47.7	117
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	2.5 µg/L	86.0	52.5	117
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	2.5 µg/L	86.1	46.9	118
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	2.5 µg/L	84.4	48.0	115
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	2.5 µg/L	87.0	51.1	119
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	2.5 µg/L	82.6	48.4	120
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	2.5 µg/L	84.2	50.1	122
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	2.5 µg/L	86.7	51.0	118
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	2.5 µg/L	86.3	48.4	116
EP068: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	2.5 µg/L	83.8	49.3	116
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	2.5 µg/L	89.8	47.1	130
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	2.5 µg/L	89.3	51.6	118
EP068: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	2.5 µg/L	86.7	48.6	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	2.5 µg/L	63.4	49.4	128
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	2.5 µg/L	91.7	49.1	123
EP068: 4,4'-DDT	50-29-3	2	µg/L	<2.0	2.5 µg/L	91.3	45.6	126
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	2.5 µg/L	89.4	52.8	117
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	2.5 µg/L	90.7	47.1	126
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3469455)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	2.5 µg/L	93.8	47.4	133
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	2.5 µg/L	92.3	46.4	129
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	2.5 µg/L	40.8	10.0	42.9
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	2.5 µg/L	86.9	41.7	131
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	2.5 µg/L	89.1	50.5	122
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	2.5 µg/L	89.0	52.4	123
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	2.5 µg/L	89.7	52.0	132
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	2.5 µg/L	93.7	51.8	133
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	2.5 µg/L	89.4	52.3	123
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	2.5 µg/L	89.4	48.7	122
EP068: Parathion	56-38-2	2	µg/L	<2.0	2.5 µg/L	90.8	49.5	136
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	2.5 µg/L	89.4	50.4	123
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	2.5 µg/L	93.0	50.9	131
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	2.5 µg/L	87.4	47.5	126
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	2.5 µg/L	104	46.5	138
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	2.5 µg/L	89.3	49.2	119
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	2.5 µg/L	91.0	50.0	126



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit						
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3469455) - continued								
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	2.5 µg/L	95.4	50.0	131
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	2.5 µg/L	106	41.7	147
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3469451)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	102	42.8	114
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	107	48.6	119
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	106	47.0	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	107	49.5	119
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	111	49.4	121
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	109	48.4	122
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	118	50.3	124
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	118	50.0	126
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	111	49.4	127
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	112	48.7	126
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	111	54.5	134
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	114	56.1	134
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	121	55.6	135
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	112	54.4	126
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	111	54.5	126
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	113	54.4	126
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3469452)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	4600 µg/L	107	44.2	140
EP071: C15 - C28 Fraction	----	100	µg/L	<100	16100 µg/L	107	46.9	127
EP071: C29 - C36 Fraction	----	50	µg/L	<50	8130 µg/L	108	47.4	128
EP071: C10 - C36 Fraction (sum)	----	----	µg/L	----	28830 µg/L	107	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3470159)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	108	66.2	134
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3469452)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	6070 µg/L	105	43.0	127
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	21200 µg/L	108	48.6	129
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	114	42.2	133
EP071: >C10 - C40 Fraction (sum)	----	----	µg/L	----	28770 µg/L	108	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3470159)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	104	66.2	132
EP080: BTEXN (QCLot: 3470159)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	94.8	68.8	127
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	108	72.9	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	107	71.7	130



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit	Result					
EP080: BTEXN (QCLot: 3470159) - continued								
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	117	72.3	136
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	117	75.9	134
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	93.4	68.3	131
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3472641)								
EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	2 µg/L	77.4	60.0	120
EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	2 µg/L	60.9	59.0	123
EP132: 7,12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	2 µg/L	86.9	36.0	144
EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	2 µg/L	68.7	64.0	122
EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	2 µg/L	83.3	64.0	126
EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	2 µg/L	69.3	65.0	127
EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	2 µg/L	74.4	64.0	130
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	76.8	64.0	126
EP132: Benzo(b+j)fluoranthene	205-99-2	0.1	µg/L	<0.1	2 µg/L	79.6	62.0	126
	205-82-3							
EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	2 µg/L	73.6	62.0	126
EP132: Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	2 µg/L	78.9	56.0	126
EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	2 µg/L	77.2	68.0	130
EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	2 µg/L	75.0	66.0	130
EP132: Coronene	191-07-1	0.1	µg/L	<0.1	2 µg/L	69.6	35.0	133
EP132: Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	2 µg/L	78.2	58.0	128
EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	2 µg/L	95.8	65.0	127
EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	2 µg/L	74.9	64.0	124
EP132: Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	2 µg/L	79.1	57.0	127
EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	2 µg/L	64.2	54.0	128
EP132: Perylene	198-55-0	0.1	µg/L	<0.1	2 µg/L	77.5	66.0	130
EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	2 µg/L	67.7	65.0	129
EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	2 µg/L	94.2	66.0	128

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				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%)	Recovery Limits (%)	
					MS	Low	High
Sample ID	Method: Compound	CAS Number					
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3474166)							
EM2100513-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	79.7	116



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3474166) - continued							
EM2100513-002	Anonymous	EG005T: Chromium	7440-47-3	50 mg/kg	99.9	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	100	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	102	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	99.9	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	102	80.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3474165)							
EM2100513-002	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	103	76.0	116
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3472917)							
EM2100722-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	104	63.2	144
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3472919)							
EM2100768-023	Anonymous	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	102	77.2	116
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	105	65.5	136
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3472902)							
EM2100722-001	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	75.3	33.4	124
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3472918)							
EM2100725-001	Anonymous	EP071: C10 - C14 Fraction	----	900 mg/kg	92.8	71.2	125
		EP071: C15 - C28 Fraction	----	3030 mg/kg	97.5	75.6	122
		EP071: C29 - C36 Fraction	----	1520 mg/kg	94.7	78.0	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3472902)							
EM2100722-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	71.6	30.8	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3472918)							
EM2100725-001	Anonymous	EP071: >C10 - C16 Fraction	----	1160 mg/kg	102	72.2	128
		EP071: >C16 - C34 Fraction	----	4020 mg/kg	93.1	76.5	119
		EP071: >C34 - C40 Fraction	----	280 mg/kg	97.1	66.8	138
EP080: BTEXN (QCLot: 3472902)							
EM2100722-001	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	74.1	54.4	127
		EP080: Toluene	108-88-3	2 mg/kg	82.8	57.1	131

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3472295)							
EM2100571-002	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	99.4	76.6	124
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	95.6	74.6	118
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	100	71.0	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	98.3	76.0	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	101	75.0	133

Page : 13 of 13
 Work Order : EM2100655
 Client : EP Risk Management
 Project : EP1934



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3472295) - continued							
EM2100571-002	Anonymous	EG020A-F: Nickel	7440-02-0	0.2 mg/L	99.1	73.0	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	101	75.0	131
EG035F: Dissolved Mercury by FIMS (QCLot: 3472297)							
EM2100571-004	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	92.8	70.0	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3470159)							
EM2100642-003	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	93.6	33.9	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3470159)							
EM2100642-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	92.7	34.0	122
EP080: BTEXN (QCLot: 3470159)							
EM2100642-003	Anonymous	EP080: Benzene	71-43-2	20 µg/L	104	56.3	133
		EP080: Toluene	108-88-3	20 µg/L	106	60.4	132

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2100655	Page	: 1 of 10
Client	: EP Risk Management	Laboratory	: Environmental Division Melbourne
Contact	: MR STUART LORD	Telephone	: +6138549 9630
Project	: EP1934	Date Samples Received	: 19-Jan-2021
Site	: ----	Issue Date	: 27-Jan-2021
Sampler	: SL	No. of samples received	: 2
Order number	: EP1934	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- 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: **SOIL**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
Container / Client Sample ID(s)						
MM869: E.coli and Thermotolerant Coliforms by MPN						
Sterile Plastic Jar QS102	----	----	----	20-Jan-2021	18-Jan-2021	2

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
Container / Client Sample ID(s)						
MM301: E.coli & Faecal Coliforms MPN						
Sterile Plastic Bottle - Sodium Thiosulfate QW101	----	----	----	20-Jan-2021	15-Jan-2021	5

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Organochlorine Pesticides (Ultra-trace)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Organophosphorus Pesticides (Ultra-trace)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Organochlorine Pesticides (Ultra-trace)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Organophosphorus Pesticides (Ultra-trace)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	15	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	8	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	15	0.00	5.00	NEPM 2013 B3 & ALS QC Standard



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) QS102	14-Jan-2021	----	----	----	22-Jan-2021	28-Jan-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QS102	14-Jan-2021	22-Jan-2021	13-Jul-2021	✓	22-Jan-2021	13-Jul-2021	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QS102	14-Jan-2021	22-Jan-2021	11-Feb-2021	✓	23-Jan-2021	11-Feb-2021	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) QS102	14-Jan-2021	22-Jan-2021	28-Jan-2021	✓	22-Jan-2021	03-Mar-2021	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QS102	14-Jan-2021	22-Jan-2021	28-Jan-2021	✓	22-Jan-2021	03-Mar-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QS102	14-Jan-2021	21-Jan-2021	28-Jan-2021	✓	22-Jan-2021	28-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP071) QS102	14-Jan-2021	22-Jan-2021	28-Jan-2021	✓	22-Jan-2021	03-Mar-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) QS102	14-Jan-2021	21-Jan-2021	28-Jan-2021	✓	22-Jan-2021	28-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP071) QS102	14-Jan-2021	22-Jan-2021	28-Jan-2021	✓	22-Jan-2021	03-Mar-2021	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QS102	14-Jan-2021	21-Jan-2021	28-Jan-2021	✓	22-Jan-2021	28-Jan-2021	✓
EP130A: Organophosphorus Pesticides (Ultra-trace)							
Soil Glass Jar - Unpreserved (EP130) QS102	14-Jan-2021	27-Jan-2021	28-Jan-2021	✓	27-Jan-2021	08-Mar-2021	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP131A: Organochlorine Pesticides							
Soil Glass Jar - Unpreserved (EP131A) QS102	14-Jan-2021	27-Jan-2021	28-Jan-2021	✓	27-Jan-2021	08-Mar-2021	✓
MM869: E.coli and Thermotolerant Coliforms by MPN							
Sterile Plastic Jar (MM869) QS102	14-Jan-2021	----	----	----	20-Jan-2021	18-Jan-2021	✗

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QW101	14-Jan-2021	----	----	----	21-Jan-2021	13-Jul-2021	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QW101	14-Jan-2021	----	----	----	21-Jan-2021	11-Feb-2021	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) QW101	14-Jan-2021	20-Jan-2021	21-Jan-2021	✓	20-Jan-2021	01-Mar-2021	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) QW101	14-Jan-2021	20-Jan-2021	21-Jan-2021	✓	20-Jan-2021	01-Mar-2021	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) QW101	14-Jan-2021	20-Jan-2021	21-Jan-2021	✓	20-Jan-2021	01-Mar-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) QW101	14-Jan-2021	20-Jan-2021	21-Jan-2021	✓	20-Jan-2021	01-Mar-2021	✓
Clear glass VOC vial - HCl (EP080) QW101	14-Jan-2021	20-Jan-2021	28-Jan-2021	✓	20-Jan-2021	28-Jan-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) QW101	14-Jan-2021	20-Jan-2021	21-Jan-2021	✓	20-Jan-2021	01-Mar-2021	✓
Clear glass VOC vial - HCl (EP080) QW101	14-Jan-2021	20-Jan-2021	28-Jan-2021	✓	20-Jan-2021	28-Jan-2021	✓
EP080: BTEXN							
Clear glass VOC vial - HCl (EP080) QW101	14-Jan-2021	20-Jan-2021	28-Jan-2021	✓	20-Jan-2021	28-Jan-2021	✓
EP132B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP132) QW101	14-Jan-2021	21-Jan-2021	21-Jan-2021	✓	22-Jan-2021	02-Mar-2021	✓



Matrix: WATER

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
MM301: E.coli & Faecal Coliforms MPN							
Sterile Plastic Bottle - Sodium Thiosulfate (MM301) QW101	14-Jan-2021	----	----	----	20-Jan-2021	15-Jan-2021	✖



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
Organochlorine Pesticides (Ultra-trace)	EP131A	0	1	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
Organophosphorus Pesticides (Ultra-trace)	EP130	0	1	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	50.00	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	19	10.53	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)							
Organochlorine Pesticides (Ultra-trace)	EP131A	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organophosphorus Pesticides (Ultra-trace)	EP130	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	50.00	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	19	5.26	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)							
Organochlorine Pesticides (Ultra-trace)	EP131A	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organophosphorus Pesticides (Ultra-trace)	EP130	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	50.00	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	19	5.26	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)							
Organochlorine Pesticides (Ultra-trace)	EP131A	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Organophosphorus Pesticides (Ultra-trace)	EP130	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	50.00	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	19	5.26	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: **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	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	8	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
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	0	1	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	15	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	8	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
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	15	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
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).
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 AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (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 SnCl ₂ 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).
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.
Organophosphorus Pesticides (Ultra-trace)	EP130	SOIL	In house: Referenced to USEPA Method 3640 (GPC cleanup), 8141 (GC/FPD - Capillary Column) This technique is compliant with NEPM Schedule B(3)
Organochlorine Pesticides (Ultra-trace)	EP131A	SOIL	In house: Referenced to USEPA Method 3640 (GPC cleanup), 3620 (Florisil), 8081/8082 (GC/μECD/μECD) This technique is compliant with NEPM Schedule B(3)
Coliforms, Thermotolerant Coliforms and E.coli in Biosolids/Soils using AquaCHROM ECC by MPN	MM869	SOIL	Microbiological analysis subcontracted to ALS Scoresby (NATA Accredited Laboratory No. 992).
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.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(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 SnCl ₂ 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).
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)
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	WATER	In house: Referenced to USEPA 3640 (GPC Cleanup), 8270 GCMS Capillary column, SIM mode. This method is compliant with NEPM Schedule B(3)
E.coli & Faecal Coliforms MPN	MM301	WATER	E.coli and Thermotolerant Coliforms in Water (MPN)
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).
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, Na ₂ SO ₄ 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.
Tumbler Extraction of Solids/ Sample Cleanup	ORG17A-UTP	SOIL	In house: Mechanical agitation (tumbler). 20g of sample, Na ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. Samples are extracted, concentrated (by KD) and exchanged into an appropriate solvent for GPC and florisis cleanup as required.
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.

Page : 10 of 10
Work Order : EM2100655
Client : EP Risk Management
Project : EP1934



Preparation Methods	Method	Matrix	Method Descriptions
Sep. Funnel Extraction /Acetylation of Phenolic Compounds	ORG14-AC	WATER	In house: Referenced to USEPA 3510 (Extraction) / In-house (Acetylation): A 1L sample is extracted into dichloromethane and concentrated to 1 mL with exchange into cyclohexane. Phenolic compounds are reacted with acetic anhydride to yield phenyl acetates suitable for ultra-trace 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.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM2100655

Client : EP Risk Management Contact : MR STUART LORD Address : 109/283 Alfred St NORTH SYDNEY NSW 2060 E-mail : stuart.lord@eprisk.com.au Telephone : ---- Facsimile : ---- Project : EP1934 Order number : EP1934 C-O-C number : ---- Site : ---- Sampler : SL	Laboratory : Environmental Division Melbourne Contact : Shirley LeCornu Address : 4 Westall Rd Springvale VIC Australia 3171 E-mail : shirley.lecornu@Alsglobal.com Telephone : +6138549 9630 Facsimile : +61-3-8549 9626 Page : 1 of 3 Quote number : EM2017EPRISK0004 (EN/222) QC Level : NEPM 2013 B3 & ALS QC Standard
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Dates

Date Samples Received : 19-Jan-2021 08:55	Issue Date : 19-Jan-2021
Client Requested Due : 27-Jan-2021	Scheduled Reporting Date : 27-Jan-2021
Date	

Delivery Details

Mode of Delivery : Carrier	Security Seal : Not Available
No. of coolers/boxes : 1	Temperature : 5.0°C - Ice present
Receipt Detail :	No. of samples received / analysed : 2 / 2

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **The scheduled reporting date has been extended due to a public holiday.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale, ALS Sydney and ALS Scoresby.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Preliminary results will be available on the scheduled reporting date listed in this report. However the final report with Ultra Trace PAH, Ultra Trace OCP/OPP analysis will be complete on 02/02/2021.
- 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 - EP130 (solids) OP Pesticides - Ultra-Trace - Standard LOR	SOIL - EP131A OC Pesticides (Ultratrace)
EM2100655-002	14-Jan-2021 00:00	QS102	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - MM869 Thermotolerant Coliforms & E.coli by MPN	SOIL - S-26 & metals/TRH/BTEXN/PAH
EM2100655-002	14-Jan-2021 00:00	QS102	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP132B(PAH) Ultra Trace Polynuclear Aromatic Compounds	WATER - MM696 (FC & Ec) E. coli and Faecal Coliforms by MIF	WATER - W-12 OC/OP Pesticides	WATER - W-26 TRH/BTEXN/PAH/8 Metals
EM2100655-001	14-Jan-2021 00:00	QW101	✓	✓	✓	✓

EP Risk Management (NSW)
109/283 Alfred Street
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 1254 & 14271

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: **Stuart Lord**

Report **768033-S**
Project name **MANALONG ROAD PSI**
Project ID **EP1934**
Received Date **Jan 18, 2021**

Client Sample ID			M01 SED 01	M01 SED 02	M01 SED 03	M01 QS101
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Ja15966	M21-Ja15967	M21-Ja15968	M21-Ja15969
Date Sampled			Jan 14, 2021	Jan 14, 2021	Jan 14, 2021	Jan 14, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	53	170	< 20	< 20
TRH C15-C28	50	mg/kg	220	580	< 50	< 50
TRH C29-C36	50	mg/kg	160	380	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	433	1130	< 50	< 50
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	75	280	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	75	280	< 50	< 50
TRH >C16-C34	100	mg/kg	290	700	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	330	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	365	1310	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			M01 SED 01	M01 SED 02	M01 SED 03	M01 QS101
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Ja15966	M21-Ja15967	M21-Ja15968	M21-Ja15969
Date Sampled			Jan 14, 2021	Jan 14, 2021	Jan 14, 2021	Jan 14, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
2-Fluorobiphenyl (surr.)	1	%	79	92	83	89
p-Terphenyl-d14 (surr.)	1	%	97	55	110	71
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	140	81	120	57
Tetrachloro-m-xylene (surr.)	1	%	71	93	89	62
Organophosphorus Pesticides (Trace level)						
Azinphos-methyl	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Bolstar	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Chlorfenvinphos	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Chlorpyrifos	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Chlorpyrifos-methyl	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Coumaphos	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Demeton-O	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Demeton-S	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Diazinon	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Dichlorvos	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Dimethoate	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Disulfoton	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
EPN	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Ethion	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Ethoprop	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Ethyl parathion	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Fenitrothion	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Fensulfothion	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Fenthion	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Malathion	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Merphos	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Methyl parathion	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Mevinphos	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Monocrotophos	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Naled	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Omethoate	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Phorate	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Pirimiphos-methyl	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Pyrazophos	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Ronnel	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Terbufos	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Tetrachlorvinphos	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Tokuthion	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Trichloronate	0	mg/kg	0.0000000	0.0000000	0.0000000	0.0000000
Triphenylphosphate (surr.)	1	%	143	92	100	55

Client Sample ID			M01 SED 01	M01 SED 02	M01 SED 03	M01 QS101
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M21-Ja15966	M21-Ja15967	M21-Ja15968	M21-Ja15969
Date Sampled			Jan 14, 2021	Jan 14, 2021	Jan 14, 2021	Jan 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides (Trace level)						
4,4'-DDD	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
4,4'-DDE	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
4,4'-DDT	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
a-BHC	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
b-BHC	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Chlordanes - Total	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
d-BHC	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Dieldrin	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Endosulfan I	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Endosulfan II	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Endosulfan sulphate	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Endrin	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Endrin aldehyde	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Endrin ketone	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
g-BHC (Lindane)	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Heptachlor	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Heptachlor epoxide	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Hexachlorobenzene	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Methoxychlor	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
DDT + DDE + DDD (Total)*	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.005	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005
Vic EPA IWRG 621 OCP (Total)*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Vic EPA IWRG 621 Other OCP (Total)*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heavy Metals (1M HCl Extract)						
Arsenic (1M HCl extract)	2	mg/kg	3.4	3.6	< 2	< 2
Cadmium (1M HCl extract)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium (1M HCl extract)	5	mg/kg	< 5	< 5	< 5	< 5
Copper (1M HCl extract)	5	mg/kg	15	21	< 5	< 5
Lead (1M HCl extract)	5	mg/kg	21	20	< 5	< 5
Mercury (1M HCl extract)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel (1M HCl extract)	5	mg/kg	< 5	< 5	< 5	< 5
Zinc (1M HCl extract)	5	mg/kg	140	150	< 5	< 5
Pathogens						
E.coli	1	MPN/g	30	M15< 10	M15< 10	M15< 10
Thermotolerant Coliforms	1	MPN/g	M10< 41	M10< 41	M10< 10	M10< 10
% Moisture	1	%	61	64	26	23

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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
Eurofins Suite B10 (filtered metals)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 22, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 22, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 22, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 22, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Jan 22, 2021	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Organophosphorus Pesticides (Trace level)	Melbourne	Jan 22, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)			
Organochlorine Pesticides (Trace level)	Melbourne	Jan 22, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270) trace			
Heavy Metals (1M HCl Extract)	Melbourne	Jan 25, 2021	180 Days
- Method: USEPA 6010/6020 Heavy Metals - 1M HCl Extract			
E.coli	WaterTestingVic	Jan 19, 2021	72 Hours
- Method: LTM-MIC-6621 E.Coli and Total Coliforms by the MPN			
Thermotolerant Coliforms	WaterTestingVic	Jan 19, 2021	72 Hours
- Method: Inhouse: Thermotolerant Coliforms in Soil by MPN*			
% Moisture	Melbourne	Jan 18, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

Australia

Melbourne
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Company Name: EP Risk Management (NSW)
Address: 109/283 Alfred Street
North Sydney
NSW 2060

Project Name: MANALONG ROAD PSI
Project ID: EP1934

Order No.:
Report #: 768033
Phone: 02 99225021
Fax:

Received: Jan 18, 2021 3:11 PM
Due: Jan 25, 2021
Priority: 5 Day
Contact Name: Stuart Lord

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						Arsenic (1M HCl extract)	Cadmium (1M HCl extract)	Chromium (1M HCl extract)	Copper (1M HCl extract)	E.coli	Lead (1M HCl extract)	Mercury (1M HCl extract)*	Nickel (1M HCl extract)	Thermotolerant Coliforms	Zinc (1M HCl extract)	Polycyclic Aromatic Hydrocarbons	Polychlorinated Biphenyls	Moisture Set	Total Recoverable Hydrocarbons	Eurofins Suite B10 (filtered metals)	Polycyclic Aromatic Hydrocarbons (Trace level)	Organophosphorus Pesticides (Trace level)	Organochlorine Pesticides (Trace level)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																							
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
Mayfield Laboratory																							
External Laboratory																							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																		
1	WATER_01	Jan 14, 2021		Water	M21-Ja15962					X				X						X	X		
2	WATER_02	Jan 14, 2021		Water	M21-Ja15963					X				X						X	X		
3	WATER_03	Jan 14, 2021		Water	M21-Ja15964					X				X						X	X		
4	QW101	Jan 14, 2021		Water	M21-Ja15965					X				X						X	X		
5	SED_01	Jan 14, 2021		Soil	M21-Ja15966	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
6	SED_02	Jan 14, 2021		Soil	M21-Ja15967	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
7	SED_03	Jan 14, 2021		Soil	M21-Ja15968	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
8	QS101	Jan 14, 2021		Soil	M21-Ja15969	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
Test Counts						4	4	4	4	8	4	4	4	8	4	4	4	4	4	4	4	4	4

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - 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.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. 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.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. 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 - 1999 NEPM Fractions							
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	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
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							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals (1M HCl Extract)							
Arsenic (1M HCl extract)	mg/kg	< 2			2	Pass	
Cadmium (1M HCl extract)	mg/kg	< 0.4			0.4	Pass	
Chromium (1M HCl extract)	mg/kg	< 5			5	Pass	
Copper (1M HCl extract)	mg/kg	< 5			5	Pass	
Lead (1M HCl extract)	mg/kg	< 5			5	Pass	
Mercury (1M HCl extract)*	mg/kg	< 0.1			0.1	Pass	
Nickel (1M HCl extract)	mg/kg	< 5			5	Pass	
Zinc (1M HCl extract)	mg/kg	< 5			5	Pass	
LCS - % Recovery							

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 1999 NEPM Fractions										
TRH C6-C9				%	82			70-130	Pass	
TRH C10-C14				%	101			70-130	Pass	
LCS - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions										
Naphthalene				%	103			70-130	Pass	
TRH C6-C10				%	76			70-130	Pass	
TRH >C10-C16				%	103			70-130	Pass	
LCS - % Recovery										
Polycyclic Aromatic Hydrocarbons										
Acenaphthene				%	96			70-130	Pass	
Acenaphthylene				%	101			70-130	Pass	
Anthracene				%	120			70-130	Pass	
Benz(a)anthracene				%	100			70-130	Pass	
Benzo(a)pyrene				%	94			70-130	Pass	
Benzo(b&j)fluoranthene				%	92			70-130	Pass	
Benzo(g,h,i)perylene				%	87			70-130	Pass	
Benzo(k)fluoranthene				%	88			70-130	Pass	
Chrysene				%	79			70-130	Pass	
Dibenz(a,h)anthracene				%	71			70-130	Pass	
Fluoranthene				%	86			70-130	Pass	
Fluorene				%	97			70-130	Pass	
Indeno(1.2.3-cd)pyrene				%	100			70-130	Pass	
Naphthalene				%	103			70-130	Pass	
Phenanthrene				%	87			70-130	Pass	
Pyrene				%	91			70-130	Pass	
LCS - % Recovery										
Polychlorinated Biphenyls										
Aroclor-1260				%	96			70-130	Pass	
LCS - % Recovery										
Heavy Metals (1M HCl Extract)										
Arsenic (1M HCl extract)				%	106			80-120	Pass	
Cadmium (1M HCl extract)				%	107			80-120	Pass	
Chromium (1M HCl extract)				%	115			80-120	Pass	
Copper (1M HCl extract)				%	110			80-120	Pass	
Lead (1M HCl extract)				%	115			80-120	Pass	
Mercury (1M HCl extract)*				%	102			80-120	Pass	
Nickel (1M HCl extract)				%	111			80-120	Pass	
Zinc (1M HCl extract)				%	96			80-120	Pass	
Test		Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C6-C9		M21-Ja17531	NCP	%	88			70-130	Pass	
TRH C10-C14		M21-Ja13351	NCP	%	79			70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
Naphthalene		M21-Ja17531	NCP	%	121			70-130	Pass	
TRH C6-C10		M21-Ja17531	NCP	%	83			70-130	Pass	
TRH >C10-C16		M21-Ja13351	NCP	%	79			70-130	Pass	
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons					Result 1					
Acenaphthene		M21-Ja18810	NCP	%	82			70-130	Pass	
Acenaphthylene		M21-Ja18810	NCP	%	83			70-130	Pass	
Anthracene		M21-Ja18810	NCP	%	101			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	M21-Ja18810	NCP	%	80			70-130	Pass	
Benzo(a)pyrene	M21-Ja18810	NCP	%	91			70-130	Pass	
Benzo(b&j)fluoranthene	M21-Ja18810	NCP	%	87			70-130	Pass	
Benzo(g,h,i)perylene	M21-Ja18810	NCP	%	78			70-130	Pass	
Benzo(k)fluoranthene	M21-Ja18810	NCP	%	91			70-130	Pass	
Chrysene	M21-Ja18810	NCP	%	94			70-130	Pass	
Dibenz(a,h)anthracene	M21-Ja18810	NCP	%	84			70-130	Pass	
Fluoranthene	M21-Ja18810	NCP	%	75			70-130	Pass	
Fluorene	M21-Ja18810	NCP	%	82			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M21-Ja18810	NCP	%	88			70-130	Pass	
Naphthalene	M21-Ja18810	NCP	%	86			70-130	Pass	
Phenanthrene	M21-Ja18810	NCP	%	76			70-130	Pass	
Pyrene	M21-Ja18810	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	M21-Ja20161	NCP	%	88			70-130	Pass	
Aroclor-1260	M21-Ja20161	NCP	%	82			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M21-Ja23077	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M21-Ja26359	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M21-Ja26359	NCP	mg/kg	570	520	10	30%	Pass	
TRH C29-C36	M21-Ja26359	NCP	mg/kg	520	490	4.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M21-Ja23077	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M21-Ja23077	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M21-Ja26359	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M21-Ja26359	NCP	mg/kg	910	840	9.0	30%	Pass	
TRH >C34-C40	M21-Ja26359	NCP	mg/kg	300	280	8.0	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M21-Ja23385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	M21-Ja23385	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	M21-Ja23385	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	M21-Ja23385	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	M21-Ja23385	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	M21-Ja23385	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	M21-Ja23385	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	M21-Ja23385	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	M21-Ja23385	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	M21-Ja15967	CP	%	64	61	5.0	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
M01	Microbiological Testing performed outside the recommended holding time
M10	NATA accreditation does not cover the performance of this service in soil matrices
M15	LOR raised due to physical properties of sample
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

Authorised By

Elvis Dsouza	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nandhini Uthayakumaran	Senior Analyst-Microbiology (WTV)
Vivian Wang	Senior Analyst-Volatile (VIC)



Glenn Jackson General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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EP Risk Management (NSW)
109/283 Alfred Street
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 1254 & 14271

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: **Stuart Lord**

Report **768033-W**
Project name **MANALONG ROAD PSI**
Project ID **EP1934**
Received Date **Jan 18, 2021**

Client Sample ID			M01 WATER_01	M01 WATER_02	M01 WATER_03	M01 QW101
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-Ja15962	M21-Ja15963	M21-Ja15964	M21-Ja15965
Date Sampled			Jan 14, 2021	Jan 14, 2021	Jan 14, 2021	Jan 14, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	91	75	89	88
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			M01WATER_01	M01WATER_02	M01WATER_03	M01QW101
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-Ja15962	M21-Ja15963	M21-Ja15964	M21-Ja15965
Date Sampled			Jan 14, 2021	Jan 14, 2021	Jan 14, 2021	Jan 14, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	55	61	88	68
p-Terphenyl-d14 (surr.)	1	%	57	62	89	64
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
4,4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4,4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4,4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
a-BHC	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
b-BHC	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
d-BHC	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
g-BHC (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dibutylchloroendate (surr.)	1	%	83	73	76	51
Tetrachloro-m-xylene (surr.)	1	%	63	67	93	66
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002

Client Sample ID			M01 WATER_01	M01 WATER_02	M01 WATER_03	M01 QW101
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-Ja15962	M21-Ja15963	M21-Ja15964	M21-Ja15965
Date Sampled			Jan 14, 2021	Jan 14, 2021	Jan 14, 2021	Jan 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	81	83	94	64
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00002
Benz(a)anthracene	0.00001	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g,h,i)perylene	0.00001	mg/L	0.00003	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	0.00002	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	0.00003	< 0.00001	< 0.00001	< 0.00001
Dibenz(a,h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	0.00003	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1,2,3-cd)pyrene	0.00001	mg/L	0.00003	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	0.00002	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	0.00004	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	0.00022	< 0.00001	< 0.00001	0.00002
2-Fluorobiphenyl (surr.)	1	%	55	61	88	68
p-Terphenyl-d14 (surr.)	1	%	57	62	89	64
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.005	0.002	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.040	0.003	0.017	0.001
Lead (filtered)	0.001	mg/L	0.005	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Client Sample ID			M01 WATER_01	M01 WATER_02	M01 WATER_03	M01 QW101
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-Ja15962	M21-Ja15963	M21-Ja15964	M21-Ja15965
Date Sampled			Jan 14, 2021	Jan 14, 2021	Jan 14, 2021	Jan 14, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel (filtered)	0.001	mg/L	0.005	0.002	0.002	< 0.001
Zinc (filtered)	0.005	mg/L	0.062	0.008	0.015	0.006
Pathogens						
E.coli	1	MPN/100mL	1500	63	M15< 10	M15< 10
Thermotolerant Coliforms	1	MPN/100mL	10000	610	300	430

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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
Eurofins Suite B10 (filtered metals)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 20, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Jan 20, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 20, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 20, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 20, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jan 20, 2021	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Jan 20, 2021	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)			
Metals M8 filtered	Melbourne	Jan 20, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Jan 20, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)			
E.coli	WaterTestingVic	Jan 19, 2021	24 Hours
- Method: LTM-MIC-6621 E.Coli and Total Coliforms by the MPN			
Thermotolerant Coliforms	WaterTestingVic	Jan 19, 2021	24 Hours
- Method: LTM-MIC-6623 Thermotolerant Coliforms by MPN			

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Company Name: EP Risk Management (NSW)
Address: 109/283 Alfred Street
North Sydney
NSW 2060

Project Name: MANALONG ROAD PSI
Project ID: EP1934

Order No.:
Report #: 768033
Phone: 02 99225021
Fax:

Received: Jan 18, 2021 3:11 PM
Due: Jan 25, 2021
Priority: 5 Day
Contact Name: Stuart Lord

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						Arsenic (1M HCl extract)	Cadmium (1M HCl extract)	Chromium (1M HCl extract)	Copper (1M HCl extract)	E.coli	Lead (1M HCl extract)	Mercury (1M HCl extract)*	Nickel (1M HCl extract)	Thermotolerant Coliforms	Zinc (1M HCl extract)	Polycyclic Aromatic Hydrocarbons	Polychlorinated Biphenyls	Moisture Set	Total Recoverable Hydrocarbons	Eurofins Suite B10 (filtered metals)	Polycyclic Aromatic Hydrocarbons (Trace level)	Organophosphorus Pesticides (Trace level)	Organochlorine Pesticides (Trace level)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																							
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
Mayfield Laboratory																							
External Laboratory																							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																		
1	WATER_01	Jan 14, 2021		Water	M21-Ja15962					X				X						X	X		
2	WATER_02	Jan 14, 2021		Water	M21-Ja15963					X				X						X	X		
3	WATER_03	Jan 14, 2021		Water	M21-Ja15964					X				X						X	X		
4	QW101	Jan 14, 2021		Water	M21-Ja15965					X				X						X	X		
5	SED_01	Jan 14, 2021		Soil	M21-Ja15966	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
6	SED_02	Jan 14, 2021		Soil	M21-Ja15967	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
7	SED_03	Jan 14, 2021		Soil	M21-Ja15968	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
8	QS101	Jan 14, 2021		Soil	M21-Ja15969	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
Test Counts						4	4	4	4	8	4	4	4	8	4	4	4	4	4	4	4	4	4

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - 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.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. 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.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. 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										
Polycyclic Aromatic Hydrocarbons (Trace level)										
Total PAH*				mg/L	-			0.00001	N/A	
Method Blank										
Heavy Metals										
Arsenic (filtered)				mg/L	< 0.001			0.001	Pass	
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	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1	Result 2	RPD			
TRH C6-C9	P21-Ja20631	NCP		mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M21-Ja14418	NCP		mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M21-Ja14418	NCP		mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M21-Ja14418	NCP		mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate										
BTEX					Result 1	Result 2	RPD			
Benzene	M21-Ja25004	NCP		mg/L	**	**	<1	30%	Pass	
Toluene	M21-Ja25004	NCP		mg/L	**	**	<1	30%	Pass	
Ethylbenzene	M21-Ja25004	NCP		mg/L	**	**	<1	30%	Pass	
m&p-Xylenes	M21-Ja25004	NCP		mg/L	**	**	<1	30%	Pass	
o-Xylene	M21-Ja25004	NCP		mg/L	**	**	<1	30%	Pass	
Xylenes - Total*	M21-Ja25004	NCP		mg/L	**	**	<1	30%	Pass	
Duplicate										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1	Result 2	RPD			
Naphthalene	M21-Ja25004	NCP		mg/L	**	**	<1	30%	Pass	
TRH C6-C10	M21-Ja25004	NCP		mg/L	**	**	<1	30%	Pass	
Duplicate										
Polycyclic Aromatic Hydrocarbons					Result 1	Result 2	RPD			
Acenaphthene	M21-Ja14418	NCP		mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M21-Ja14418	NCP		mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M21-Ja14418	NCP		mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M21-Ja14418	NCP		mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	M21-Ja14418	NCP		mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M21-Ja14418	NCP		mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	M21-Ja14418	NCP		mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M21-Ja14418	NCP		mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	M21-Ja14418	NCP		mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M21-Ja14418	NCP		mg/L	< 0.001	< 0.001	<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
M01	Microbiological Testing performed outside the recommended holding time
M15	LOR raised due to physical properties of sample
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

Authorised By

Elvis Dsouza	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nandhini Uthayakumaran	Senior Analyst-Microbiology (WTV)
Vivian Wang	Senior Analyst-Volatile (VIC)



Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Company Name: EP Risk Management (NSW)
Address: 109/283 Alfred Street
 North Sydney
 NSW 2060

Project Name: MANALONG ROAD PSI
Project ID: EP1934

Order No.:
Report #: 768033
Phone: 02 99225021
Fax:

Received: Jan 18, 2021 3:11 PM
Due: Jan 25, 2021
Priority: 5 Day
Contact Name: Stuart Lord

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						Organochlorine Pesticides (Trace level)	Organophosphorus Pesticides (Trace level)	Polycyclic Aromatic Hydrocarbons (Trace level)	Eurofins Suite B10 (filtered metals)	Total Recoverable Hydrocarbons	Moisture Set	Polychlorinated Biphenyls	Polycyclic Aromatic Hydrocarbons	Zinc (1M HCl extract)	Thermotolerant Coliforms	Nickel (1M HCl extract)	Mercury (1M HCl extract)*	Lead (1M HCl extract)	E. coli	Copper (1M HCl extract)	Chromium (1M HCl extract)	Cadmium (1M HCl extract)	Arsenic (1M HCl extract)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																							
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
Mayfield Laboratory																							
External Laboratory																							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																		
1	WATER_01	Jan 14, 2021		Water	M21-Ja15962										X								
2	WATER_02	Jan 14, 2021		Water	M21-Ja15963										X								
3	WATER_03	Jan 14, 2021		Water	M21-Ja15964										X								
4	QW101	Jan 14, 2021		Water	M21-Ja15965										X								
5	SED 01	Jan 14, 2021		Soil	M21-Ja15966	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	SED 02	Jan 14, 2021		Soil	M21-Ja15967	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	SED 03	Jan 14, 2021		Soil	M21-Ja15968	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	QS101	Jan 14, 2021		Soil	M21-Ja15969	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						4	4	4	4	8	4	4	4	8	4	4	4	4	4	4	4	4	4

Australia

Melbourne

6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle

4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland

35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch

43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name: EP Risk Management (NSW)
Contact name: Stuart Lord
Project name: MANALONG ROAD PSI
Project ID: EP1934
Turnaround time: 5 Day
Date/Time received: Jan 18, 2021 3:11 PM
Eurofins reference: 768033

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

Notes

Contact

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

Elvis Dsouza on phone : or by email: ElvisDsouza@eurofins.com

Results will be delivered electronically via email to Stuart Lord - Stuart.Lord@eprisk.com.au.

Note: A copy of these results will also be delivered to the general EP Risk Management (NSW) email address.



CHAIN OF CUSTODY RECORD
Eurofins | met ARN 50 005 095 524

Eurofins | mgt ABN 50 005 085 521

Sydney Laboratory

Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2065
02 9900 8400 EnviroSampleNSW@eurofins.com

☐

Unit 1 21 Smallwood Place Murarie QLD 4172
07 3902 4600 EnviroSampleQLD@eurnfins.com

Perth Laboratory

Unit 291 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory

2 Kingston Town Close Oakleigh VIC 3166
03 8584 5000 EnviroSampleVic@eurofins.com

Company	EP RISK	Project No	EP1034	Project Manager	SL	Sampler(s)	SL
Address	3/19 Bolton St Newcastle NSW	Project Name	Mandalong Road PSI	EDD Format ES&I, EQUS etc		Handed over by	
		Analyses Where metals are requested, please specify "Total" or "Filtered". SUIT code must be used to select SUITE pricing.				Email for Invoice accounts@eprisk.com.au	
Contact Name	Stuart Lord						
Phone No	403768722						
Special Directions							
Purchase Order							
Quote ID No	181023EPR						
No	Client Sample ID	Sampled Date/Time dd/mm/yyyy hh:mm	Matrix Solid (S) Water (W)				
1	Water_01	14/01/21					
2	Water_02	14/01/21					
3	Water_03	14/01/21					
4	QW101	14/01/21					
5	QW102	14/01/21					
6	SED 01	14/01/21					
7	SED 02	14/01/21					
8	SED 03	14/01/21					
9	QS101	14/01/21					
10	QS102	14/01/21					
Total Counts		5	10	5	5	5	5
Method of Shipment		Hand Delivered		Signature		Date	Time
Eurofins mgt Laboratory Use Only		Received By	Signature	Date	Time	Temperature	Report No

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053005 RR Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt



CHAIN OF CUSTODY RECORD

Eurofins | mgt | AEN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2058
02 9500 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Mirani QLD 4172
07 3302 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 8600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
2 Kingston Town Close Cadeleigh VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	EP RISK	Project No	EP1934	Project Manager	SL	Sampler(s)	SL					
Address	3/19 Bolton St Newcastle NSW	Project Name	Mandalong Road PSI	EDD Format		Handed over by						
Contact Name	Stuart Lord	Analyses Where metals are requested, please specify 'Total' or 'Filtered' SUTTE code must be used to attract SUTTE pricing.	PAH trace	8 metals (1M HCL Dilute Acid Extraction of Metals)	TPH	PAH	PCB	Trace OCP/OPP	EDD Format	ESD, EOLIS etc	Email for Invoice	Email for Results
Phone No	403768722											
Special Directions												
Purchase Order												
Quote ID No	181023EPR	Client Sample ID		Matrix								
				Solid (S)								
				Water (W)								
1	Water_01	14/01/21			X	X	X	X	X	X		
2	Water_02	14/01/21			X	X	X	X	X	X		
3	Water_03	14/01/21			X	X	X	X	X	X		
4	QW101	14/01/21			X	X	X	X	X	X		
5	QW102	14/01/21			X	X	X	X	X	X		
6	SED 01	14/01/21										
7	SED 02	14/01/21										
8	SED 03	14/01/21										
9	QS101	14/01/21										
10	QS102	14/01/21										
Total Counts		5	10	5	5	5	5	5	5	5		
Method of Shipment												
Eurofins mgt Laboratory Use Only	Received By	Signature		Date		Time		Temperature		Report No.		
	Received By	Signature		Date		Time		Temperature		Report No.		

#AU_CAU001_EnviroSampleVic

From: Andrew Black
Sent: Monday, 18 January 2021 3:11 PM
To: #AU_CAU001_EnviroSampleVic
Subject: RE: No COC
Attachments: EP1934 - 181023EPR.pdf

Importance: High

Was this sorted team? I think this is maybe them?

Andrew Black
Phone: +61 410 220 750
Email: AndrewBlack@eurofins.com

From: #AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofins.com>
Sent: Friday, 15 January 2021 1:21 PM
To: Andrew Black <AndrewBlack@eurofins.com>
Subject: No COC

Hi Andrew

We have received some unlogged micro samples with no COC today.
Job EP1934.
Do you have a COC?

Thanks
Jo

Sample Receipt

Eurofins Environment Testing
6 Monterey Rd
Dandenong South 3175
AUSTRALIA
Phone : +61 3 8564 5000

Email : EnviroSampleVic@eurofins.com
Website : <http://environment.eurofins.com.au>



CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F 16 Mars Rd
02 9900 8400 Enviro-

Brisbane Laboratory
Unit 1 21 Smallwood Place Murarie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2/91 Leach Highway Kewdale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingslon Town Close Oakleigh VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		EP RISK		Project No		EP1934		Project Manager		SL		SL		Sampler(s)		SL	
Address		3/19 Bolton St Newcastle NSW		Project Name		Mandalong Road PSI		EDD Format ES&at, EQUIS etc						Handed over by			
Contact Name		Stuart Lord		Analyses		Faecal coliform / E.coli								Email for Invoice		accounts@eprisk.com.au	
Phone No		403768722		Where metals are requested, please specify "Total" or "Filtered" SULTE code must be used to alter SULTE pricing.		B-10								Email for Results		stuart.lord@eprisk.com.au	
Special Directions				Matrix		Solid (S)		Water (W)						Containers		Required Turnaround Time (TAT) Default will be 5 days if not ticked.	
Purchase Order				Sampled Date/Time		delivered by								Change container type & size if necessary.		Other (Asbestos AS4994, WA Guidelines)	
Quote ID No		181023EPR		Client Sample ID		14/01/21		14/01/21		14/01/21				500mL Plastic		Jar (Glass or HDPE)	
No				RW101		TB		TS						200mL Amber Glass		500mL PFA Bottle	
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Method of Shipment		Courier (#)		Hand Delivered		Postal		Name		Signature		Date		Time		Temperature	
Eurofins Ingt Laboratory Use Only		Received By		Received By		SYD BNE MEL PER AQL NTL DRW		Signature		Date		Time		Report No		768048	

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgmt

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

#AU_CAU001_EnviroSampleVic

From: Andrew Black
Sent: Monday, 18 January 2021 3:11 PM
To: #AU_CAU001_EnviroSampleVic
Subject: RE: No COC
Attachments: EP1934 - 181023EPR.pdf

Importance: High

Was this sorted team? I think this is maybe them?

Andrew Black
Phone: +61 410 220 750
Email: AndrewBlack@eurofins.com

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Sent: Friday, 15 January 2021 1:21 PM
To: Andrew Black <AndrewBlack@eurofins.com>
Subject: No COC

Hi Andrew

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Job EP1934.
Do you have a COC?

Thanks
Jo

Sample Receipt

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6 Monterey Rd
Dandenong South 3175
AUSTRALIA
Phone : +61 3 8564 5000

Email : EnviroSampleVic@eurofins.com
Website : <http://environment.eurofins.com.au>

Australia

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Site # 1254 & 14271

Sydney

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

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4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

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35 O'Rourke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch

43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name: EP Risk Management (NSW)
Contact name: Stuart Lord
Project name: MANDALONG ROAD PSI
Project ID: EP1934
Turnaround time: 5 Day
Date/Time received: Jan 18, 2021 3:11 PM
Eurofins reference: 768048

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

Notes

Contact

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

Elvis Dsouza on phone : or by email: ElvisDsouza@eurofins.com

Results will be delivered electronically via email to Stuart Lord - Stuart.Lord@eprisk.com.au.

Note: A copy of these results will also be delivered to the general EP Risk Management (NSW) email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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1/21 Smallwood Place
Murarrie QLD 4172
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NATA # 1261 Site # 20794

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
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PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Company Name: EP Risk Management (NSW)
Address: 109/283 Alfred Street
North Sydney
NSW 2060

Project Name: MANDALONG ROAD PSI
Project ID: EP1934

Order No.:
Report #: 768048
Phone: 02 99225021
Fax:

Received: Jan 18, 2021 3:11 PM
Due: Jan 25, 2021
Priority: 5 Day
Contact Name: Stuart Lord

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						E.coli	Thermotolerant Coliforms	Eurofins Suite B10 (filtered metals)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	RW01	Jan 14, 2021		Water	M21-Ja16034	X	X	X	
2	TB	Jan 14, 2021		Soil	M21-Ja16035				X
3	TS	Jan 14, 2021		Soil	M21-Ja16036				X
Test Counts						1	1	1	2

EP Risk Management (NSW)
109/283 Alfred Street
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 1254 & 14271

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: **Stuart Lord**

Report **768048-S**
Project name **MANDALONG ROAD PSI**
Project ID **EP1934**
Received Date **Jan 18, 2021**

Client Sample ID			TB	TS
Sample Matrix			Soil	Soil
Eurofins Sample No.			M21-Ja16035	M21-Ja16036
Date Sampled			Jan 14, 2021	Jan 14, 2021
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	110
TRH C6-C10	20	mg/kg	< 20	110
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	110
BTEX				
Benzene	0.1	mg/kg	< 0.1	110
Toluene	0.1	mg/kg	< 0.1	120
Ethylbenzene	0.1	mg/kg	< 0.1	110
m&p-Xylenes	0.2	mg/kg	< 0.2	100
o-Xylene	0.1	mg/kg	< 0.1	93
Xylenes - Total*	0.3	mg/kg	< 0.3	100
4-Bromofluorobenzene (surr.)	1	%	51	69

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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 - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 18, 2021	14 Days
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 18, 2021	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 18, 2021	14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Company Name: EP Risk Management (NSW)
Address: 109/283 Alfred Street
North Sydney
NSW 2060

Project Name: MANDALONG ROAD PSI
Project ID: EP1934

Order No.:
Report #: 768048
Phone: 02 99225021
Fax:

Received: Jan 18, 2021 3:11 PM
Due: Jan 25, 2021
Priority: 5 Day
Contact Name: Stuart Lord

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						E.coli	Thermotolerant Coliforms	Eurofins Suite B10 (filtered metals)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	RW01	Jan 14, 2021		Water	M21-Ja16034	X	X	X	
2	TB	Jan 14, 2021		Soil	M21-Ja16035				X
3	TS	Jan 14, 2021		Soil	M21-Ja16036				X
Test Counts						1	1	1	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
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****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - 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.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
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APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
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TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
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4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. 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.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised By

Elvis Dsouza	Analytical Services Manager
Vivian Wang	Senior Analyst-Volatile (VIC)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

EP Risk Management (NSW)
109/283 Alfred Street
North Sydney
NSW 2060

Attention: **Stuart Lord**

Report **768048-W**
Project name **MANDALONG ROAD PSI**
Project ID **EP1934**
Received Date **Jan 18, 2021**

Client Sample ID			M01 RW01
Sample Matrix			Water
Eurofins Sample No.			M21-Ja16034
Date Sampled			Jan 14, 2021
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
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

Client Sample ID			M01-RW01
Sample Matrix			Water
Eurofins Sample No.			M21-Ja16034
Date Sampled			Jan 14, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	85
p-Terphenyl-d14 (surr.)	1	%	62
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
α-BHC	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
β-BHC	0.0002	mg/L	< 0.0002
δ-BHC	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
γ-BHC (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	0.001	mg/L	< 0.001
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
Dibutylchloroendate (surr.)	1	%	93
Tetrachloro-m-xylene (surr.)	1	%	68
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.002	mg/L	< 0.002
Chlorpyrifos	0.02	mg/L	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.02	mg/L	< 0.02
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

Client Sample ID			M01-RW01
Sample Matrix			Water
Eurofins Sample No.			M21-Ja16034
Date Sampled			Jan 14, 2021
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
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	0.002	mg/L	< 0.002
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	%	79
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005
Pathogens			
E.coli	1	MPN/100mL	< 1
Thermotolerant Coliforms	1	MPN/100mL	< 1

Sample History

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Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 20, 2021	7 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 20, 2021	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 20, 2021	7 Days
Eurofins Suite B10 (filtered metals)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 20, 2021	7 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Jan 20, 2021	7 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Jan 20, 2021	7 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)	Melbourne	Jan 20, 2021	7 Days
Metals M8 filtered - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Jan 20, 2021	28 Days
E.coli - Method: LTM-MIC-6621 E.Coli and Total Coliforms by the MPN	WaterTestingVic	Jan 19, 2021	24 Hours
Thermotolerant Coliforms - Method: LTM-MIC-6623 Thermotolerant Coliforms by MPN	WaterTestingVic	Jan 19, 2021	24 Hours

LABORATORY

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

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4/52 Industrial Drive
Mayfield East NSW 2304
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Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Company Name: EP Risk Management (NSW)
Address: 109/283 Alfred Street
North Sydney
NSW 2060

Project Name: MANDALONG ROAD PSI
Project ID: EP1934

Order No.:
Report #: 768048
Phone: 02 99225021
Fax:

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Due: Jan 25, 2021
Priority: 5 Day
Contact Name: Stuart Lord

Eurofins Analytical Services Manager : Elvis Dsouza

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WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

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4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. 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.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. 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 - 1999 NEPM Fractions							
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	
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	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							
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-BHC	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-BHC	mg/L	< 0.0002			0.0002	Pass	
d-BHC	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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-BHC (Lindane)	mg/L	< 0.0002			0.0002	Pass	
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	< 0.001			0.001	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	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.02			0.02	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	< 0.002			0.002	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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	100			70-130	Pass	
TRH C10-C14	%	93			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	104			70-130	Pass	
Toluene	%	96			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	%	85			70-130	Pass	
m&p-Xylenes	%	90			70-130	Pass	
Xylenes - Total*	%	89			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	86			70-130	Pass	
TRH C6-C10	%	98			70-130	Pass	
TRH >C10-C16	%	94			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	78			70-130	Pass	
Acenaphthylene	%	97			70-130	Pass	
Anthracene	%	90			70-130	Pass	
Benz(a)anthracene	%	86			70-130	Pass	
Benzo(a)pyrene	%	86			70-130	Pass	
Benzo(b&j)fluoranthene	%	119			70-130	Pass	
Benzo(g,h,i)perylene	%	80			70-130	Pass	
Benzo(k)fluoranthene	%	95			70-130	Pass	
Chrysene	%	86			70-130	Pass	
Dibenz(a,h)anthracene	%	72			70-130	Pass	
Fluoranthene	%	99			70-130	Pass	
Fluorene	%	95			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	78			70-130	Pass	
Naphthalene	%	95			70-130	Pass	
Phenanthrene	%	103			70-130	Pass	
Pyrene	%	89			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	90			70-130	Pass	
4,4'-DDD	%	79			70-130	Pass	
4,4'-DDE	%	105			70-130	Pass	
4,4'-DDT	%	111			70-130	Pass	
α-BHC	%	94			70-130	Pass	
Aldrin	%	105			70-130	Pass	
β-BHC	%	88			70-130	Pass	
δ-BHC	%	92			70-130	Pass	
Dieldrin	%	95			70-130	Pass	
Endosulfan I	%	94			70-130	Pass	
Endosulfan II	%	103			70-130	Pass	
Endosulfan sulphate	%	91			70-130	Pass	
Endrin	%	117			70-130	Pass	
Endrin aldehyde	%	89			70-130	Pass	
Endrin ketone	%	106			70-130	Pass	
γ-BHC (Lindane)	%	96			70-130	Pass	
Heptachlor	%	89			70-130	Pass	
Heptachlor epoxide	%	95			70-130	Pass	
Hexachlorobenzene	%	109			70-130	Pass	
Methoxychlor	%	116			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	83			70-130	Pass	
Dimethoate	%	87			70-130	Pass	
Ethion	%	74			70-130	Pass	
Fenitrothion	%	71			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methyl parathion		%	77			70-130	Pass	
Mevinphos		%	91			70-130	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic (filtered)		%	92			80-120	Pass	
Cadmium (filtered)		%	92			80-120	Pass	
Chromium (filtered)		%	93			80-120	Pass	
Copper (filtered)		%	91			80-120	Pass	
Lead (filtered)		%	98			80-120	Pass	
Mercury (filtered)		%	103			80-120	Pass	
Nickel (filtered)		%	91			80-120	Pass	
Zinc (filtered)		%	110			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C10-C14	M21-Ja20396	NCP	%	109		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
TRH >C10-C16	M21-Ja20396	NCP	%	107		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	S21-Ja06694	NCP	%	71		70-130	Pass	
Acenaphthylene	S21-Ja06694	NCP	%	80		70-130	Pass	
Anthracene	S21-Ja06694	NCP	%	72		70-130	Pass	
Benz(a)anthracene	S21-Ja06694	NCP	%	74		70-130	Pass	
Benzo(a)pyrene	S21-Ja06694	NCP	%	85		70-130	Pass	
Benzo(b&j)fluoranthene	S21-Ja06694	NCP	%	76		70-130	Pass	
Benzo(k)fluoranthene	S21-Ja06694	NCP	%	83		70-130	Pass	
Chrysene	S21-Ja06694	NCP	%	71		70-130	Pass	
Dibenz(a,h)anthracene	S21-Ja06694	NCP	%	90		70-130	Pass	
Fluoranthene	S21-Ja06694	NCP	%	81		70-130	Pass	
Fluorene	S21-Ja06694	NCP	%	72		70-130	Pass	
Naphthalene	S21-Ja06694	NCP	%	81		70-130	Pass	
Phenanthrene	S21-Ja06694	NCP	%	80		70-130	Pass	
Pyrene	S21-Ja06694	NCP	%	80		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic (filtered)	M21-Ja25028	NCP	%	95		75-125	Pass	
Cadmium (filtered)	M21-Ja25028	NCP	%	94		75-125	Pass	
Chromium (filtered)	M21-Ja25028	NCP	%	95		75-125	Pass	
Copper (filtered)	M21-Ja25028	NCP	%	91		75-125	Pass	
Lead (filtered)	M21-Ja25028	NCP	%	99		75-125	Pass	
Mercury (filtered)	M21-Ja25028	NCP	%	102		75-125	Pass	
Nickel (filtered)	M21-Ja25028	NCP	%	92		75-125	Pass	
Zinc (filtered)	M21-Ja25028	NCP	%	95		75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	P21-Ja20631	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
TRH C10-C14	M21-Ja20886	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH C15-C28	M21-Ja20886	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH C29-C36	M21-Ja20886	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass

Duplicate								
BTX				Result 1	Result 2	RPD		
Benzene	P21-Ja20631	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Toluene	P21-Ja20631	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Ethylbenzene	P21-Ja20631	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
m&p-Xylenes	P21-Ja20631	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
o-Xylene	P21-Ja20631	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Xylenes - Total*	P21-Ja20631	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	P21-Ja20631	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
TRH C6-C10	P21-Ja20631	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
TRH >C10-C16	M21-Ja20886	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH >C16-C34	M21-Ja20886	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH >C34-C40	M21-Ja20886	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
4,4'-DDD	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
4,4'-DDE	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
4,4'-DDT	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
a-BHC	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Aldrin	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
b-BHC	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
d-BHC	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Dieldrin	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan I	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan II	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan sulphate	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin aldehyde	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin ketone	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
g-BHC (Lindane)	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Heptachlor	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Heptachlor epoxide	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Hexachlorobenzene	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Methoxychlor	S21-Ja06693	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Toxaphene	S21-Ja06693	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Bolstar	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Chlorfenvinphos	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Chlorpyrifos	S21-Ja06693	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Chlorpyrifos-methyl	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Coumaphos	S21-Ja06693	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Demeton-S	S21-Ja06693	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Demeton-O	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Diazinon	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Dichlorvos	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Dimethoate	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Disulfoton	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
EPN	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethion	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethoprop	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethyl parathion	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fenitrothion	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fensulfthion	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fenthion	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Malathion	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Merphos	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Methyl parathion	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Mevinphos	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Monocrotophos	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Naled	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Omethoate	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Phorate	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Pirimiphos-methyl	S21-Ja06693	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Pyrazophos	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ronnel	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Terbufos	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Tetrachlorvinphos	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Tokuthion	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Trichloronate	S21-Ja06693	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	M21-Ja25028	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium (filtered)	M21-Ja25028	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	M21-Ja25028	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	M21-Ja25028	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead (filtered)	M21-Ja25028	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	M21-Ja25028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	M21-Ja25028	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc (filtered)	M21-Ja25028	NCP	mg/L	< 0.005	< 0.005	<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
M01	Microbiological Testing performed outside the recommended holding time
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

Authorised By

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- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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