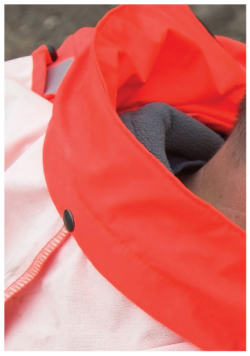




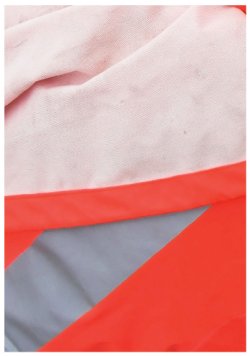











Environmental Assessment

31-49 Melaluka Road, LEOPOLD

Prepared for:

Cardno TGM

Environmental Site Assessments

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1	1	Email	Chris Marshall	Planning Manager – Cardno TGM

Contents

Appendices

CONCLUSION OF ENVIRONMENTAL ASSESSMENT

Conclusions	There is a Low likelihood of chemical contamination of soil in the paddocks due to application of fertilisers and/or herbicides. There is a Low likelihood of chemical contamination of surface soils at the entrance to sheds from fuel/chemical spillage. There is a Low likelihood of contamination of soil at the Site due to industrial waste. There is a Low probability of occurrence of Acid Sulfate soils on Site. The Site is surrounded by low risk properties. There is no apparent soil staining, soil discolouration or odours at the Site. There is no apparent asbestos contamination. There is no apparent Prescribed Industrial Waste or Putrescible Waste. There is no apparent imported fill on Site.
Risk of Contamination	Based on all available information, the soil at the Site has a Low risk of contamination. All soils analysed were BELOW the upper thresholds for NEPM HIL A, HSL A/B and ESLs (Urban Residential). As per the Ministerial Direction No. 1, the Site is suitable for a sensitive use (defined as residential, child-care centre, pre-school centre or primary school), agriculture or public open space.

1.0 INTRODUCTION

Environmental Site Assessments Pty Ltd ('ESA') was engaged by Cardno TGM ('the Client') to undertake an Environmental Assessment ('EA') at 31-49 Melaluka Road, Leopold ('the Site'). The Site is currently zoned as Low Density Residential ('LDRZ1').

The client plans to develop the Site for conventional residential purposes.

The intention of the EA is to determine whether:

- The Site is potentially contaminated; and
- Whether it is suitable for a sensitive use (i.e. conventional residential).

Potentially contaminated land is defined in Ministerial Direction No. 1 – Potentially Contaminated Land, as land used or known to have been used for industry, mining or the storage of chemicals, gas, wastes or liquid fuel (if not ancillary to another use of land). This practice note also deals with land that may have been contaminated by other means such as by ancillary activities, contamination from surrounding land, fill using contaminated soil or agricultural uses.

Ministerial Direction No. 1 – Potentially Contaminated Land (Direction No. 1) requires planning authorities when preparing planning scheme amendments, to satisfy themselves that the environmental conditions of land proposed to be used for a sensitive use (defined as residential, child-care centre, pre-school centre or primary school), agriculture or public open space are, or will be, suitable for that use.

1.1 Project Understanding and Objectives

This EA will involve the collection and assessment of information derived from records of its previous use (preliminary study) and a Site inspection coupled with limited soil sampling.

Limited soil sampling is carried out to:

(a) Produce evidence through an investigation to indicate whether a Site is potentially contaminated; and

(b) Determine whether a Detailed Site Investigation ('DSI') should be conducted.[1]

1.2 Scope of Work Undertaken

Based on the project understanding and objectives described above, ESA undertook the following scope of works:

- The collection of historical information about the Site uses to assist in determining its potential for contamination;
- The collection of geological and hydrogeological information about the Site and its surroundings;
- A physical inspection of the Site;
- A limited soil-sampling program to provide an initial indication of the likely contamination status of the Site soils; and
- A report of the findings and recommendations.

2.0 PRELIMINARY STUDY

2.1 Site Details

The following table summarises the relevant details that describe the Site.

Site Address	31-49 Melaluka Road, Leopold
Current Site Owner/s	Robert James Clifton and Ana Maria Clifton
Current Title Volumes/Folios	8713/254
Municipality	Greater Geelong
Current Land Use Zonings	Low Density Residential
Current Site Uses	Residential
Lot and Plan Numbers	Lot 1 on Title Plan 379468S
Area of Site (Approximate)	2.55 ha

2.2 Current Use

The Site is used for residential purposes.

2.3 Surrounding Land Use

North	Public Park and Recreation
South	Residential
East	Residential
West	Farming

2.4 Relevant Planning Information

Under the Greater Geelong planning scheme, the Site is currently zoned as Low Density Residential ('LDRZ1').

Per the Lotsearch report (**Appendix 1**), the Site is not currently subject to the requirements of an Environmental Audit Overlay ('EAO').

[1] Guide to the investigation and sampling of sites with potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds AS 4482.1—2005.

2.5 Regional Geology

Per the Lotsearch report (**Appendix 1**) the geology on Site is:

- Nb – Brighton Group; and
- Qa2 – Alluvial terrace deposits.

2.6 Potential Acid Sulfate Soils

Per the Lotsearch report (**Appendix 1**), the potential for ASS on Site is low.

2.7 Regional Hydrogeology

Per the Lotsearch report (**Appendix 1**), the following is known about the hydrogeology for the Site and its immediate surrounds.

TDS (mg/L)	3,500 – 7,000
Groundwater Beneficial Use Segment (per SEPP)	C
Depth to Upper Aquifer	<5m BGL
Surface Elevation above sea level (m AHD)	8 - 10
Inferred Groundwater Flow Direction	Northwest towards Port Phillip Bay

Table 2.7

Per the Lotsearch report (**Appendix 1**) there are 67 groundwater wells within a 2km radius of the Site.

The wells are used for the following purposes:

- Investigation;
- Observation;
- Domestic; and
- Stock.

Per the Lotsearch report (**Appendix 1**), the lithology is:

- Silt material (significant); sand (significant); gravel material (significant); and
- Gravel material (significant); sand (significant); silt material (significant).

2.8 Nearest Surface Water Bodies

- Port Phillip Bay, 2km to the North.

2.9 Previous Investigations

There are no known previous investigations.

3.0 SITE HISTORY REVIEW

3.1 Title Information

Copies of Title Information are contained in **Appendix 2** and summarised in Table 3.1 below.

Land	Volume/Folio	Parent Volume/Folio	Registered Proprietor/s	Date	Status
Lot 1 on Title Plan 379468S	8713/254	6853/462	Robert James Clifton and Ana Maria Clifton	25/08/1993	Current

Land	Volume/Folio	Parent Volume/Folio	Registered Proprietor/s	Date	Status
			John Barry Burke (Solicitor)	07/03/1983	History
			Graeme Franklin Osbourne (Retailer) and Carol Osbourne	07/11/1974	History
			Graeme Ian Coates (Electrician) and Lorna Maree Coates	04/05/1973	History
			Allan John Muegel (Farmer)	02/02/1968	History
			Richard Wesley Derwent Moodie (Manager) and Editha Moodie	12/04/1967	History
			Robert George Bennett (Labourer)	12/04/1967	History
Part of Crown Allotment 1B, Section 5, Block 1, Parish of Moolap, County of Grant	6853/462	2375/987	Mary Jane Dash and Charles William Bell (Farmer)	16/02/1967	History
			William Dash (Primary Producer)	28/07/1948	History
			Gordon Herbert Reddie (Farmer)	04/05/1946	History
Part of Crown Allotment 1B, Section 5, Block 1, Parish of Moolap, County of Grant	2375/987	816/188	William Hoare (Farmer)	11/03/1911	History
			Patrick O'Brien (Farmer)	22/02/1899	History
			Grace Giles	25/01/1891	History
Crown Allotment 1B, Section 5, Block 1, Parish of Moolap, County of Grant	816/188	Nil	Patrick O'Brien	17/07/1875	History

Table 3.1

3.2 Historical Aerial Photographs

A range of aerial photographs are contained within the Lotsearch report (**Appendix 1**) and described below.

Year	Observations
1947	• The Site is vacant land. It is surrounded by vacant land.
1962	• No change.
1964	• No change.
1970	• No change.
1978	• A structure (likely a house) is now present on the Southwest corner of the site. • There are now other structures on properties to the North and West.
1984	• No change.
1990	• No change on Site. There are new residential properties to the East and South. New structure on property to the Northwest.
1994	• No change on Site. There are new residential properties to the East and South.
2009	• No change on Site. There are new residential properties to the North.

3.3 Cathodic Protection Systems

A request was made through Energy Safe Victoria ('ESV') regarding the presence of Cathodic Protection Systems on Site. ESV confirmed that there are no Cathodic Protection Systems registered for the Site. The ESV response can be found in **Appendix 3.**

3.4 Defence PFAS Investigation & Management Program

Per the Lotsearch report (**Appendix 1**), there have been no previous Defence PFAS Investigation & Management Programs on Site. There have been no Defence PFAS Investigation & Management Programs conducted within 1km of the Site.

3.5 Airservices Australia National PFAS Management Program

Per the Lotsearch report (**Appendix 1**), there have been no previous Airservices Australia National PFAS Management Programs on Site. There have been no Airservices Australia National PFAS Management Programs conducted within 1km of the Site.

3.6 Defence 3 Year Regional Contamination Investigation Program

Per the Lotsearch report (**Appendix 1**), there have been no previous Defence 3 Year Regional Contamination Investigation Programs on Site. There have been no Defence 3 Year Regional Contamination Investigation Programs conducted within 1km of the Site.

3.7 Waste Management Facilities

Per the Lotsearch report (**Appendix 1**), there have been no Waste Management Facilities on Site or with 1km.

3.8 Former Gasworks

Per the Lotsearch report (**Appendix 1**), there have been no Gasworks on or within 1km of the Site.

3.9 Dry Cleaners, Motor Garages & Service Stations

Per the Lotsearch report (**Appendix 1**), there are no listed Dry Cleaners, Motor Garages or Service Stations on or within 1km of the Site.

3.10 Historical Mining Activity – Shafts

Per the Lotsearch report (**Appendix 1**), there are no shafts on or within 1km of the Site.

4.0 EPA RECORDS SEARCH

4.1 Current and Former EPA Priority Sites Register ('PSR') Review

Per the Lotsearch report (**Appendix 1**), no Clean Up or Pollution Abatement Notices (relevant to land and/or groundwater contamination) have been issued to the owner or occupier of the Site. There is 1 property within 1km of the Site listed on the current and former PSR. It will not affect the Site.

4.2 EPA PFAS Site Investigations

Per the Lotsearch report (**Appendix 1**), there have been no previous EPA PFAS Site Investigations on Site. There have been no EPA PFAS Site Investigations conducted within 1km of the Site.

4.3 Environmental Audit Reports

Per the Lotsearch report (**Appendix 1**), there have been no previous environmental audits on Site or within 1km.

4.4 Groundwater Quality Restricted Use Zones ('GQRUZ')

Per the Lotsearch report (**Appendix 1**) there are no zones within 1km of the Site. The Site is also not listed.

4.5 Current and Former EPA Licensed Activities

Per the Lotsearch report (**Appendix 1**), there is 1 current and former EPA licensed activity within 1km of the Site. There are none registered for the Site.

4.6 EPA Works Approvals

Per the Lotsearch report (**Appendix 1**), there are no EPA works approvals within 1km of the Site. There are none registered for the Site.

4.7 EPA Prescribed Waste Database

Per the Lotsearch report (**Appendix 1**), there is 1 listed treater or disposer within 1km of the Site. There are none registered for the Site.

4.8 EPA Victorian Landfill Register

Per the Lotsearch report (**Appendix 1**), there are no landfills registered on Site or within 1km.

5.0 SITE INSPECTION

Land Parcel Site Inspection Details	
Date and Time of Inspection	9.30am 02/08/2019
Weather Conditions	Overcast, slight breeze
Current Site Uses	Residential
Previous Site Uses	Farming
Site Coverage incl. condition and type of ground cover, e.g. bare ground, bitumen, concrete, gravel, etc.	Grassed paddocks, gravel driveway, concrete slab.
Current Adjacent Land Uses incl. the apparent condition of adjacent properties	Farming, residential and recreation.
Details of Structures on Site incl. location and condition of all visible features, including foundations, positions of former	House in good condition at Southwest, shed to the North of house in good condition, concrete water tank to the North of shed, shed in centre of Site

buildings, tanks, pits, wells, drains and bores.	which appears abandoned, deep open drains at front of property, sewer pit at North of property.
Process Details (in relation to previous Site use)	Nil Apparent.
Details of Chemical use incl. chemical storage and transfer areas, including the presence of waste or chemical containers	Nil Apparent.
Presence of above ground storage tanks	Water tank to the North of shed.
Presence of underground storage tanks	Nil Apparent.
Presence of septic tanks	Nil Apparent.
Details of waste handling	Nil Apparent.
Evidence of burning of burying of waste	Nil Apparent.
Spill Incidents	Nil Apparent.
Spill control systems, e.g. bund (materials of construction should be noted)	Nil Apparent.
Locations of dispensing or fill points	Nil Apparent.
Evidence of Fill Materials	Nil Apparent.
Presence of any stockpiled material	Soil from pool excavation.
Evidence of scrap and industrial or chemical waste	Nil Apparent.
Evidence of settlement, subsidence and disturbed ground	Nil Apparent.
Evidence of on Site or adjacent cut and fill activities or quarrying	Nil Apparent.
Evidence of Contamination (discoloured soil, polluted water, affected plant growth)	Nil Apparent.
Potential Asbestos containing material	Nil Apparent.
Animal populations	Nil Apparent.
Significant odours	Nil Apparent.
Assessment of soil loss or deposition that has occurred in the past and evaluation of the future erosion potential	Nil Apparent.
The direction of the flow of water run-off from the Site and adjacent properties	West.

The depth of any standing water, the direction and rate of flow of rivers, streams or canals, together with their flood levels and any tidal fluctuations	Nil Apparent.
Transformers	Nil Apparent.

6.0 POTENTIAL CONTAMINANTS OF CONCERN

According to AS4482.1[2], the Site has the following potential contaminants of concern due to its previous land uses:

- Fuels – TRHs, BTEXN, PAHs, Lead;
- Fertilisers – Copper, Cadmium; and
- Herbicides – Arsenic, Mercury, Organochlorines, Organophosphates.

There were no instances of Asbestos Containing Material ('ACM') observed on Site.

Preliminary Study Conclusions and Recommendations	
Conclusions	There is a Medium likelihood of chemical contamination of surface soils in the paddocks due to application of fertilisers and/or herbicides. There is a Low-Medium likelihood of chemical contamination of surface soils at the entrance to sheds from fuel/chemical spillage. There is a Low likelihood of contamination of soil at the Site due to industrial waste. There is a Low probability of occurrence of Acid Sulfate soils on Site. The Site is surrounded by low risk properties. There is no apparent soil staining, soil discolouration or odours at the Site. There is no apparent asbestos contamination. There is no apparent Prescribed Industrial Waste or Putrescible Waste. There is no apparent imported fill on Site.
Risk of Contamination	Based on information collected to this point, soils at the Site have a Low-Medium risk of contamination.
Recommendations	Surface soil samples from the paddocks are required to discount impacts due to fertiliser/herbicide contamination. Surface soil samples from the entrance of sheds are required to discount impacts due to hydrocarbon/fertiliser/herbicide contamination.

7.0 SOIL SAMPLING PROGRAM

This sampling program was undertaken on Site on 2 August 2019. Soil samples were collected by ESA staff from the surface soils (0-0.15m BGL) by mechanical auger. The approximate sampling points for the Site are shown in **Appendix 4**.

Table 7.0 illustrates the samples that were collected. The soil samples that were collected consisted of:

- CLAYEY SILT: Medium Plasticity, Orange/Brown, Loose, Moist.

[2] AS 4482.1-2005 Guide to the investigation and sampling of sites with potentially contaminated soil - Non-volatile and Semi-Volatile compounds

A Photoionisation Detector ('PID') was employed to screen samples for Volatile Organic Compounds ('VOC'). The following methodology was employed:

- A sample of soil was carefully collected with minimal disturbance that could cause loss of volatile constituents;
- The sample was immediately extruded into a plastic bag and sealed;
- The sealed bag containing the sample was crushed between the fingers to disperse the sample and release volatile constituents;
- The inlet tube of the PID was then inserted through a small opening in the bag into the headspace over the sample; and
- The PID response (in ppm) was measured within 2-3 seconds and the result recorded on the field form.#

The PID calibration form is attached as **Appendix 5.**

Sample ID	Sampling Point	Depth of Sample (m BGL)	Lab Analysis	PID (PPM)/Odour
SP01/0-0.15	SP01	0-0.15	NEPM Suite*	0.0/Nil
SP02/0-0.15	SP02	0-0.15	OC/OP Pesticides including Dieldrin and 15 Metals**	0.0/Nil
SP03/0-0.15	SP03	0-0.15	OC/OP Pesticides including Dieldrin and 15 Metals**	0.0/Nil
SP04/0-0.15	SP04	0-0.15	OC/OP Pesticides including Dieldrin and 15 Metals**	0.0/Nil
SP05/0-0.15 QC03 QC04	SP05	0-0.15	15 Metals**	0.0/Nil
SP06/0-0.15	SP06	0-0.15	OC/OP Pesticides including Dieldrin and 15 Metals**	0.0/Nil
SP07/0-0.15	SP07	0-0.15	OC/OP Pesticides including Dieldrin and 15 Metals**	0.0/Nil
SP08/0-0.15	SP08	0-0.15	OC/OP Pesticides including Dieldrin and 15 Metals**	0.0/Nil
SP09/0-0.15	SP09	0-0.15	NEPM Suite*	0.0/Nil
SP10/0-0.15	SP10	0-0.15	15 Metals**	0.0/Nil
TP01/0-0.15	TP01	0-0.15	TRH C6-C40/BTEXN/PAH/8 Metals & OC/OP Pesticides***	0.0/Nil
TP02/0-0.15	TP02	0-0.15	TRH C6-C40/BTEXN/PAH/8	0.0/Nil

Sample ID	Sampling Point	Depth of Sample (m BGL)	Lab Analysis	PID (PPM)/Odour
			Metals & OC/OP Pesticides***	
QC01 (Trip Blank)	N/A	N/A	TRH C6-C10 & BTEXN	N/A
QC02 (Field Blank)	SP01	N/A	OC/OP Pesticides including Dieldrin and 15 Metals**	N/A
QC05 (Rinsate Blank)	TP02	N/A	OC/OP Pesticides including Dieldrin and 15 Metals**	N/A

Table 7.0

* = 15 Metals including As, Ba, Be, B, Cd, Cr, Co, Cu, Hg, Mn, Ni, Pb, Se V, Zn, TRH (C6-C36 or 40) / BTEXN, PAH/Phenols (16 PAHs & 12 Phenols), OC/OP Pesticides Including Triazine, Pesticides (Atrazine) and Bifenthrin, PCB, Cyanide – WAD, Chromium – Hexavalent (Alkaline Leach)

** = 15 Metals including As, Ba, Be, B, Cd, Cr, Co, Cu, Hg, Mn, Ni, Pb, Se V, Zn

*** = 8 Metals including As, Cd, Cr, Cu, Hg, Ni, Pb, Zn

The following sections describe the guidelines, standards and investigation methods adopted for the soil sampling program.

7.1 Relevant Guidelines and Standards

The sampling program was undertaken in accordance with the following guidelines, standards and policies:

- Australia Standard (AS 4482.1) - Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile compounds (Standards Australia, 2005);
- Australia Standard (AS 4482.2) - Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances (Standards Australia, 1999);
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (Amended); and
- State Environment Protection Policy (Prevention and Management of Contamination of Land) No. S95, EPA Victoria, June 2002.

7.2 Quality Assurance / Quality Control

7.2.1 Environmental Site Assessments Quality Assurance ('QA') Program

Environmental Site Assessments has developed and implemented a Quality Assurance Program in general accordance with the following guidelines:

- Australia Standard (AS 4482.1) - Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile compounds (Standards Australia, 2005); and
- National Environment Protection Council (NEPC) - National Environment Protection (Assessment of Site Contamination) Measure (NEPM) - Schedule B3 Guideline on Laboratory Analysis of Potentially Contaminated Soils, 1999 (Amended).

As part of the Quality Assurance Program, Environmental Site Assessments ensures that the following methodology is employed:

- The use of appropriately qualified and trained environmental scientists to perform intrusive works;
- The use of standardised field sheets to record the findings of the Site investigations;
- The collection and analysis of Quality Control samples as per AS 4482.1;
- The use of Chain of Custody procedures to ensure that sample integrity is maintained through the transport and handling stages; and
- Only using NATA accredited laboratories for the analysis of samples collected during the investigation activities.

As per the Environmental Site Assessments Quality Assurance Program, the following data quality indicators were used for the assessment of the laboratory analytical data:

- All sample analysis to be conducted using NATA registered methods in accordance with NEPM 1999 (Amended) guidelines;
- Laboratory method blank analysis required to be below the Limit of Reporting (LOR); and
- Surrogate compound concentrations required to be spiked at similar concentration to sample result.

7.2.2 Environmental Site Assessments Quality Control ('QC') Program

The overall precision of field quality control samples, laboratory split samples and laboratory duplicates is generally assessed by their Relative Percentage Difference (RPD), given by:

$$\frac{(C1 - C2)\ x\ 100}{\frac{(C1 + C2)}{2}}$$

Where:

C1 is the primary sample concentration.

C2 is the duplicate sample concentration.

The Relative Percentage Difference (RPD) of duplicated analysis were calculated and compared to the following criteria for acceptability. The acceptance criteria are listed in AS4482.1 (2005):

- Less than 30-50% for field duplicates (blind replicate and split samples);
- Less than 30% for laboratory duplicates where the detection is less than 10 times the LOR;
- Less than 20% for laboratory duplicates where the detection is greater than 10 times the LOR;
- RPDs for control spike duplicates will be compared to an acceptable limit of 20%;
- RPDs for matrix spike duplicates will be compared to an acceptable limit of 20%; and
- Percentage recoveries of control spikes and matrix spikes will be compared to an acceptable range of 70% – 130%. Where this range is exceeded, reference to the laboratories internal data quality objective limits will be made. In addition, percentage recoveries of surrogates will also be compared to the USEPA surrogate recovery limits.

7.2.3 Sample Documentation

All samples collected were labelled in a clear and precise way for proper identification in the field and for tracking in the laboratory.

The samples had identifiable and unique numbers. The sample labels contained the following information:

- Company name;
- Name of sampler;
- Sample ID; and
- Date/Time sample was collected.

Chain-of-custody forms were used to document sample collection and transport to laboratories for analysis. All sample transports for analysis were accompanied by a chain-of-custody form.

The chain-of-custody forms identified the contents of each transport and maintained the custodial integrity of the samples. The coolers in which samples were stored were sealed with self-adhesive custody seals. All custody seals were signed.

7.2.4 Packaging and Transport

All sample containers were placed in a plastic cooler. The following outlines the packaging procedures that were followed for samples:

- When ice was used, it was packed in zip-locked, double plastic bags. The drain plug of the cooler was sealed with fiberglass tape to prevent melting ice from leaking out of the cooler;
- The bottom of the cooler was lined with bubble wrap to prevent breakage during transport;
- All glass sample containers were enclosed in bubble wrap to prevent breakage;
- Where required, empty space in the cooler was filled with bubble wrap to prevent movement and breakage during transport;
- Ice used to cool samples was placed on top and around the samples to chill them to the correct temperature; and
- Each cooler was securely taped shut with signed custody seals.

7.2.5 Field Notes

The following information was recorded during the collection of each sample:

- Sample location and description;
- Sampling area sketch showing sample location and measured distances (where required);
- Sampler's name(s);
- Date and time of sample collection;
- Sample ID;
- Type of soil/material encountered (Fill, Natural etc.);
- PID readings;
- Field observations and details related to analysis or integrity of samples (e.g., weather conditions, noticeable odours, colours etc.);
- Soil descriptions as per AS1726-1993; and
- Sample preservation details.

In addition to the sampling information, the following specific information was also recorded in the field logbook:

- Team members and their responsibilities;
- Time of arrival/entry on Site and time of Site departure;
- Other personnel on Site;
- Summary of any meetings or discussions;
- Deviations from sampling plans;
- Changes in personnel and responsibilities with reasons for the changes; and
- Calibration readings for any equipment used and equipment model and serial number.

7.3 Results of Analysis

Investigation levels and **screening levels** are the concentrations of a contaminant above which further appropriate investigation and evaluation will be required.

Investigation and screening levels provide the basis of Tier 1 risk assessment. A Tier 1 assessment is a risk-based analysis comparing Site data with generic investigation and screening levels for various land uses to determine the need for further assessment or development of an appropriate management strategy. The application of investigation and screening levels is subject to a range of limitations.

Health investigation levels ('HILs') have been developed for a broad range of metals and organic substances. The HILs are applicable for assessing human health risk via all relevant pathways of exposure. The HILs are generic to all soil types and apply generally to a depth of 3m below the surface for residential use. Site-specific conditions should determine the depth to which HILs apply for other land uses.

Health screening levels ('HSLs') have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via the inhalation and direct contact pathways. The HSLs depend on specific soil physicochemical properties, land use scenarios, and the characteristics of building structures. They apply to different soil types, and depths below surface to >4m.

Ecological screening levels ('ESLs') have been developed for selected petroleum hydrocarbon compounds and total petroleum hydrocarbon (TPH) fractions and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse- and fine-grained soils and various land uses. They are generally applicable to the top 2m of soil.

The laboratories used for conducting the soil analysis were Australian Laboratory Services Pty Ltd ('ALS') and Eurofins MGT ('MGT'). Both ALS and MGT are NATA certified for the analysis undertaken.

The comparison tables for laboratory results are attached in **Appendix 6**. All chain of custody forms, certificates of analysis and laboratory QA/QC documents are in **Appendix 7.** The laboratory report numbers are EM1912482 & 669381.

The laboratory results were compared with NEPM 1999 (Amended) guidelines for HIL A, HSL A/B, and ESLs (Urban Residential).

<u>The comparison results were as follows:</u>

- There were no results in excess of NEPM HIL A, HSL A/B, and ESLs (Urban Residential) upper thresholds.

As per the Ministerial Direction No. 1, the Site is suitable for a sensitive use (defined as residential, child-care centre, pre-school centre or primary school), agriculture or public open space.

7.4 Laboratory QA/QC

As part of their NATA accreditation, ALS and MGT perform internal duplicate analysis of samples for comparison of results to demonstrate precision. Laboratory standards including matrix spike samples, laboratory control samples and surrogates are also conducted as a basis to demonstrate accuracy. In addition, internal laboratory blank samples are run to assess the potential for laboratory equipment errors. The laboratory QA/QC results are attached in **Appendix 7.**

7.4.1 ALS Environmental Laboratory

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Laboratory Control outliers occur.
- For soil, Matrix Spike outliers occur.
- For all matrices, no Surrogate Recovery outliers occur.

7.4.2 Eurofins MGT Laboratory

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Laboratory Control outliers occur.
- For all matrices, no Matrix Spike outlier occur.
- For all matrices, no Surrogate Recovery outliers occur.

7.4.3 Sample Holding Times and Sample Receipt Temperature

Sample holding times were within acceptable ranges from collection to extraction. The documented temperature of samples upon receipt at the respective laboratory was within an acceptable range.

7.4.4 Conclusion

A review of the laboratory reports indicates that ALS and MGT have met their internal acceptance criteria for the quality control samples.

7.5 Field Quality Control Samples

7.5.1 Blind Replicate and Split samples

The relative percentage difference was calculated for the blind (QC03) and split samples (QC04). The comparison table is attached to **Appendix 6.**

For the blind sample there was an RPD exceedance for Vanadium (76%).

For the split sample there was an RPD exceedance for Manganese (60%).

The following comments should be noted when interpreting the elevated RPD calculation/s:

- Where results were outside the acceptable range, these were all less than an order of magnitude from the original; and
- It is considered that the variations reported may be due to differences in inter-lab testing procedures and/or heterogeneity.

RPD exceedances are not considered to adversely affect the data quality and hence, alter the findings of the investigation. Where the reported concentrations of the quality control sample are higher than the primary samples, the higher concentrations were adopted for comparison against the relevant screening criteria.

7.5.2 Trip, Field and Rinsate Blanks

Trip blanks (QC01) evaluate if the transport and handling procedures are introducing contaminants into the samples, and if cross contamination in the form of VOC migration has occurred between the collected samples. Field blanks (QC02) evaluate whether contaminants have been introduced into the samples during the sampling due to contamination from sample containers. Equipment rinsate blanks (QC05) evaluate field sampling and decontamination procedures.

Analysis of these quality control samples indicate that transport and handling, sample containers and decontamination procedures have not resulted in cross-contamination of the collected soil samples. The table of results is attached in **Appendix 6.**

There were no analyte levels greater than the limit of reporting ('LOR').

8.0 REFERENCES

- Ministerial Direction No. 1 – Potentially Contaminated Land ('Direction No. 1')
- National Environment Protection Council 1999 (As Amended) - National Environment Protection (Assessment of Site Contamination) Measure – Guideline on Investigation Levels for Soil and Groundwater.
- Standards Australia. 2005. AS 4482.1, Guide to the sampling and investigation of potentially contaminated soil, Part 1: Non-volatile compounds. Standards Association of Australia
- Standards Australia. 1999. AS4482.1, Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances. Standards Association of Australia

DISCLAIMER

This disclaimer, together with any limitations specified in the report, applies to use of this report.

This report was prepared in accordance with a contracted scope of services. There were a series of cost, time and other constraints which have affected the accuracy and completeness of investigations undertaken.

This report has been prepared solely for use by, and is confidential to; the client who contracted the scope of services and Environmental Site Assessments accepts no responsibility for its use by other persons.

The contract for the preparation of this report contains express limitations upon the liability of Environmental Site Assessments which should be considered carefully. This report is subject to copyright protection and the copyright owner reserves its rights. This report does not constitute legal advice.

This report must be read in conjunction with the Statement of Qualifications and Limitations contained within it.

STATEMENT OF QUALIFICATIONS AND LIMITATIONS

It is not possible to identify all contamination or potential contaminants in or under the surface of the Site. This is an intrinsic risk when investigating potentially and contaminated Sites. As such, Environmental Site Assessments has prepared the following information which details the limitations of this environmental report.

In preparing this report, Environmental Site Assessments has relied on client/ third party information which was not verified by Environmental Site Assessments and Environmental Site Assessments does not accept responsibility for omissions or inaccuracies in the client/ third party information.

This report is based solely on the specific instructions received from its client and/or the scope of work agreed between Environmental Site Assessments and its client. Those instructions and/or scope of work may not be fully described in this report.

This report is based on the Site conditions identified at the time of inspection. It is not possible to identify all contamination or potential contaminants in or under the surface of the Site.

Investigations undertaken in respect of this report may have been constrained by the particular Site conditions, such as the location of buildings, services and vegetation. Further, changes that may have occurred after inspection.

As a result of these matters, not all relevant Site history, contaminants or potential for contamination may have been identified in this report. No warranties express or implied, as to the accuracy or completeness of the matters contained within it are made.

Although normal standards of professional practice have been applied, the absence of any identified potential for air, soil or groundwater impacts on the subject property should not be interpreted as a conclusion that impacts do not exist on the Site.

Subsurface conditions can vary across a particular Site, which cannot be wholly defined by investigation.

As a result, it is unlikely that the results and estimations presented in this report will reflect the extremes of conditions within the Site. Subsurface conditions including impact concentrations can change in a limited period of time. Any information provided may be based on "spot" tests. Conditions may vary between or beyond those locations from the interpreted conditions based on the actual data.

The analyses, evaluations, opinions and conclusions presented in this report are based on the information provided, and they could change if the information is in fact found to be unrepresentative of conditions between sampling and analysis locations.

The assessment and remediation of contamination is a developing science. Clean Up technology is constantly changing as scientific information on data collection, risk assessment, toxicology and remediation technologies are published. Further, opinions can vary as to the criterion for whether particular conditions constitute contamination, and if so how that contamination should be addressed or remediated. Different persons might reasonably or otherwise form opinions different to those of Environmental Site Assessments.

Use of the Site for any purpose may require planning and other approvals and, in some cases, EPA and accredited Site auditor approvals. Environmental Site Assessments offers no opinion as to the likelihood of obtaining any such approvals, or the conditions and obligations which such approvals may impose, which may include the requirement for significant environment works.

The ongoing use of the Site or use of the Site for a different purpose may require the owner/ user to manage and/ or remediate Site conditions, such as contamination and other conditions, including but not limited to conditions referred to in this report. This report is not intended to be used for the purposes of tendering, programming of works, refurbishment works or demolition works unless used in conjunction with a specification detailing the extent of the works.

To ensure its contextual integrity, the report must be read in its entirety and should not be copied, distributed or referred to in part only. Environmental Site Assessments makes no determination or recommendation regarding a decision whether to acquire or provide financing with respect to the Site.

Environmental Site Assessments

Appendix 1: Lotsearch Report

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Address: 31-49 Melaluka Road, Leopold, VIC 3224

Date: 31 Jul 2019 12:20:47

Reference: LS007712 EP

Table of Contents

Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a confidence is given under the field heading “LocConf” or “Location Confidence”.

Location Confidence	Description
Premise Match	Georeferenced to the site location / premise or part of site
Area 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
Buffered Point	Feature is a buffered point
Network of Features	Georeferenced to a network of features

Dataset Listing

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

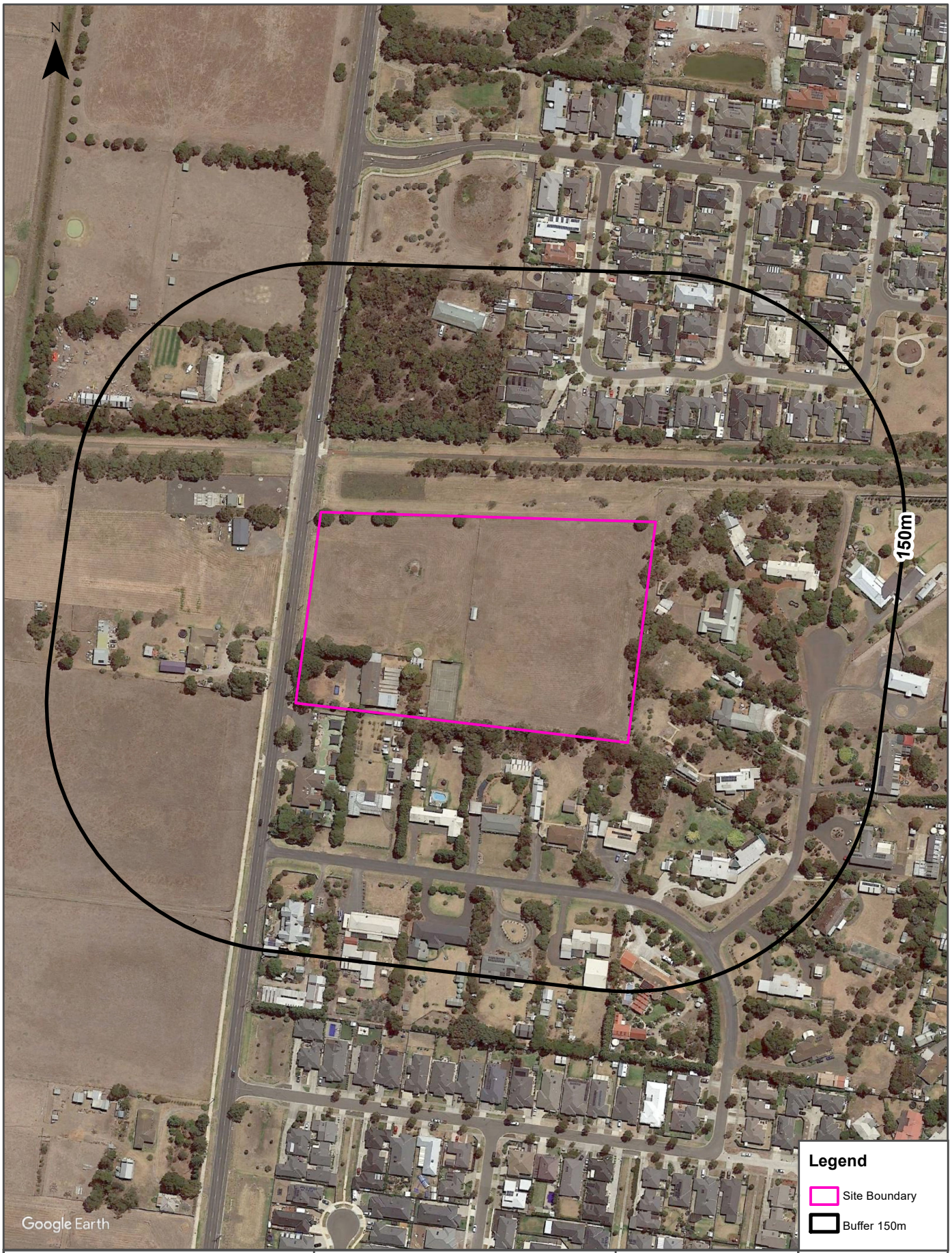
Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features in Buffer
Topographic and Cadastre data	State Government Victoria - Department of Environment, Land, Water & Planning	05/06/2019	05/06/2019	Quarterly	-	-	-	-
Current EPA Priority Sites	Environment Protection Authority (Vic)	05/07/2019	31/05/2019	Monthly	1000	0	0	2
Former EPA Priority Sites & other Remedial Notices	Environment Protection Authority (Vic)	21/06/2019	13/05/2019	Monthly	1000	0	0	1
EPA PFAS Site Investigations	Environment Protection Authority (Vic)	15/07/2019	13/12/2018	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program	Department of Defence	01/07/2019	01/07/2019	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	01/07/2019	01/07/2019	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	01/07/2019	01/07/2019	Monthly	2000	0	0	0
EPA Environmental Audit Reports	Environment Protection Authority (Vic)	09/07/2019	09/07/2019	Monthly	1000	0	0	0
EPA Groundwater Zones with Restricted Uses	Environment Protection Authority (Vic)	17/06/2019	17/06/2019	Monthly	1000	0	0	0
Current EPA Licensed Activities	Environment Protection Authority (Vic)	17/07/2019	17/07/2019	Monthly	1000	0	0	1
Former EPA Licensed Activities	Environment Protection Authority (Vic)	17/07/2019	17/07/2019	Monthly	1000	0	0	1
EPA Works Approvals	Environment Protection Authority (Vic)	17/07/2019	17/07/2019	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	07/05/2019	07/03/2017	Quarterly	1000	0	0	0
Statewide Waste and Resource Recovery Infrastructure Plan Facilities	State Government Victoria - Department of Sustainability	27/11/2014	31/12/2012	None planned	1000	0	0	0
EPA Prescribed Industrial Waste	Environment Protection Authority (Vic)	24/04/2019	24/04/2019	Quarterly	1000	0	0	4
EPA Victorian Landfill Register	Environment Protection Authority (Vic)	01/07/2019	01/07/2019	Quarterly	1000	0	0	0
Former Gasworks	Various historical sources collated by Lotsearch	15/08/2017	15/08/2017	Not required	1000	0	0	0
UBD Business Directory 1970 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1970 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1960-62 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1960-62 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1950 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1950 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
Sands & McDougall's Directory 1945 (Premise & Intersection Matches)	Sands & McDougall, State Library Victoria			Not required	150	0	0	0
Sands & McDougall's Directory 1945 (Road & Area Matches)	Sands & McDougall, State Library Victoria			Not required	150	-	0	0
Sands & McDougall's Directory 1925 (Premise & Intersection Matches)	Sands & McDougall, State Library Victoria			Not required	150	0	0	0
Sands & McDougall's Directory 1925 (Road & Area Matches)	Sands & McDougall, State Library Victoria			Not required	150	-	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features in Buffer
Sands & McDougall's Directory 1905 (Premise & Intersection Matches)	Sands & McDougall, State Library Victoria			Not required	150	0	0	0
Sands & McDougall's Directory 1905 (Road & Area Matches)	Sands & McDougall, State Library Victoria			Not required	150	-	0	0
Historical Business Directory Drycleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant; Sands & McDougall, State Library Victoria			Not required	500	0	0	0
Historical Business Directory Drycleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant; Sands & McDougall, State Library Victoria			Not required	500	-	0	0
Features of Interest	State Government Victoria - Department of Environment, Land, Water & Planning	08/07/2019	08/07/2019	Quarterly	1000	0	1	49
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	1	1	1
Groundwater Salinity	State Government Victoria - Department of Environment, Land, Water & Planning	14/08/2015	29/08/2012	Unknown	0	1	-	-
Depth to Watertable	State Government Victoria - Department of Environment, Land, Water & Planning	14/08/2015	29/08/2012	Unknown	0	1	-	-
Surface Elevation	State Government Victoria - Department of Environment, Land, Water & Planning	14/08/2015	23/09/2013	Unknown	0	1	-	-
Basement Elevation	State Government Victoria - Department of Environment, Land, Water & Planning	14/08/2015	23/09/2013	Unknown	0	1	-	-
Groundwater Boreholes WMIS	State Government Victoria - Department of Environment, Land, Water & Planning	01/02/2019	31/01/2019	Quarterly	2000	0	1	33
Groundwater Boreholes Earth Resources Database	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	27/07/2018	17/02/2010	As required	2000	0	0	3
Groundwater Boreholes Fed Uni	Federation University Australia	21/12/2017	07/01/2014	As required	2000	0	0	31
Historical Mining Activity - Shafts	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	18/10/2018	20/07/2018	As required	1000	0	0	0
Geological Units 1:50,000	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	13/01/2015	24/06/2014	Unknown	1000	2	-	2
Geological Structures 1:50,000	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	13/01/2015	24/06/2014	Unknown	1000	0	-	0
Dykes and Marker Beds 50k	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	13/01/2015	24/06/2014	Unknown	1000	0	-	0
Shear zones 250k	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	13/01/2015	24/06/2014	Unknown	1000	0	-	0
Atlas of Australian Soils	CSIRO	19/05/2017	17/02/2011	As required	1000	1	1	1
Victorian Soil Type Mapping	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	24/08/2017	21/03/2016	Unknown	1000	1	1	3
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	1
Coastal Acid Sulfate Soils	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	28/03/2017	30/03/2011	None planned	1000	0	0	0
Planning Scheme Zones	State Government Victoria - Department of Environment, Land, Water & Planning	01/07/2019	26/06/2019	Monthly	1000	1	6	34
Planning Scheme Overlay	State Government Victoria - Department of Environment, Land, Water & Planning	01/07/2019	26/06/2019	Monthly	1000	0	2	13
Commonwealth Heritage List	Australian Government Department of the Environment and Energy - Heritage Branch	16/01/2019	31/07/2018	Unknown	1000	0	0	0
National Heritage List	Australian Government Department of the Environment and Energy - Heritage Branch	16/01/2019	28/09/2018	Unknown	1000	0	0	0
Victorian Heritage Register	State Government Victoria - Department of Environment, Land, Water & Planning	10/07/2019	10/07/2019	Quarterly	1000	0	0	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features in Buffer
Cultural Heritage Sensitivity	State Government Victoria - Department of Planning and Community Development	10/07/2019	20/06/2019	Quarterly	1000	0	0	0
Bushfire Prone Area	State Government Victoria - Department of Transport, Planning and Local Infrastructure	28/05/2019	04/04/2019	Quarterly	1000	1	1	1
Fire History	State Government Victoria - Department of Environment, Land, Water & Planning	08/07/2019	27/04/2019	Quarterly	1000	0	0	0
Flood - 1 in 100 Year Modelled Flood Extent	State Government Victoria - Department of Environment, Land, Water & Planning	10/07/2019	31/12/2014	Quarterly	1000	1	1	1
Victorian Coastal Inundation Sea Level Rise	State Government Victoria - Department of Environment, Land, Water & Planning	10/04/2018	24/10/2017	Unknown	1000	0	0	0
Native Vegetation (Modelled 2005 Ecological Vegetation Classes)	State Government Victoria - Department of Environment, Land, Water & Planning	13/01/2015	31/12/2005	None planned	1000	1	1	1
Ramsar Wetland Areas in Victoria	State Government Victoria - Department of Environment, Land, Water & Planning	28/03/2017	24/06/2013	None planned	1000	0	0	0
Groundwater Dependent Ecosystems Atlas	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	1	1	2
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	1	3	4

Aerial Imagery 2019

31-49 Melaluka Road, Leopold, VIC 3224



Scale:
0 25 50 100
Meters

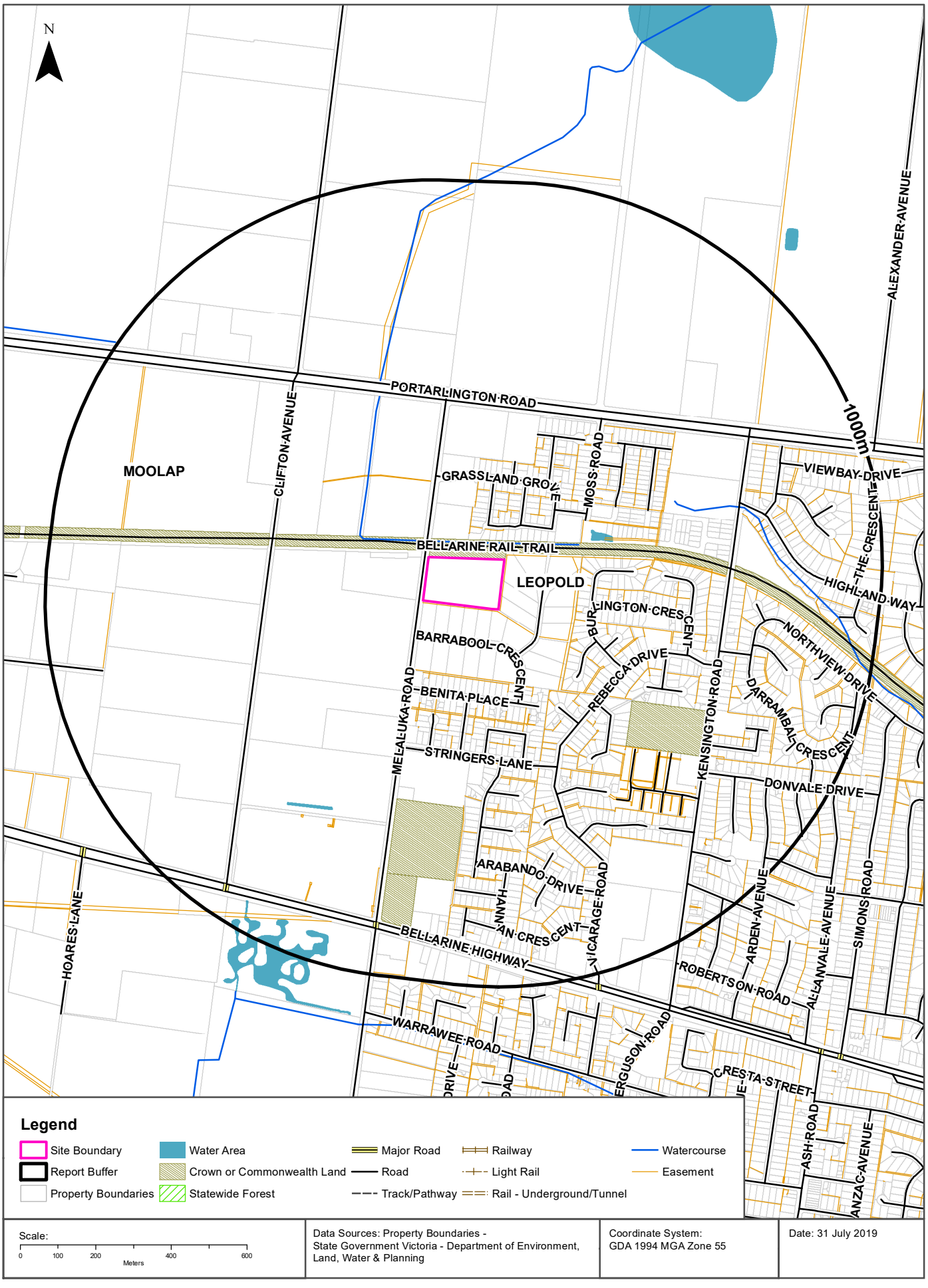
Data Source Aerial Imagery: © 2019 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 55

Date: 30 July, 2019

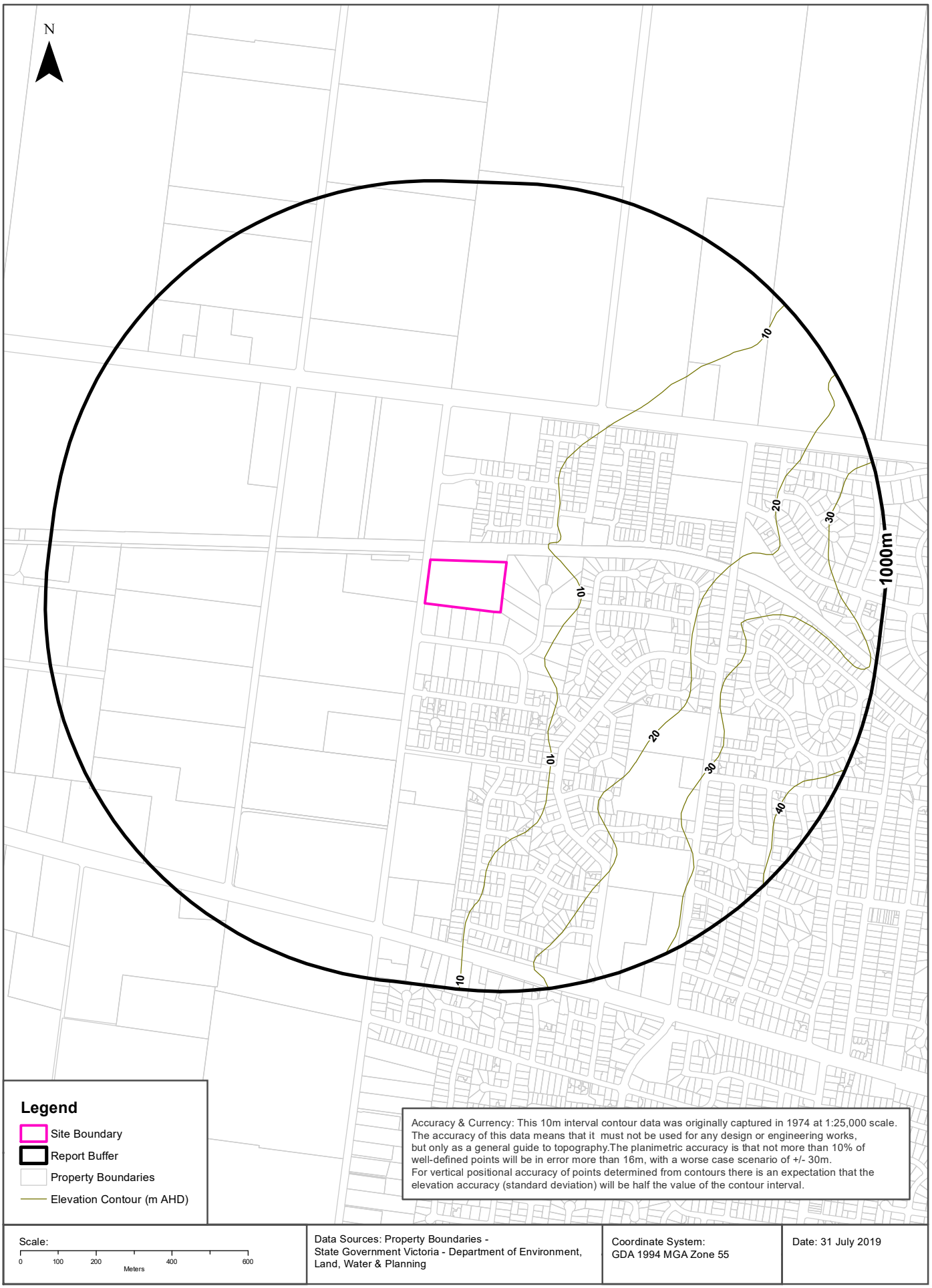
Topographic Data

31-49 Melaluka Road, Leopold, VIC 3224



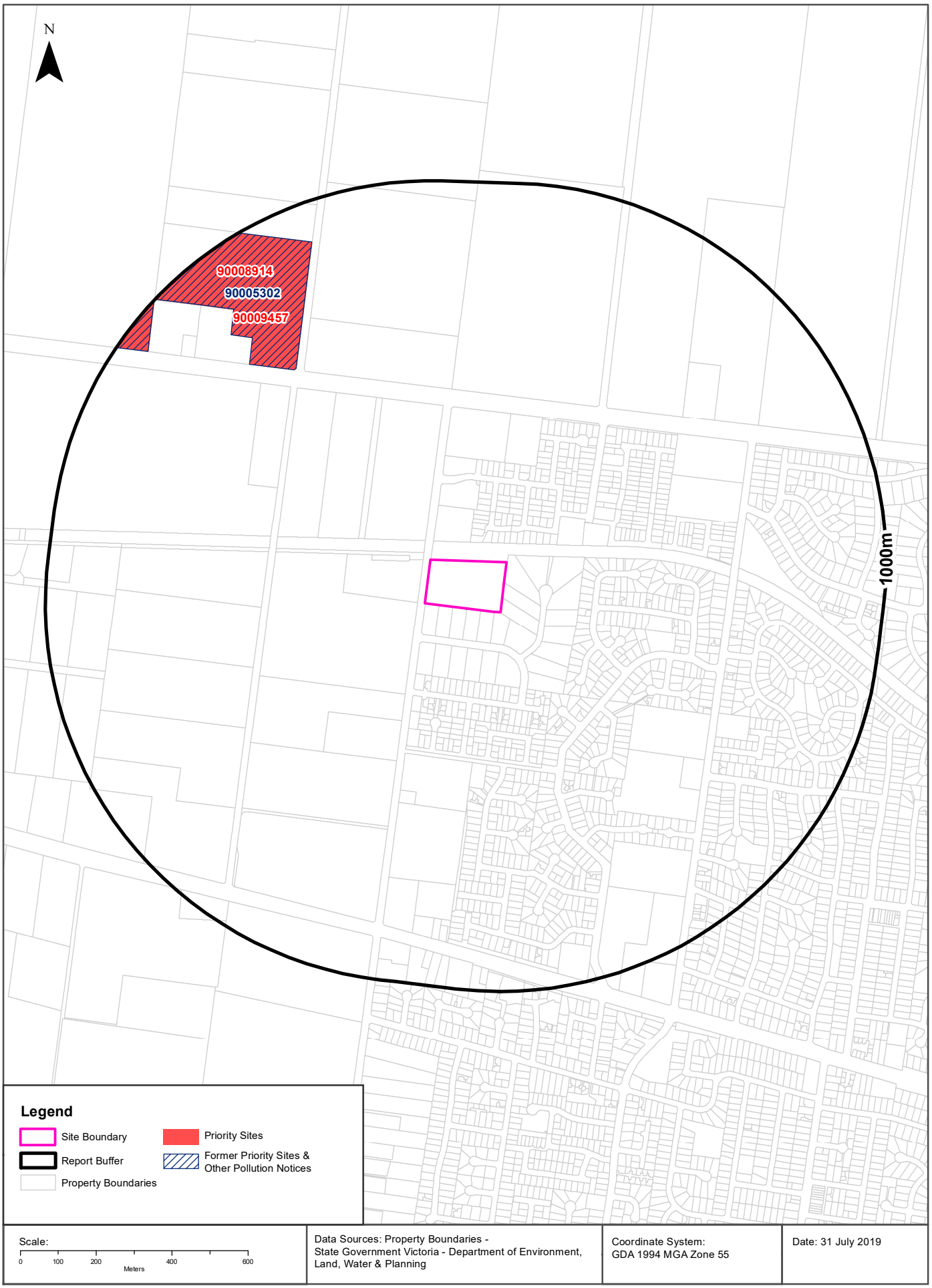
Elevation Contours (m AHD) 10m Interval at 1:25,000

31-49 Melaluka Road, Leopold, VIC 3224



EPA Records - Priority Sites & Pollution Notices

31-49 Melaluka Road, Leopold, VIC 3224



EPA Records

31-49 Melaluka Road, Leopold, VIC 3224

Current EPA Priority Sites Register

Sites on the current EPA priority sites register that exist within the dataset buffer:

Notice No	Address	Suburb	Issue	Loc Conf	Dist (m)	Direction
90008914	420 Point Henry RD	POINT HENRY	Contaminated soil is retained and managed onsite. Requires ongoing management.	Premise Match	617m	North West
90009457	420 Point Henry RD	POINT HENRY	Former Industrial Site. Requires assessment and/or clean up.	Premise Match	617m	North West

Priority Sites Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

Former EPA Priority Sites & Other Pollution Notices

Sites within the dataset buffer that have been issued a Pollution Notice:
Note. Due to pollution notices being revoked and removed from published lists this is not an exhaustive list of all past pollution notices.

Notice No	Notice Type	Company	Address	Suburb	Status	Issue	Date Issued	Loc Conf	Dist	Dir
90005302	Previous Priority Notice, Amemded Clean Up Notice	ALCOA OF AUSTRALIA LIMITED	420 Point Henry RD	POINT HENRY	Previous Priority Notice	Former Industrial Site. Requires assessment and/or clean up.	30/03/2015	Premise Match	617m	North West

Pollution Notice Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

PFAS Investigation Sites

31-49 Melaluka Road, Leopold, VIC 3224

EPA PFAS Site Investigations

Sites being investigated by the EPA for PFAS contamination within the dataset buffer:

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

EPA PFAS Site Investigations Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

Defence PFAS Investigation & Management Program

Sites being investigated or 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 Investigation & 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

31-49 Melaluka Road, Leopold, VIC 3224

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 Records

31-49 Melaluka Road, Leopold, VIC 3224

EPA Environmental Audits

EPA environmental audit records that exist within the dataset buffer:
Note. Please click on CARMS No. to activate a hyperlink to online documentation. If link does not work, documentation may still be accessible via the EPA Interaction Portal.

CARMS No	Transaction No	Site	Address	Suburb	Date Complete	Loc Conf	Distance	Direction
N/A	No records in buffer							

Environmental Audit Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

EPA Records

31-49 Melaluka Road, Leopold, VIC 3224

EPA Groundwater Zones with Restricted Uses

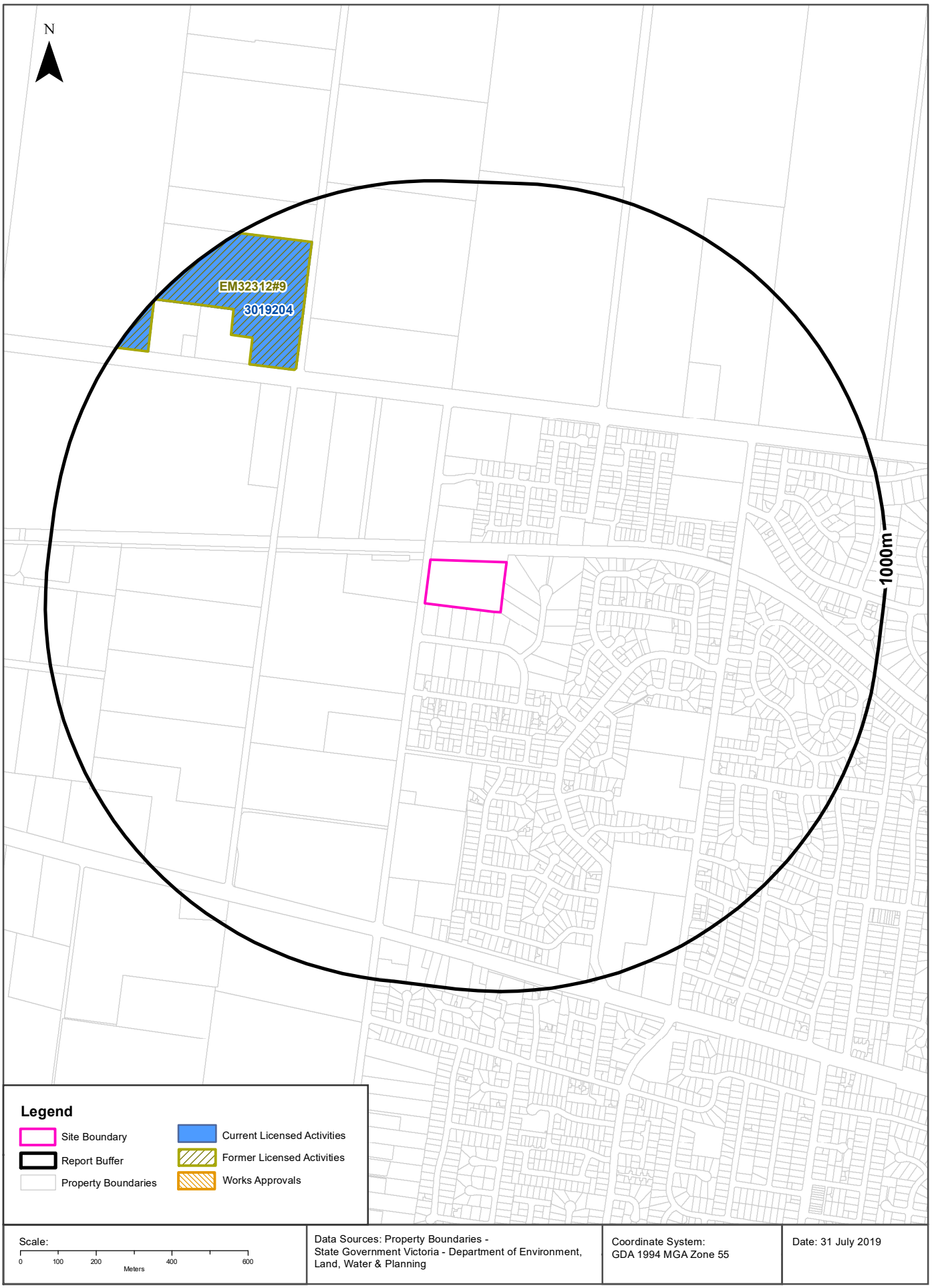
EPA GQRUZ records that exist within the dataset buffer:
Note. Please click on CARMS No. to activate a hyperlink to online documentation.

CARMS No	EPA Id	Site History	Site Address	Restricted Uses	Loc Conf	Distance	Direction
N/A	No records in buffer						

Environmental GQRUZ Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

EPA Records - Licensed Activities & Works Approvals

31-49 Melaluka Road, Leopold, VIC 3224



EPA Records

31-49 Melaluka Road, Leopold, VIC 3224

EPA Licensed Activities

EPA licensed activities that exist within the dataset buffer:

Trans No	Licence No	Licence Type	Organisation	Premise Ref	Premise Address 1	Premise Address 2	Activities	Loc Conf	Dist (m)	Direction
3019204	11481	Licence	ALCOA OF AUSTRALIA LIMITED [POINT HENRY]		420 POINT HENRY RD	POINT HENRY VIC 3221	A01 Prescribed Industrial Waste Management; I02 Metal Melting Works	Premise Match	617m	North West

Licensed Activity Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

Former EPA Licensed Activities

Former EPA licensed activities that exist within the dataset buffer:

Licence No	Organisation	Premise Address	Suburb	Activities	Loc Conf	Dist (m)	Direction
EM32312#9	ALCOA OF AUSTRALIA LIMITED	POINT HENRY RD	POINT HENRY VIC 3221	A01 Prescribed Industrial Waste Management; I01 Primary Metallurgical Works	Premise Match	617m	North West

Former Licensed Activity Data Custodian: State Government Victoria - Environmental Protection Authority (EPA)

EPA Works Approvals

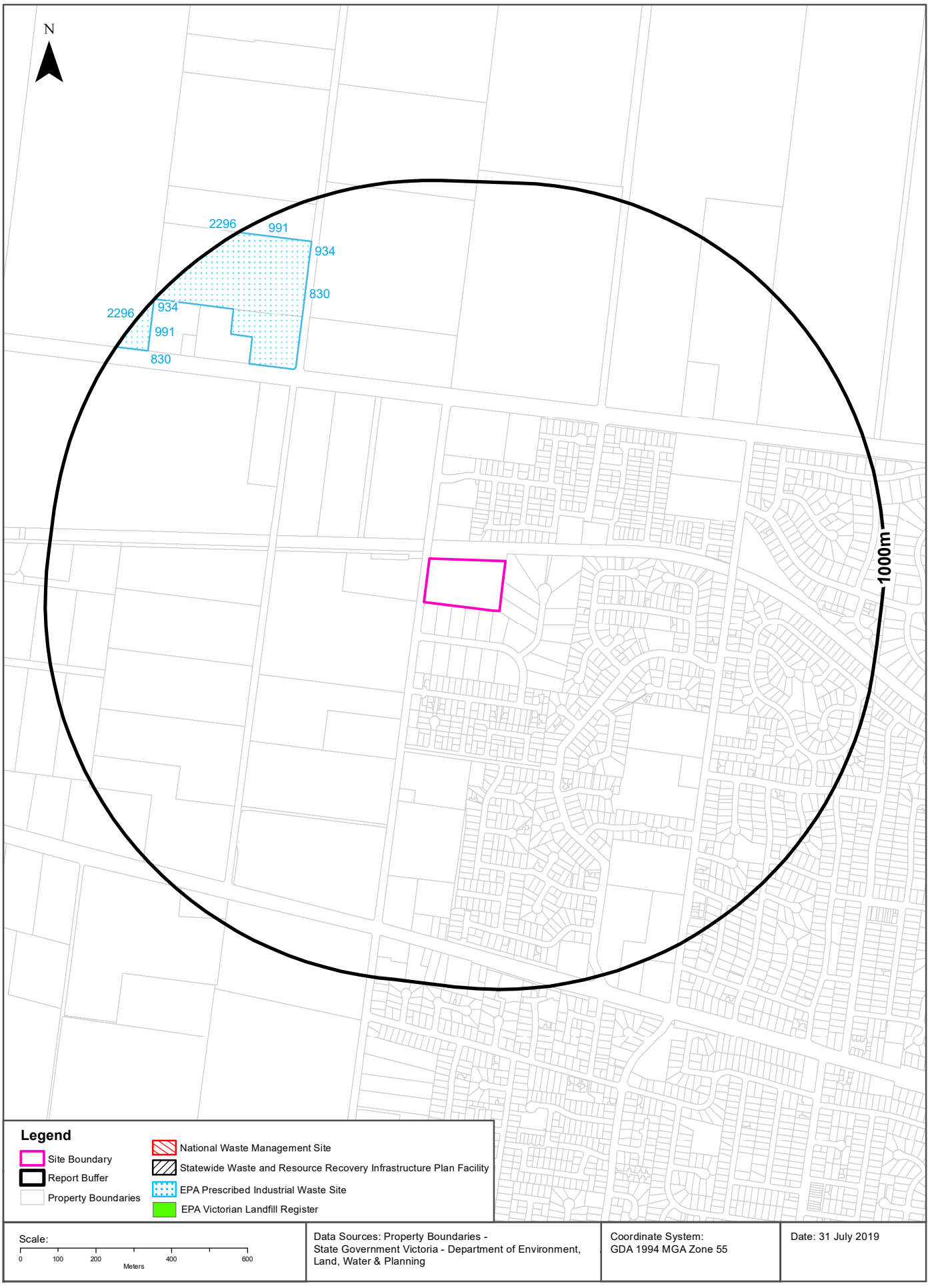
EPA works approvals that exist within the dataset buffer:

Transaction No	Status	Approval No	Organisation	Premise Address	Suburb	Scheduled Categories	Loc Conf	Dist (m)	Direction
N/A	No records in buffer								

Works Approvals Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

Waste Management Facilities & Landfills

31-49 Melaluka Road, Leopold, VIC 3224



Waste Management Facilities & Landfills

31-49 Melaluka Road, Leopold, VIC 3224

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: Australian Government Geoscience Australia

Statewide Waste and Resource Recovery Infrastructure Plan Facilities

Statewide Waste and Resource Recovery Infrastructure Plan Facilities within the dataset buffer:

Map Id	Owner	Site Name	Address	Suburb	Category	Sub Category	Loc Conf	Distance	Direction
N/A	No records in buffer								

SWRRIPF Data Source: State Government Victoria - Department of Sustainability

EPA Prescribed Industrial Waste

EPA Prescribed Industrial Waste treaters, disposers and permitted transporters within the dataset buffer:

Map Id	Company Name	Address	Suburb	Treatment /Disposal	Transport	Accredited Agent	EPA List Status	Loc Conf	Dist' (m)	Direct
830	ALCOA OF AUSTRALIA LIMITED [POINT HENRY]	420 POINT HENRY RD	POINT HENRY VIC 3221	Yes	No	No	Current EPA List	Premise Match	617m	North West
2296	INDUSTRIAL DEMOLITION SERVICES PTY LTD [MOOLAP]	ALCOA ROLLING MILL, POINT HENRY ROAD	MOOLAP VIC 3221	No	Yes	No	Current EPA List	Premise Match	617m	North West
991	KELCAR (GEELONG) PTY LTD [MOOLAP]	ALCOA GEELONG POINT HENRY RD	MOOLAP VIC 3221	No	Yes	No	Previous EPA List	Premise Match	617m	North West
934	S & B BLASTING CO PTY LTD [GEELONG]	ALCOA POINT HENRY RD	GEELONG VIC 3220	No	Yes	No	Previous EPA List	Premise Match	617m	North West

Prescribed Industrial Waste Data Source: State Government Victoria - Environment Protection Authority (EPA)

EPA Victorian Landfill Register

EPA Victorian Landfill Register sites within the dataset buffer:

Landfill Register No.	Site	Address	Operating Status	Est. Year Of Closure	Waste type	Loc Conf	Dist' (m)	Direction
No records in buffer								

EPA Victorian Landfill Register Data Source: State Government Victoria - Environment Protection Authority (EPA)

Former Gasworks

31-49 Melaluka Road, Leopold, VIC 3224

Former Gasworks

Former Gasworks identified from various historical sources within the dataset buffer:
Note - As this is a dataset collated from various historical sources, it is not an exhaustive list of all former Gasworks

Map Id	Site Name	Date Opened	Year Closed	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Collated from various historical sources

Historical Business Directories

31-49 Melaluka Road, Leopold, VIC 3224

1970 Business Directory Records
Premise or Road Intersection Matches

Records from the 1970 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

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

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1970 Business Directory Records
Road or Area Matches

Records from the 1970 UBD Business Directory, 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.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

31-49 Melaluka Road, Leopold, VIC 3224

1960-62 Business Directory Records
Premise or Road Intersection Matches

Records from the 1960-62 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

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

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1960-62 Business Directory Records
Road or Area Matches

Records from the 1960-62 UBD Business Directory, 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.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

31-49 Melaluka Road, Leopold, VIC 3224

1950 Business Directory Records
Premise or Road Intersection Matches

Records from the 1950 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

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

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Business Directory Records
Road or Area Matches

Records from the 1950 UBD Business Directory, 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.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

31-49 Melaluka Road, Leopold, VIC 3224

1945 Business Directory Records
Premise or Road Intersection Matches

Records from the 1945 Sands & McDougall's Directory, mapped to a premise or road intersection, within the dataset buffer:

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

Business Directory Content derived from Sands & McDougall's Directory of Victoria and Canberra ACT - Digitised by State Library Victoria

1945 Business Directory Records
Road or Area Matches

Records from the 1945 Sands & McDougall's Directory, 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.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

Business Directory Content derived from Sands & McDougall's Directory of Victoria and Canberra ACT - Digitised by State Library Victoria

Historical Business Directories

31-49 Melaluka Road, Leopold, VIC 3224

1925 Business Directory Records
Premise or Road Intersection Matches

Records from the 1925 Sands & McDougall's Directory, mapped to a premise or road intersection, within the dataset buffer:

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

Business Directory Content derived from Sands & McDougall's Directory of Victoria - Digitised by State Library Victoria

1925 Business Directory Records
Road or Area Matches

Records from the 1925 Sands & McDougall's Directory, 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.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

Business Directory Content derived from Sands & McDougall's Directory of Victoria - Digitised by State Library Victoria

Historical Business Directories

31-49 Melaluka Road, Leopold, VIC 3224

1905 Business Directory Records
Premise or Road Intersection Matches

Records from the 1905 Sands & McDougall's Directory, mapped to a premise or road intersection, within the dataset buffer:

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

Business Directory Content derived from Sands & McDougall's Melbourne, Suburban, and Country Directory - Digitised by State Library Victoria

1905 Business Directory Records
Road or Area Matches

Records from the 1905 Sands & McDougall's Directory, 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.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

Business Directory Content derived from Sands & McDougall's Melbourne, Suburban, and Country Directory - Digitised by State Library Victoria

Historical Business Directories

31-49 Melaluka Road, Leopold, VIC 3224

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

Dry Cleaners, Motor Garages & Service Stations from Sands & McDougall's Directories and 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						

Business Directory Content Derived from Sands & McDougall's Directory of Victoria (Digitised by State Library Victoria) and Universal Business Directories (Licensed from Hardie Grant)

Historical Business Directories

31-49 Melaluka Road, Leopold, VIC 3224

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

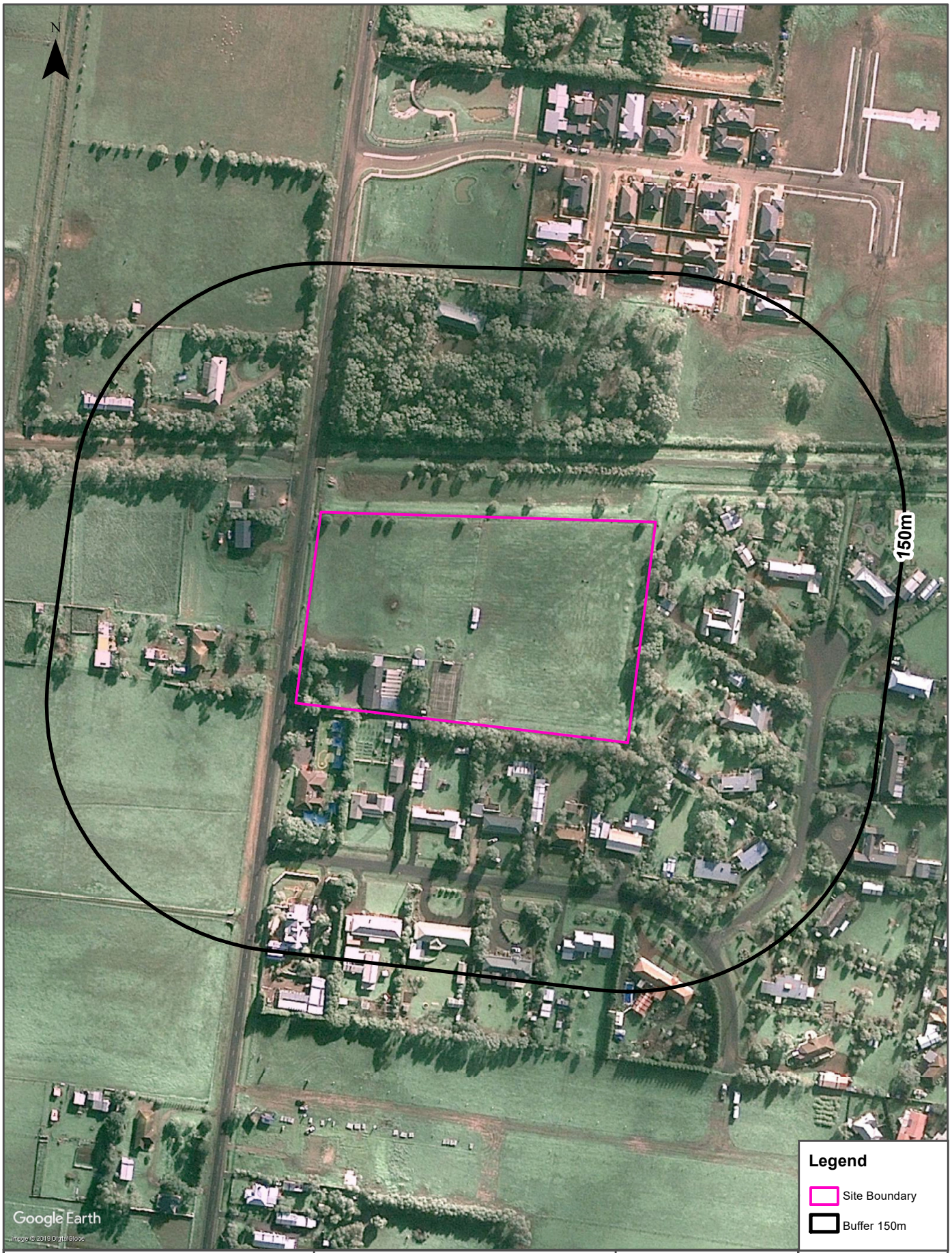
Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories and Sands & McDougall's Directories, mapped to a road or an area within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory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

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

Business Directory Content Derived from Sands & McDougall's Directory of Victoria (Digitised by State Library Victoria) and Universal Business Directories (Licensed from Hardie Grant)

Aerial Imagery 2009

31-49 Melaluka Road, Leopold, VIC 3224

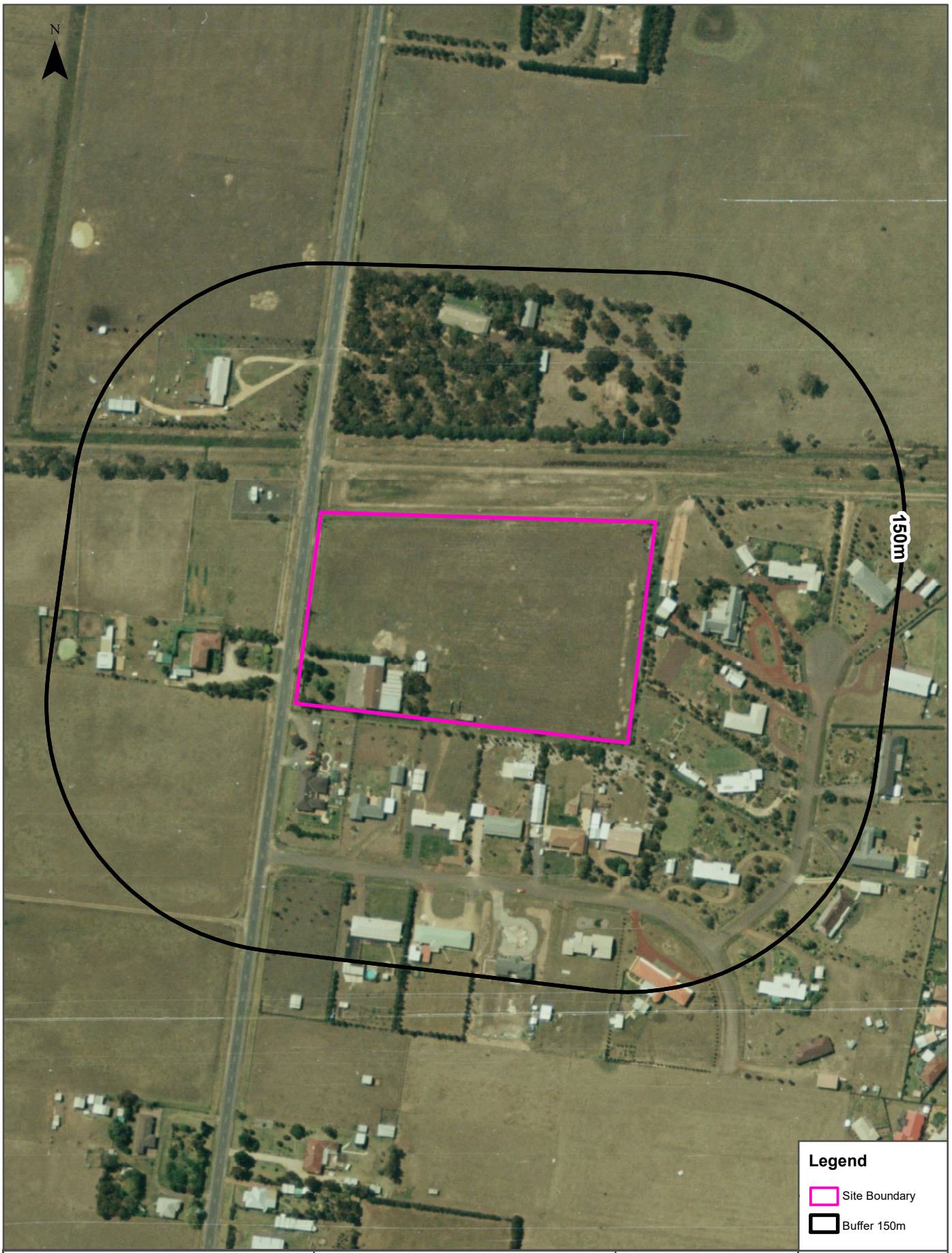


Scale:	Data Source Aerial Imagery: © 2019 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 55	Date: 30 July, 2019

0 25 50 100
Meters

Aerial Imagery 1994

31-49 Melaluka Road, Leopold, VIC 3224



Scale: 0 25 50 100 Meters	Data Source Aerial Imagery: Photomapping Services (2019)	Coordinate System: GDA 1994 MGA Zone 55	Date: 31 July 2019

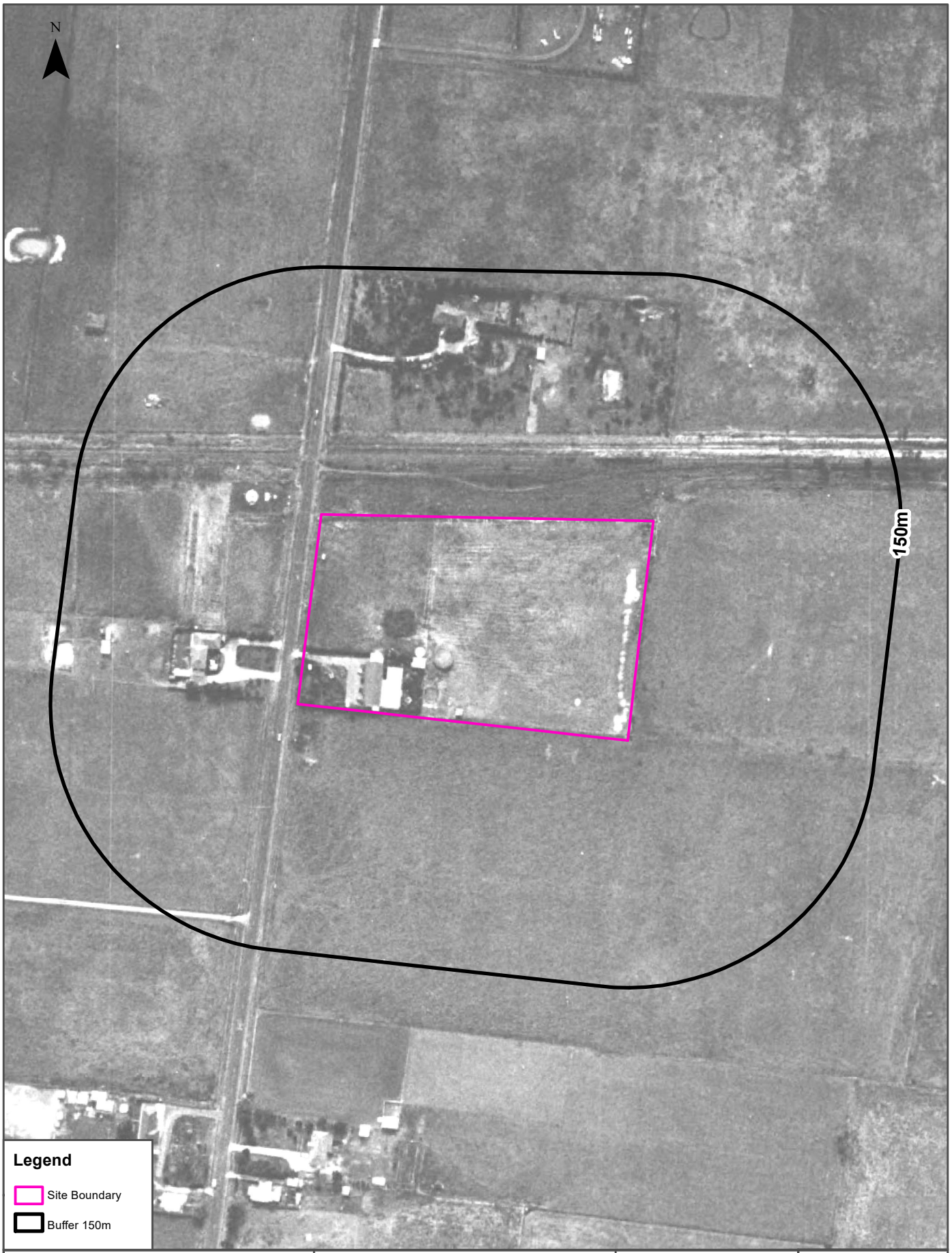
Aerial Imagery 1990

31-49 Melaluka Road, Leopold, VIC 3224

Scale: 0 25 50 100 Meters	Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)	Coordinate System: GDA 1994 MGA Zone 55	Date: 30 July, 2019

Aerial Imagery 1984

31-49 Melaluka Road, Leopold, VIC 3224



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 30 July, 2019
0 25 50 100 Meters	© Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)	GDA 1994 MGA Zone 55	

Aerial Imagery 1978

31-49 Melaluka Road, Leopold, VIC 3224

Scale: 0 25 50 100 Meters	Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)	Coordinate System: GDA 1994 MGA Zone 55	Date: 30 July, 2019

Aerial Imagery 1970

31-49 Melaluka Road, Leopold, VIC 3224

Scale: 0 25 50 100 Meters	Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)	Coordinate System: GDA 1994 MGA Zone 55	Date: 30 July, 2019

Aerial Imagery 1964

31-49 Melaluka Road, Leopold, VIC 3224

Scale:	Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)	Coordinate System: GDA 1994 MGA Zone 55	Date: 30 July, 2019

Aerial Imagery 1962

31-49 Melaluka Road, Leopold, VIC 3224

Scale: 0 25 50 100 Meters	Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)	Coordinate System: GDA 1994 MGA Zone 55	Date: 30 July, 2019

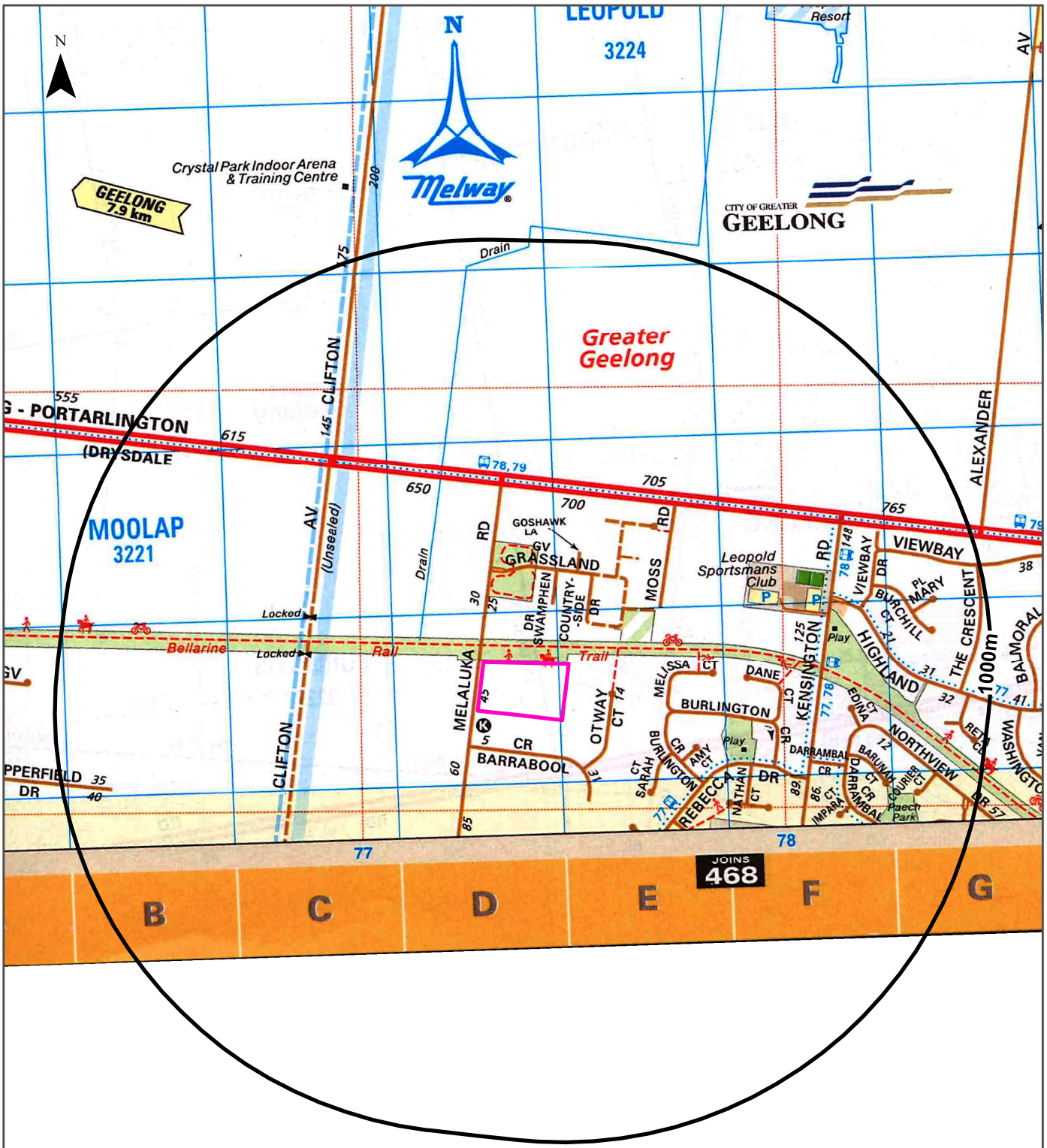
Aerial Imagery 1947

31-49 Melaluka Road, Leopold, VIC 3224

Scale: 0 25 50 100 Meters	Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)	Coordinate System: GDA 1994 MGA Zone 55	Date: 30 July, 2019

Historical Map 2009

31-49 Melaluka Road, Leopold, VIC 3224



Legend

- Site Boundary
- Buffer 1000m

Scale: 0 100 200 400 600 Meters

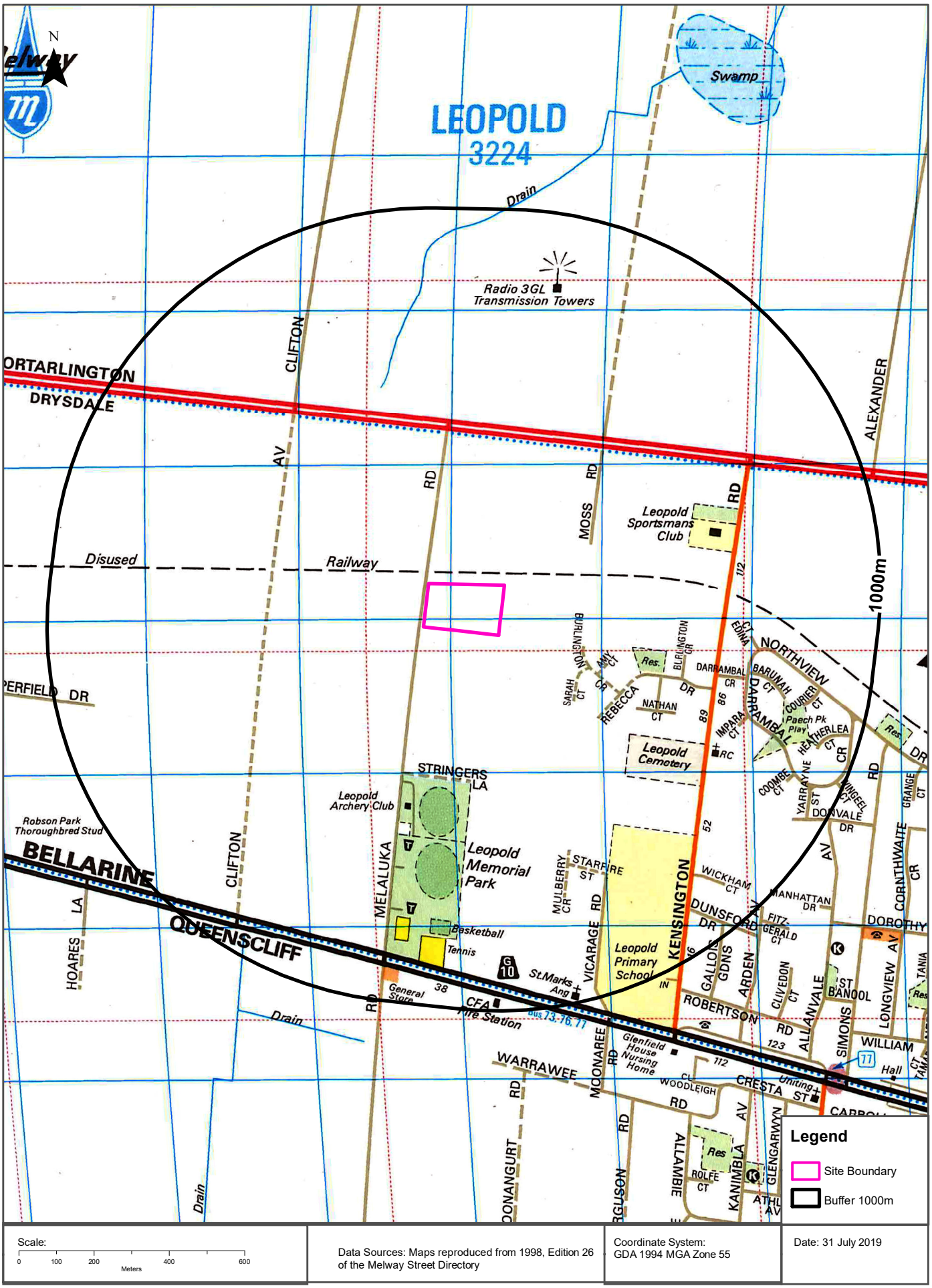
Data Sources: Maps reproduced from 2009, Edition 36 of the Melway Street Directory

Coordinate System: GDA 1994 MGA Zone 55

Date: 31 July 2019

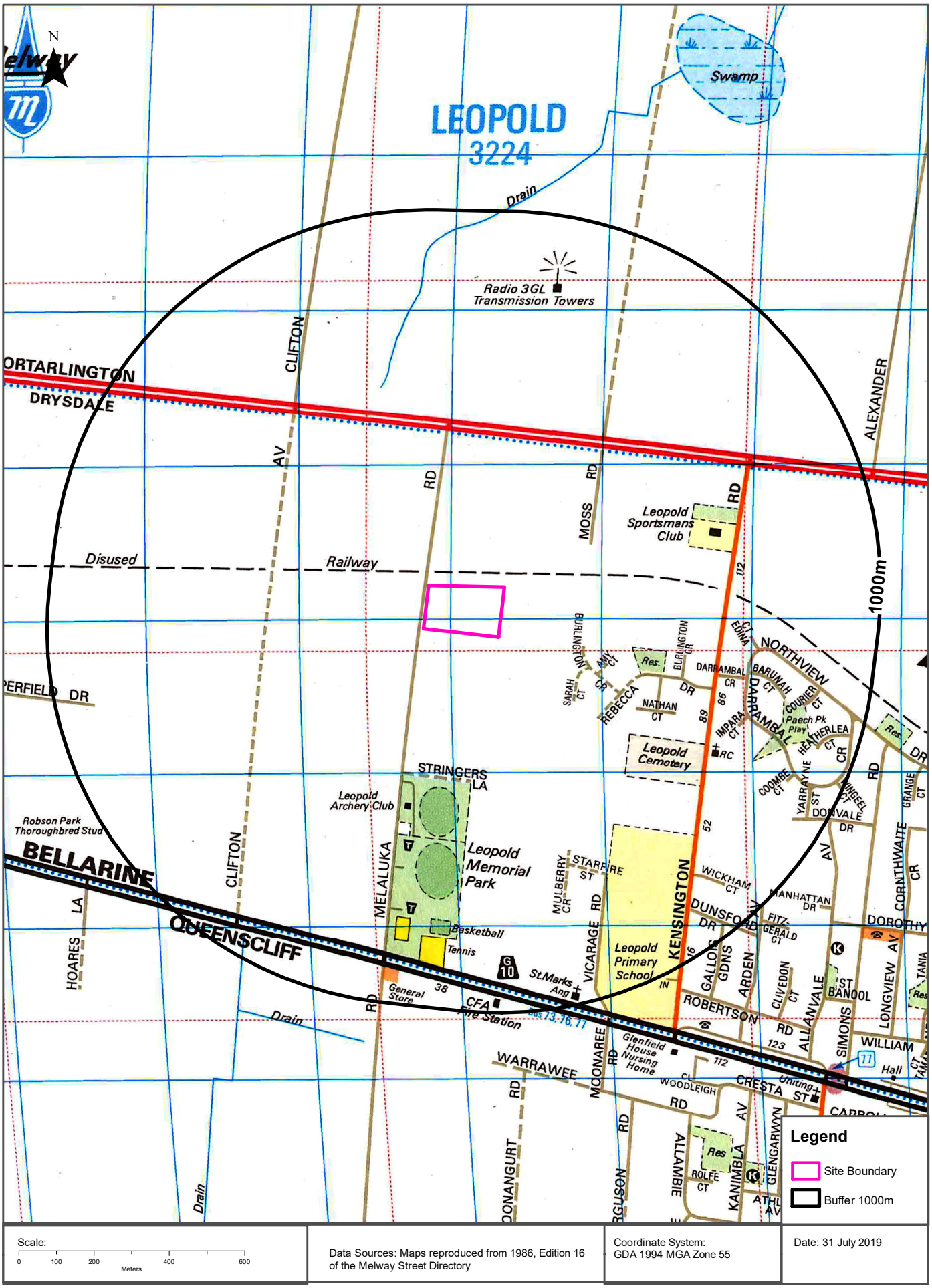
Historical Map 1998

31-49 Melaluka Road, Leopold, VIC 3224



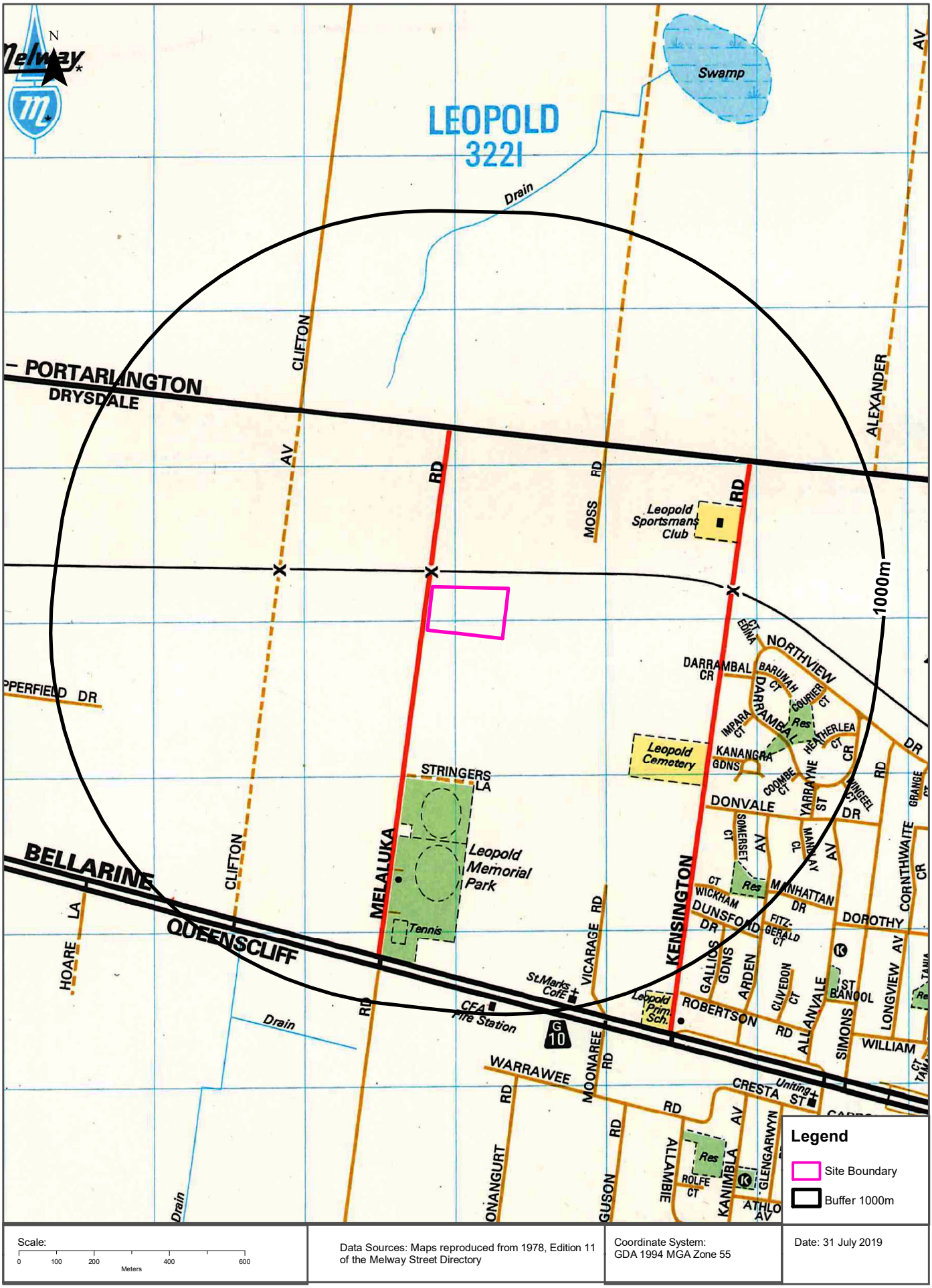
Historical Map 1986

31-49 Melaluka Road, Leopold, VIC 3224



Historical Map 1978

31-49 Melaluka Road, Leopold, VIC 3224



Scale: 0 100 200 400 600 Meters

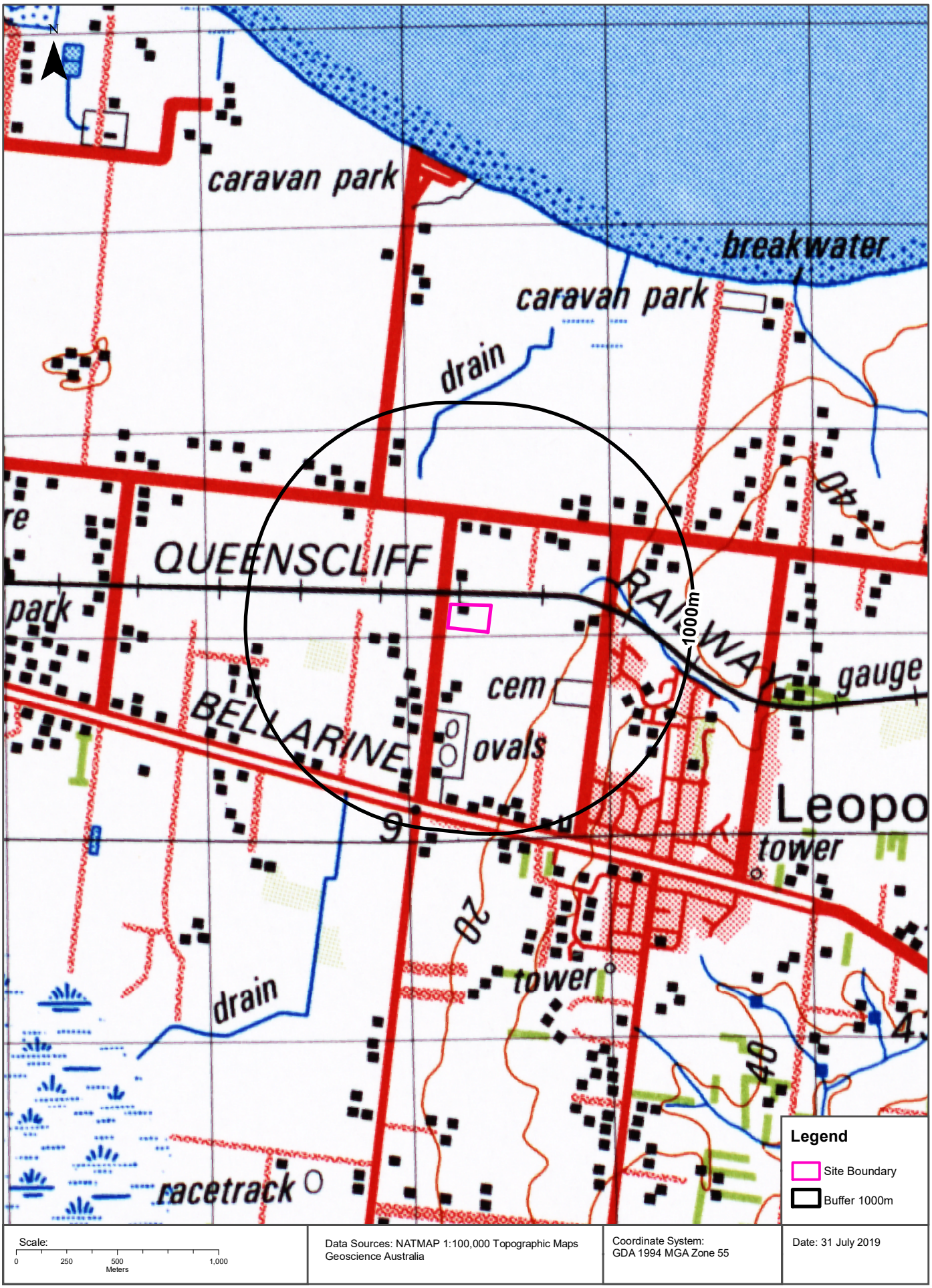
Data Sources: Maps reproduced from 1978, Edition 11 of the Melway Street Directory

Coordinate System: GDA 1994 MGA Zone 55

Date: 31 July 2019

Historical Map 1975

31-49 Melaluka Road, Leopold, VIC 3224

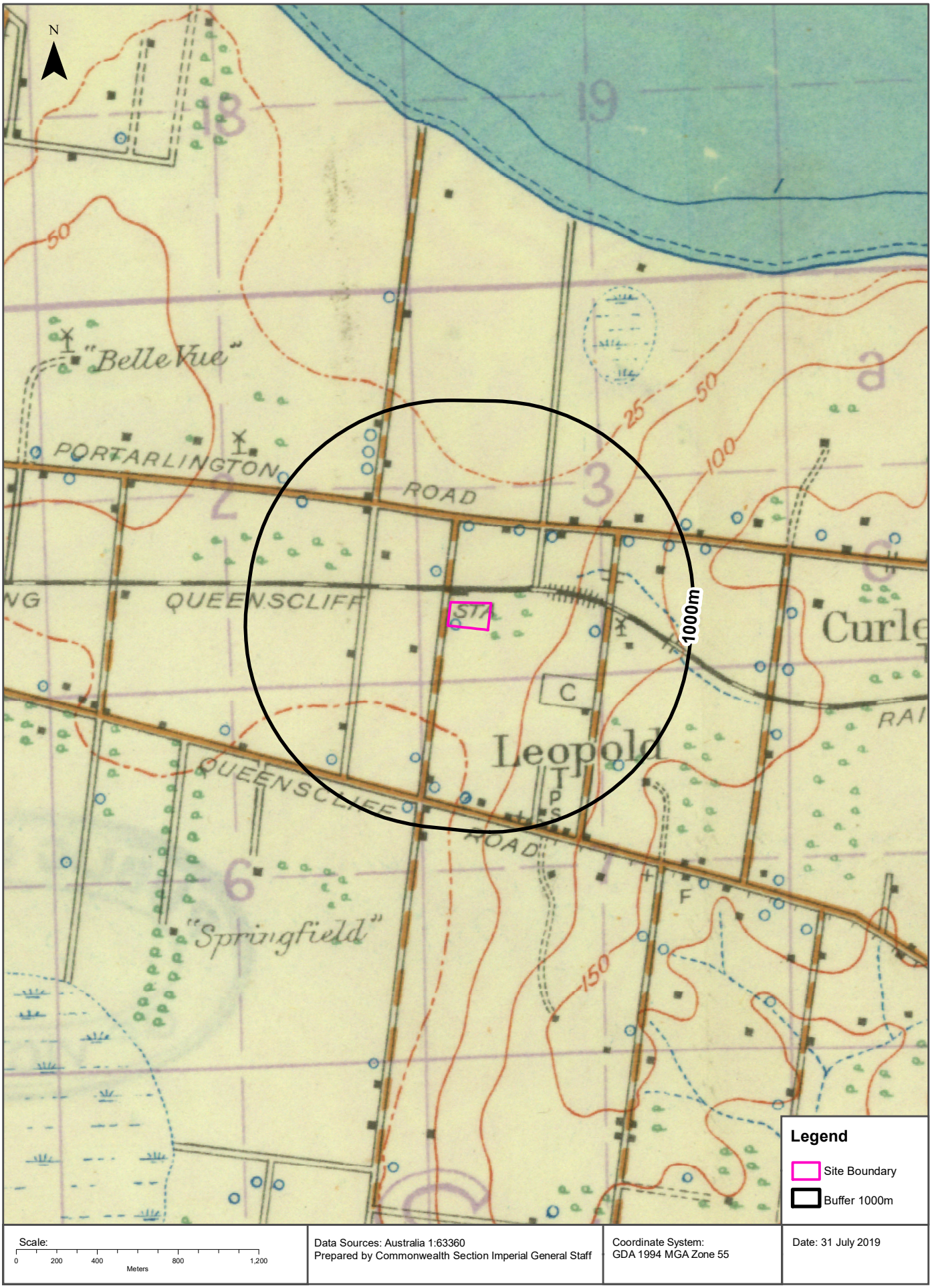


Historical Map c.1955

31-49 Melaluka Road, Leopold, VIC 3224

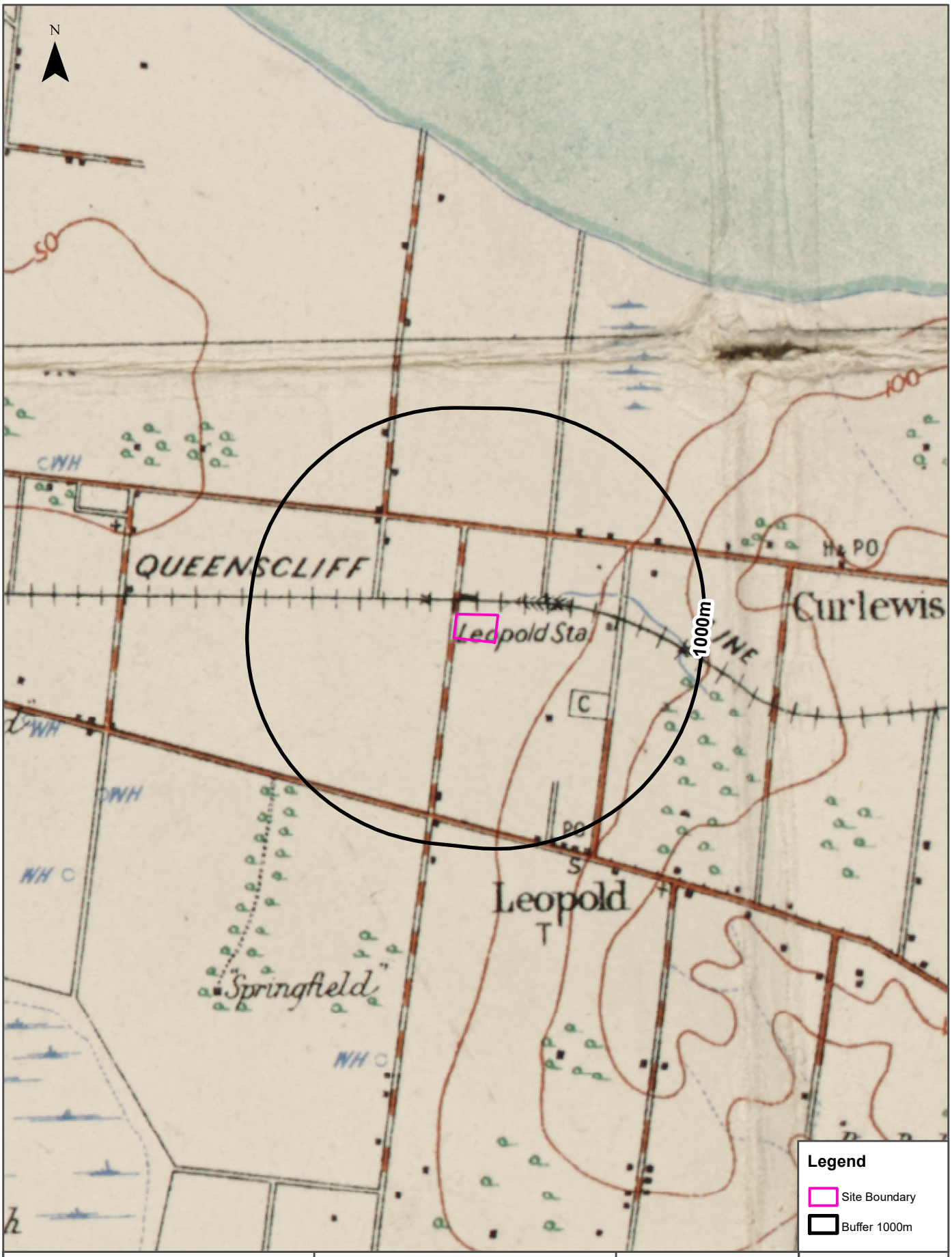
Historical Map c.1928

31-49 Melaluka Road, Leopold, VIC 3224



Historical Map c.1914

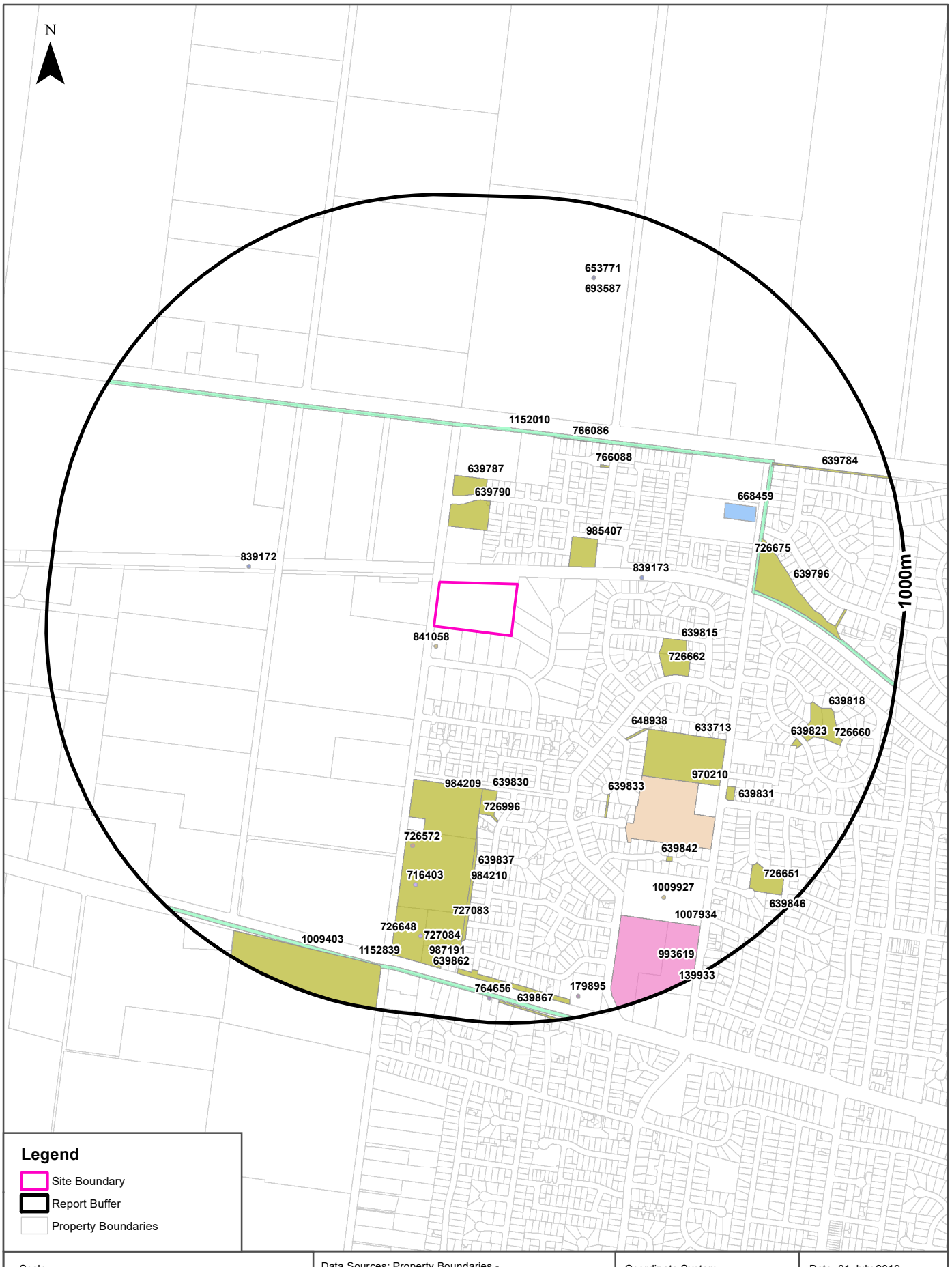
31-49 Melaluka Road, Leopold, VIC 3224



Scale: 0 200 400 800 1,200 Meters	Data Sources: Australia 1:63360 Prepared by Commonwealth Section Imperial General Staff	Coordinate System: GDA 1994 MGA Zone 55	Date: 31 July 2019

Features of Interest

31-49 Melaluka Road, Leopold, VIC 3224



Features of Interest

31-49 Melaluka Road, Leopold, VIC 3224

Features of Interest

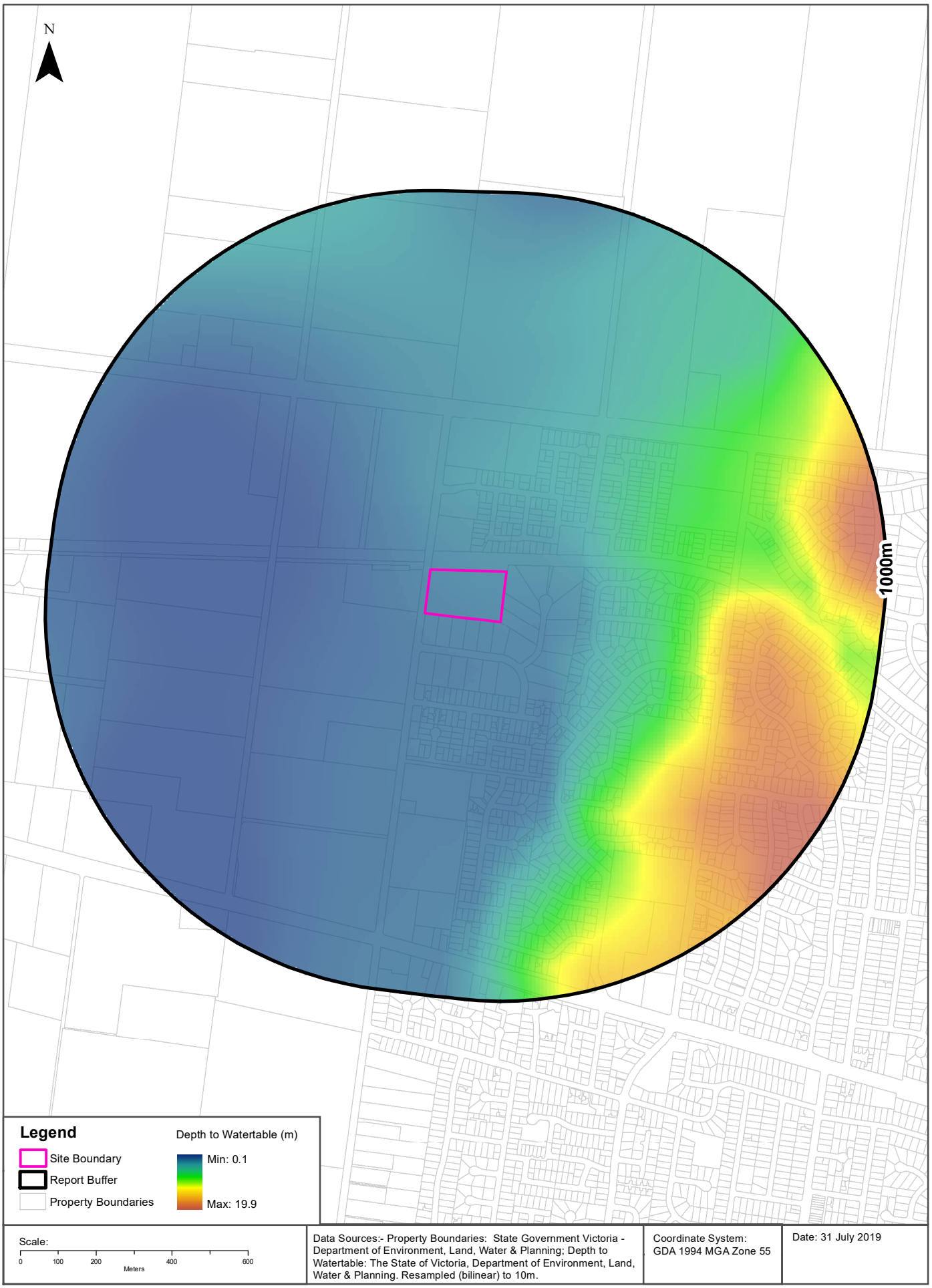
Features of Interest within the dataset buffer:

Feature Id	Feature Type	Feature Sub Type	Name	Distance	Direction
841058	care facility	child care	Leopold World Of Learning	46m	South West
639790	reserve	park		137m	North
985407	reserve	park		138m	North East
639787	reserve	park		224m	North
839173	sign	emergency marker	BRT109	315m	East
766088	reserve	park		370m	North East
639815	reserve	park	Rebecca Reserve	382m	East
1152010	power line	power sub transmission		388m	East
766086	reserve	park		389m	North East
648938	reserve	park		395m	South East
726996	reserve	park	Leopold Memorial Reserve	398m	South
639830	reserve	park		401m	South
984209	sport facility	sports ground		416m	South
633713	reserve	cemetery	Leopold Cemetery	427m	South East
726662	recreational resource	playground		430m	East
639833	reserve	park		479m	South East
839172	sign	emergency marker	BRT108	489m	West
970210	residential building	retirement village	Kensington Retirement Village	493m	South East
639837	reserve	park		503m	South
984210	sport facility	sports ground		553m	South
668459	sport facility	bowling green	Leopold Sportsmans Bowls Club	558m	East
726572	community venue	hall		563m	South
639796	reserve	park	Railway Reserve	610m	East
726675	recreational resource	playground		631m	East
716403	recreational resource	club house		663m	South
639831	reserve	park		679m	South East
639842	reserve	park		696m	South East
639784	reserve	park		722m	East
727083	sport facility	netball court		742m	South
727084	sport facility	tennis court		770m	South
639823	reserve	park		773m	South East

Feature Id	Feature Type	Feature Sub Type	Name	Distance	Direction
1007934	education centre	education complex		775m	South East
1009927	care facility	child care	Leopold Child And Family Centre	776m	South East
987191	recreational resource	skate park	John Hansen Memorial Skate Park	778m	South
639818	reserve	park	Paech Park	786m	East
726648	recreational resource	playground		792m	South
693587	communication service	broadcast radio facility	AM 1341	810m	North
653771	landmark	tower		810m	North
726660	recreational resource	playground		851m	East
639846	reserve	park	Arden Avenue Reserve	857m	South East
639862	reserve	park		868m	South
1152839	power line	power sub transmission		878m	East
1009403	reserve	park	Gateway Sanctuary	883m	South West
726651	recreational resource	playground		923m	South East
764656	emergency facility	fire station	Leopold Fire Station	933m	South
993619	care facility	child care	Leopold Primary Outside School Hours Care Program	933m	South East
639867	reserve	park		941m	South
179895	place of worship	church		941m	South
139933	education centre	primary school	Leopold Primary School	958m	South East

Depth to Watertable

31-49 Melaluka Road, Leopold, VIC 3224



Hydrogeology & Groundwater

31-49 Melaluka Road, Leopold, VIC 3224

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive aquifers of low to moderate productivity	0m	Onsite

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

Groundwater Salinity

On-site Groundwater Salinity:

Groundwater Salinity	Percent Of Site Area
3,500 - 7,000 mg/l	100

Depth to Watertable

On-site Depth to Watertable:

Depth to Watertable	Percent Of Site Area
Less than 5 metres	100

Surface Elevation

Approximate on-site Surface Elevation:

Surface Elevation
8 AHDm to 10 AHDm

Basement Elevation

Approximate on-site Basement Elevation:

Basement Elevation - Basement Rocks comprise Lower Palaeozoic basement rocks that form the highlands and the crystalline basement; and Mesozoic rocks of the Otway and Gippsland basins both outcropping and subsurface
-54 AHDm to -53 AHDm

Groundwater Data Custodian: State Government Victoria - Dept of Environment, Land, Water & Planning

Groundwater Boreholes

31-49 Melaluka Road, Leopold, VIC 3224

Groundwater Boreholes

31-49 Melaluka Road, Leopold, VIC 3224

Boreholes (DEPI WMIS)

Boreholes from the Department of Environment and Primary Industries' Water Measurement Information System, within the dataset buffer:

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
WRK056970	Observation	0.00m-6.50m clay 6.50m-11.00m red silty sand	0.00m-7.00m INNER LINING - CASING = Pvc 7.00m-11.00m INNER LINING - SCREEN = Pvc 0.00m-5.00m OUTER LINING - GRAVEL = Cement 5.00m-6.50m OUTER LINING - GRAVEL = Bentonite 6.50m-11.00m OUTER LINING - GRAVEL = Gravel		0.00m-7.00m Clay 7.00m-11.00m Sand	2010-07-14	78	West
WRK059149	Observation					2010-11-01	450	South
WRK059147	Observation					2010-11-01	499	South
WRK988036							940	South
142387	Domestic, Stock	0.00m-1.00m OVERBURDEN 1.00m-3.20m ORANGE SANDY CLAY 3.20m-4.50m BROWN CLAY 4.50m-24.00m GREY CLAY 24.00m-28.00m DARK GREY CLAY 28.00m-30.00m BLUE CLAY 30.00m-38.00m DARK GREY CLAY				2000-08-05	1562	West
80119	Groundwater Investigation	0.00m-13.00m CLAYS 13.00m-16.00m SANDY CLAYS 16.00m-20.00m CLAYS 20.00m-21.00m SANDY CLAYS 21.00m-25.00m CLAYS	0.00m-13.00m INNER LINING - CASING = Pvc 13.00m-16.00m INNER LINING - SCREEN = Pvc 16.00m-20.00m INNER LINING - CASING = Pvc 20.00m-21.00m INNER LINING - SCREEN = Pvc 21.00m-25.00m INNER LINING - CASING = Pvc 19.50m-0.00m OUTER LINING - GRAVEL = Seal		13.00m-16.00m Clay 20.00m-21.00m Sand	1983-05-19	1633	North West
WRK988283	Domestic	0.00m-1.00m TOP SOIL 1.00m-5.50m GREY CLAY 5.50m-7.00m BROWN SAND & CLAY 7.00m-9.80m GREY CLAY 9.80m-13.00m CLAY & LIMESTONE LAYERS 13.00m-21.00m LIMESTONE 21.00m-27.00m MARL				2008-10-09	1709	North East
122081	Groundwater Investigation	0.00m-0.30m TOP SOIL 0.30m-6.00m STIFF MOTTLED CLAY 6.00m-9.50m LIMESTONE SILT & CLAY 9.50m-11.57m STIFF MOTTLED CLAY	-0.64m-11.07m INNER LINING - CASING = Pvc Class 18 8.07m-11.07m INNER LINING - SCREEN = Pvc Class 18 0.00m-0.00m OUTER LINING - GRAVEL = Seal 5.00m-6.00m OUTER LINING - GRAVEL = Bentonite 6.00m-11.57m OUTER LINING - GRAVEL = Gravel			1994-06-22	1764	North West
80147	Groundwater Investigation	0.00m-0.60m AGGREGATE & TOP SOIL (WITH OIL/KEROSENE) 0.60m-6.00m STIFF BROWN CLAY/ TO VERY STIFF MOTTLED CLAYS 6.00m-6.50m MOIST SOFTER MOTTLED CLAY, WITH LAYERS LIME SEABED 6.50m-7.50m SOFT CLAYS, CEMENTED SANDS, YELLOW/GREEN SHELLS	-0.30m-7.50m INNER LINING - CASING = Pvc 6.50m-7.50m INNER LINING - SCREEN = Pvc 1.50m-0.00m OUTER LINING - GRAVEL = Seal 5.50m-7.50m OUTER LINING - GRAVEL = Gravel		6.50m-7.50m Clay	1990-09-18	1798	North West
80124	Groundwater Investigation	0.00m-1.30m TOPSOIL & CLAY 1.30m-5.00m SOLID WASTE 5.00m-7.00m BROWN STIFF CLAY 7.00m-9.00m PALE GREY-BROWN CLAY 9.00m-11.20m PALE BROWN SAND CLAY 11.20m-12.50m STIFF MOTTLED GREY-BROWN CLAY				1990-08-30	1812	North West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
124169	Groundwater Investigation	0.00m-0.12m BROWN-BLACK TOP SOIL 0.12m-15.60m GREY-BROWN MOTTLED SILTY CLAYS	0.00m-12.00m INNER LINING - CASING = Pvc Class 12 12.10m-15.10m INNER LINING - SCREEN = Pvc Class 12 15.10m-15.60m INNER LINING - CASING = Pvc Class 12 8.40m-9.60m OUTER LINING - GRAVEL = Bentonite 9.60m-15.60m OUTER LINING - GRAVEL = Gravel			1991-03-20	1816	North West
124168	Groundwater Investigation	0.00m-0.15m TOP SOIL BROWN 0.15m-11.00m GREY-YELLOW-BROWN SILTY CLAY 11.00m-12.80m GREY-YELLOW SANDY CLAY 12.80m-21.70m GREY ORANGE SILTY CLAY	0.00m-18.20m INNER LINING - CASING = Pvc 18.20m-21.20m INNER LINING - SCREEN = Pvc 21.20m-21.70m INNER LINING - CASING = Pvc 15.70m-16.70m OUTER LINING - GRAVEL = Bentonite 16.70m-21.70m OUTER LINING - GRAVEL = Gravel			1991-03-21	1820	North West
80129	Groundwater Investigation	0.00m-0.30m ORGANIC MATERIAL 0.30m-1.50m DARK BROWN CLAY 1.50m-3.00m BROWN CLAY 3.00m-4.00m DARK BROWN SILTY CLAY 4.00m-14.00m MOTTLED GREY - BROWN CLAY 14.00m-21.80m YELLOW BROWN SILTY CLAY	-0.50m-12.80m INNER LINING - CASING = Pvc 12.80m-21.80m INNER LINING - SCREEN = Pvc			1990-08-29	1843	North West
125458	Groundwater Investigation	0.00m-0.40m BROWN SILTY CLAY 0.40m-4.50m BROWN-YELLOW-ORANGE SILTY CLAY 4.50m-6.00m BROWN-ORANGE SANDY CLAY 6.00m-9.40m GREY WHITE SILTY CLAY 9.40m-10.20m FINE YELLOW SAND 10.20m-12.50m YELLOW-BROWN SANDY CLAY	0.00m-9.50m INNER LINING - CASING = Pvc Class 12 9.50m-12.50m INNER LINING - SCREEN = Pvc Class 12 8.00m-8.50m OUTER LINING - GRAVEL = Bentonite 9.50m-12.50m OUTER LINING - GRAVEL = Gravel			1991-07-31	1843	North West
80125	Groundwater Investigation	0.00m-1.30m TOPSOIL & CLAY 1.30m-4.80m SOLID WASTE 4.80m-13.00m MOTTLED GREY - BROWN STIFF CLAY 13.00m-14.00m YELLOW BROWN SILTY-SANDY CLAY				1990-08-29	1847	North West
80128	Groundwater Investigation	0.00m-1.00m ORGANIC MATERIAL 1.00m-2.00m DARK BROWN CLAY 2.00m-3.00m BLACK CLAY 3.00m-4.00m GREY CLAY 4.00m-9.00m BROWN CLAY LIGHTER WITH DEPTH 9.00m-11.00m SANDY CLAY 11.00m-12.00m LIGHT BROWN CLAY 12.00m-19.00m LIGHT BROWN MOTTLED CLAY	-0.50m-11.00m INNER LINING - CASING = Pvc 11.00m-19.00m INNER LINING - SCREEN = Pvc 11.00m-19.00m OUTER LINING - GRAVEL = Gravel			1990-08-30	1854	North West
80190	Groundwater Investigation	0.00m-0.30m TOP SOIL SILTY CLAY 0.30m-6.20m SILTY CLAY 6.20m-6.50m WHITE LIMESTONE 6.50m-7.20m SILTY TAN CLAY 7.20m-7.40m LIMESTONE 7.40m-8.70m SILTY CLAY 8.70m-9.20m MEDIUM FINE SAND 9.20m-9.60m WHITE LIMESTONE 9.60m-10.50m MEDIUM FINE SAND 10.50m-12.00m SILTY CLAY	-0.30m-9.00m INNER LINING - CASING = Pvc 9.00m-12.00m INNER LINING - SCREEN = Pvc 7.00m-0.00m OUTER LINING - GRAVEL = Seal 8.00m-12.00m OUTER LINING - GRAVEL = Gravel		9.00m-12.00m Sand	1991-09-22	1854	North West
80120	Groundwater Investigation	0.00m-10.50m CLAYS 10.50m-13.50m SANDY CLAYS 13.50m-21.00m CLAYS 21.00m-22.00m SANDY CLAYS 22.00m-25.00m CLAYS	0.00m-10.50m INNER LINING - CASING = Pvc 10.50m-13.50m INNER LINING - SCREEN = Pvc 13.50m-25.00m INNER LINING - CASING = Pvc 21.00m-22.00m INNER LINING - SCREEN = Pvc 22.00m-25.00m INNER LINING - CASING = Pvc 20.50m-0.00m OUTER LINING - GRAVEL = Seal		10.50m-13.50m Clay 21.00m-22.00m Sand	1983-05-19	1857	North West
80114	Domestic, Stock					1927-12-31	1858	South West
80126	Groundwater Investigation	0.00m-1.00m ORGANIC MATERIAL 1.00m-8.00m DARK BROWN CLAY LIGHTER WITH DEPTH 8.00m-8.50m FINE SAND 8.50m-9.00m COARSE SAND 9.00m-10.50m LIGHT BROWN SANDY CLAY 10.50m-17.00m LIGHT BROWN CLAY-ORANGE WITH DEPTH	-0.50m-11.00m INNER LINING - CASING = Pvc 11.00m-17.00m INNER LINING - SCREEN = Pvc 11.00m-17.00m OUTER LINING - GRAVEL = Gravel			1990-09-01	1874	North West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
122080	Groundwater Investigation	0.00m-0.40m TOP SOIL & FILL 0.40m-9.50m STIFF MOTTLED CLAYS 9.50m-14.00m SILTS & CLAY WITH TRACES OF SOFT LIMESTONE 14.00m-15.00m STIFF MOTTLES CLAY	-0.50m-11.50m INNER LINING - CASING = Pvc Class 18 11.50m-14.50m INNER LINING - SCREEN = Pvc Class 18 0.00m-0.00m OUTER LINING - GRAVEL = Seal 8.00m-9.00m OUTER LINING - GRAVEL = Bentonite 9.00m-15.00m OUTER LINING - GRAVEL = Gravel			1994-06-22	1891	North West
80189	Groundwater Investigation	0.00m-0.30m TOP SOIL SILTY CLAY 0.30m-7.50m SILTY CLAY TAN & ORANGE 7.50m-8.30m LIMESTONE 8.30m-10.30m SILTY CLAY GREY/TAN 10.30m-11.30m YELLOW SAND FINE/MEDIUM 11.30m-14.00m SILTY CLAY TAN	-0.30m-10.30m INNER LINING - CASING = Pvc 10.30m-14.00m INNER LINING - SCREEN = Pvc 8.30m-0.00m OUTER LINING - GRAVEL = Seal 9.30m-14.00m OUTER LINING - GRAVEL = Gravel		10.30m-14.00m Clay	1991-09-21	1893	North West
80130	Groundwater Investigation	0.00m-1.00m ORGANIC MATERIAL 1.00m-9.00m MOTTLED PALE GREY BROWN SILTY CLAY 9.00m-11.00m MOTTLED PALE GREY CLAY GRITTY 11.00m-12.00m MOTTLED PALE GREY BROWN SILTY CLAY 12.00m-13.00m YELLOW BROWN SILTY CLAY 13.00m-19.00m LIMESTONE GRIT IN YELLOW/BROWN CLAY 19.00m-20.00m BROWN SILTY CLAY LIMESTONE GRIT 20.00m-22.00m BROWN SILTY CLAY 22.00m-30.00m DARK GREY STIFF CRICACEOUS CLAY	-0.50m-10.00m INNER LINING - CASING = Pvc 10.00m-30.00m INNER LINING - SCREEN = Pvc 10.00m-30.00m OUTER LINING - GRAVEL = Gravel			1990-08-28	1893	North West
124170	Groundwater Investigation	0.00m-0.10m BLACK TOP SOIL 0.10m-2.80m BROWN CLAY 2.80m-16.20m GREY BROWN SILTY CLAYS	0.00m-13.00m INNER LINING - CASING = Pvc Class 12 13.00m-16.00m INNER LINING - SCREEN = Pvc Class 12 11.00m-12.80m OUTER LINING - GRAVEL = Bentonite 12.00m-16.00m OUTER LINING - GRAVEL = Gravel			1991-03-18	1894	North West
124171	Groundwater Investigation	0.00m-0.10m BLACK TOP SOIL 0.10m-1.80m BROWN CLAY 1.80m-10.00m MOTTLED SILTY CLAY 10.00m-11.80m BROWN SILTY SANDY CLAY 11.80m-22.50m GREY-BROWN SILTY CLAY	0.00m-19.00m INNER LINING - CASING = Pvc Class 12 19.00m-22.00m INNER LINING - SCREEN = Pvc Class 12 22.00m-22.50m INNER LINING - CASING = Pvc Class 12 16.50m-17.50m OUTER LINING - GRAVEL = Bentonite 17.50m-22.50m OUTER LINING - GRAVEL = Gravel			1991-03-15	1896	North West
80127	Groundwater Investigation	0.00m-1.00m ORGANIC MATERIAL 1.00m-8.00m BROWN CLAY BECOMING LIGHTER WITH DEPTH 8.00m-8.50m SANDY CLAY 8.50m-9.00m COARSE SAND 9.00m-10.00m FINE SAND 10.00m-18.50m LIGHT BROWN CLAY BECOMING ORANGE WITH DEPTH	-0.50m-10.50m INNER LINING - CASING = Pvc 10.50m-18.50m INNER LINING - SCREEN = Pvc 9.80m-18.50m OUTER LINING - GRAVEL = Gravel			1990-08-30	1901	North West
125457	Groundwater Investigation	0.00m-0.20m BROWN SILT 0.20m-1.20m BROWN SILTY CLAY 1.20m-2.40m GREY-ORANGE SANDY-SILTY CLAY 2.40m-7.80m GREY-BROWN-WHITE SILTY CLAY 7.80m-9.00m ORANGE-RED SANDY CLAY 9.00m-15.00m GREY-WHITE-BROWN SILTY CLAY	0.00m-12.00m INNER LINING - CASING = Pvc Class 12 12.00m-15.00m INNER LINING - SCREEN = Pvc Class 12 10.00m-11.00m OUTER LINING - GRAVEL = Bentonite 11.00m-15.00m OUTER LINING - GRAVEL = Gravel			1991-07-30	1906	North West
80139	Groundwater Investigation	0.00m-1.00m ORGANIC 1.00m-5.00m GREY-BROWN CLAY 5.00m-7.00m RED-BROWN CLAY 7.00m-19.00m MOTTLED PALE GREY CLAY 19.00m-22.00m YELLOW BROWN CLAY 22.00m-22.10m LIMESTONE 22.10m-36.00m DARK GREY CLAY	-0.50m-10.50m INNER LINING - CASING = Pvc 10.50m-36.00m INNER LINING - SCREEN = Pvc 10.00m-36.00m OUTER LINING - GRAVEL = Gravel			1990-08-27	1910	North West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
80187	Groundwater Investigation	0.00m-0.30m CLAYEY SILT TOP SOIL 0.30m-2.50m SILTY CLAY (MEDIUM PLASTIC GREY/BROWN YELLOW) 2.50m-3.80m SILTY CLAY (HIGHLY PLASTIC TAN) 3.80m-4.00m YELLOW & WHITE LIMESTONE 4.00m-4.50m SILTY TAN CLAY 4.50m-5.00m HARD WHITE LIMESTONE 5.00m-7.00m SILTY CLAY MEDIUM PLASTICITY TAN 7.00m-8.00m SILTY CLAY HIGH PLASTICITY 8.00m-8.50m HARD WHITE LIMESTONE 8.50m-11.50m SILTY CLAY YELLOW-BROWN SLIGHT WAVE FINE SAND 11.50m-12.50m SAND SOME SILT MEDIUM GRAIN 12.50m-15.00m SILTY CLAY MEDIUM YELLOW	-0.30m-11.50m INNER LINING - CASING = Pvc 11.50m-15.00m INNER LINING - SCREEN = Pvc 11.50m-15.00m OUTER LINING - GRAVEL = Gravel			1991-09-19	1923	North West
80131	Groundwater Investigation	0.00m-1.00m ORGANIC MATERIAL 1.00m-2.00m BROWN STIFF GRITTY CLAY 2.00m-4.00m VERY STIFF GREY-BROWN CLAY 4.00m-9.00m PALE GREY SILTY CLAY 9.00m-15.00m PALE GREY-BROWN MOTTLED CLAY	-0.50m-14.00m INNER LINING - CASING = Pvc 14.00m-15.00m INNER LINING - SCREEN = Pvc 13.50m-15.00m OUTER LINING - GRAVEL = Gravel			1990-08-28	1926	North West
80188	Groundwater Investigation	0.00m-0.30m CLAYEY SILT TOP SOIL 0.30m-3.50m SILTY GREY CLAY 3.50m-3.80m HARD WHITE LIMESTONE 3.80m-5.50m BROWN/GREY/ORANGE SANDY CLAY 5.50m-8.50m SILTY SANDY CLAY 8.50m-8.60m HARD WHITE LIMESTONE 8.60m-12.00m SILTY CLAY 12.00m-12.60m SILTY SAND 12.60m-15.00m SANDY CLAY MEDIUM GREY/BROWN	-0.50m-12.00m INNER LINING - CASING = Pvc 12.00m-15.00m INNER LINING - SCREEN = Pvc			1991-09-20	1942	North West
122079	Groundwater Investigation	0.00m-1.00m TOP SOIL (CLAYEY 1.00m-11.00m MOTTLED STIFF CLAY 11.00m-17.50m SMALL SEAMS OF LIMESTONE INTERMIXED WITH CLAYS & SILT	-0.64m-13.90m INNER LINING - CASING = Pvc Class 18 13.90m-16.90m INNER LINING - SCREEN = Pvc Class 18 9.00m-10.00m OUTER LINING - GRAVEL = Bentonite 10.00m-17.50m OUTER LINING - GRAVEL = Gravel			1994-06-21	1967	North West
80121	Groundwater Investigation	0.00m-7.00m CLAYS 7.00m-10.00m SANDS 10.00m-23.00m CLAYS 23.00m-24.00m SANDY CLAYS 24.00m-25.00m CLAYS	0.00m-7.00m INNER LINING - CASING = Pvc 7.00m-10.00m INNER LINING - SCREEN = Pvc 10.00m-23.00m INNER LINING - CASING = Pvc 23.00m-24.00m INNER LINING - SCREEN = Pvc 24.00m-25.00m INNER LINING - CASING = Pvc 22.50m-0.00m OUTER LINING - GRAVEL = Seal		7.00m-10.00m Sand 23.00m-24.00m Clay	1983-05-19	1993	North West

Groundwater Boreholes

31-49 Melaluka Road, Leopold, VIC 3224

Boreholes (Earth Resources Database)

Boreholes from the Earth Resources dataset, within the dataset buffer:

Bore Id	Bore Type	Company	Usage	Method	Status	Drill Date	Depth	Elevation	Accuracy (m)	Dist (m)	Direct
80119		Private Individual/Corporation	Groundwater Observation	Rotary (diamond/drag bit)		19/05/1983	25.00		100	1633	North West
80120		Private Individual/Corporation	Groundwater Observation	Rotary (diamond/drag bit)		19/05/1983	25.00		100	1859	North West
80121		Private Individual/Corporation	Groundwater Observation	Rotary (diamond/drag bit)		19/05/1983	25.00		100	1994	North West

Boreholes (Federation University)

Boreholes from the Federation University Australia dataset, within the dataset buffer:

Bore Id	Authority	Type	Uses	Initial TD	Log	Dist (m)	Direct
S9035847/1		Groundwater				940	South
GS3	City of Greater Geelong	Groundwater	Observation Groundwater Investigation			1082	South
142387		Groundwater	Domestic Stock		D: 0.000m-1.000m Overburden D: 1.000m-3.200m Orange Sandy Clay D: 3.200m-4.500m Brown Clay D: 4.500m-24.000m Grey Clay D: 24.000m-28.000m Dark Grey Clay D: 28.000m-30.000m Blue Clay D: 30.000m-38.000m Dark Grey Clay	1562	West
80119	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-13.000m Clays D: 13.000m-16.000m Sandy Clays D: 16.000m-20.000m Clays D: 20.000m-21.000m Sandy Clays D: 21.000m-25.000m Clays	1633	North West
S9035966/1		Groundwater	Domestic		D: 0.000m-1.000m Top Soil D: 1.000m-5.500m Grey Clay D: 5.500m-7.000m Brown Sand & Clay D: 7.000m-9.800m Grey Clay D: 9.800m-13.000m Clay & Limestone Layers D: 13.000m-21.000m Limestone D: 21.000m-27.000m Marl	1709	North East
122081		Groundwater	Investigation		D: 0.000m-0.300m Top Soil D: 0.300m-6.000m Stiff Mottled Clay D: 6.000m-9.500m Limestone Silt & Clay D: 9.500m-11.570m Stiff Mottled Clay	1764	North West
80147	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-0.600m Aggregate & Top Soil (With Oil/Kerosene) D: 0.600m-6.000m Stiff Brown Clay/ To Very Stiff Mottled Clays D: 6.000m-6.500m Moist Softer Mottled Clay, With Layers Lime Seabed D: 6.500m-7.500m Soft Clays, Cemented Sands, Yellow/Green Shells	1798	North West

Bore Id	Authority	Type	Uses	Initial TD	Log	Dist (m)	Direct
80124	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-1.300m Topsoil & Clay D: 1.300m-5.000m Solid Waste D: 5.000m-7.000m Brown Stiff Clay D: 7.000m-9.000m Pale Grey-Brown Clay D: 9.000m-11.200m Pale Brown Sand Clay D: 11.200m-12.500m Stiff Mottled Grey-Brown Clay	1812	North West
124169		Groundwater	Investigation		D: 0.000m-0.120m Brown-Black Top Soil D: 0.120m-15.600m Grey-Brown Mottled Silty Clays	1816	North West
124168		Groundwater	Investigation		D: 0.000m-0.150m Top Soil Brown D: 0.150m-11.000m Grey-Yellow-Brown Silty Clay D: 11.000m-12.800m Grey-Yellow Sandy Clay D: 12.800m-21.700m Grey Orange Silty Clay	1820	North West
125458	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-0.400m Brown Silty Clay D: 0.400m-4.500m Brown-Yellow-Orange Silty Clay D: 4.500m-6.000m Brown-Orange Sandy Clay D: 6.000m-9.400m Grey White Silty Clay D: 9.400m-10.200m Fine Yellow Sand D: 10.200m-12.500m Yellow-Brown Sandy Clay	1843	North West
80129	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-0.300m Organic Material D: 0.300m-1.500m Dark Brown Clay D: 1.500m-3.000m Brown Clay D: 3.000m-4.000m Dark Brown Silty Clay D: 4.000m-14.000m Mottled Grey - Brown Clay D: 14.000m-21.800m Yellow Brown Silty Clay	1843	North West
80125	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-1.300m Topsoil & Clay D: 1.300m-4.800m Solid Waste D: 4.800m-13.000m Mottled Grey - Brown Stiff Clay D: 13.000m-14.000m Yellow Brown Silty-Sandy Clay	1847	North West
80128	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-1.000m Organic Material D: 1.000m-2.000m Dark Brown Clay D: 2.000m-3.000m Black Clay D: 3.000m-4.000m Grey Clay D: 4.000m-9.000m Brown Clay Lighter With Depth D: 9.000m-11.000m Sandy Clay D: 11.000m-12.000m Light Brown Clay D: 12.000m-19.000m Light Brown Mottled Clay	1854	North West
80190	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-0.300m Top Soil Silty Clay D: 0.300m-6.200m Silty Clay D: 6.200m-6.500m White Limestone D: 6.500m-7.200m Silty Tan Clay D: 7.200m-7.400m Limestone D: 7.400m-8.700m Silty Clay D: 8.700m-9.200m Medium Fine Sand D: 9.200m-9.600m White Limestone D: 9.600m-10.500m Medium Fine Sand D: 10.500m-12.000m Silty Clay	1854	North West
80120	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-10.500m Clays D: 10.500m-13.500m Sandy Clays D: 13.500m-21.000m Clays D: 21.000m-22.000m Sandy Clays D: 22.000m-25.000m Clays	1857	North West
80114	Department of Mines (1860 - 1895)	Groundwater	Domestic Stock			1858	South West
80126	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-1.000m Organic Material D: 1.000m-8.000m Dark Brown Clay Lighter With Depth D: 8.000m-8.500m Fine Sand D: 8.500m-9.000m Coarse Sand D: 9.000m-10.500m Light Brown Sandy Clay D: 10.500m-17.000m Light Brown Clay-Orange With Depth	1874	North West
122080		Groundwater	Investigation		D: 0.000m-0.400m Top Soil & Fill D: 0.400m-9.500m Stiff Mottled Clays D: 9.500m-14.000m Silts & Clay With Traces Of Soft Limestone D: 14.000m-15.000m Stiff Mottles Clay	1891	North West
80130	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-1.000m Organic Material D: 1.000m-9.000m Mottled Pale Grey Brown Silty Clay D: 9.000m-11.000m Mottled Pale Grey Clay Gritty D: 11.000m-12.000m Mottled Pale Grey Brown Silty Clay D: 12.000m-13.000m Yellow Brown Silty Clay D: 13.000m-19.000m Limestone Grit In Yellow/Brown Clay D: 19.000m-20.000m Brown Silty Clay Limestone Grit D: 20.000m-22.000m Brown Silty Clay D: 22.000m-30.000m Dark Grey Stiff Cricaceous Clay	1893	North West

Bore Id	Authority	Type	Uses	Initial TD	Log	Dist (m)	Direct
80189	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-0.300m Top Soil Silty Clay D: 0.300m-7.500m Silty Clay Tan & Orange D: 7.500m-8.300m Limestone D: 8.300m-10.300m Silty Clay Grey/Tan D: 10.300m-11.300m Yellow Sand Fine/Medium D: 11.300m-14.000m Silty Clay Tan	1893	North West
124170		Groundwater	Investigation		D: 0.000m-0.100m Black Top Soil D: 0.100m-2.800m Brown Clay D: 2.800m-16.200m Grey Brown Silty Clays	1894	North West
124171		Groundwater	Investigation		D: 0.000m-0.100m Black Top Soil D: 0.100m-1.800m Brown Clay D: 1.800m-10.000m Mottled Silty Clay D: 10.000m-11.800m Brown Silty Sandy Clay D: 11.800m-22.500m Grey-Brown Silty Clay	1897	North West
80127	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-1.000m Organic Material D: 1.000m-8.000m Brown Clay Becoming Lighter With Depth D: 8.000m-8.500m Sandy Clay D: 8.500m-9.000m Coarse Sand D: 9.000m-10.000m Fine Sand D: 10.000m-18.500m Light Brown Clay Becoming Orange With Depth	1901	North West
125457	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-0.200m Brown Silt D: 0.200m-1.200m Brown Silty Clay D: 1.200m-2.400m Grey-Orange Sandy-Silty Clay D: 2.400m-7.800m Grey-Brown-White Silty Clay D: 7.800m-9.000m Orange-Red Sandy Clay D: 9.000m-15.000m Grey-White-Brown Silty Clay	1906	North West
80139	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-1.000m Organic D: 1.000m-5.000m Grey-Brown Clay D: 5.000m-7.000m Red-Brown Clay D: 7.000m-19.000m Mottled Pale Grey Clay D: 19.000m-22.000m Yellow Brown Clay D: 22.000m-22.100m Limestone D: 22.100m-36.000m Dark Grey Clay	1910	North West
80187	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-0.300m Clayey Silt Top Soil D: 0.300m-2.500m Silty Clay (Medium Plastic Grey/Brown Yellow) D: 2.500m-3.800m Silty Clay (Highly Plastic Tan) D: 3.800m-4.000m Yellow & White Limestone D: 4.000m-4.500m Silty Tan Clay D: 4.500m-5.000m Hard White Limestone D: 5.000m-7.000m Silty Clay Medium Plasticity Tan D: 7.000m-8.000m Silty Clay High Plasticity D: 8.000m-8.500m Hard White Limestone D: 8.500m-11.500m Silty Clay Yellow-Brown Slight Wave Fine Sand D: 11.500m-12.500m Sand Some Silt Medium Grain D: 12.500m-15.000m Silty Clay Medium Yellow	1923	North West
80131	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-1.000m Organic Material D: 1.000m-2.000m Brown Stiff Gritty Clay D: 2.000m-4.000m Very Stiff Grey-Brown Clay D: 4.000m-9.000m Pale Grey Silty Clay D: 9.000m-15.000m Pale Grey-Brown Mottled Clay	1926	North West
80188	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-0.300m Clayey Silt Top Soil D: 0.300m-3.500m Silty Grey Clay D: 3.500m-3.800m Hard White Limestone D: 3.800m-5.500m Brown/Grey/Orange Sandy Clay D: 5.500m-8.500m Silty Sandy Clay D: 8.500m-8.600m Hard White Limestone D: 8.600m-12.000m Silty Clay D: 12.000m-12.600m Silty Sand D: 12.600m-15.000m Sandy Clay Medium Grey/Brown	1942	North West
122079		Groundwater	Investigation		D: 0.000m-1.000m Top Soil (Clayey D: 1.000m-11.000m Mottled Stiff Clay D: 11.000m-17.500m Small Seams Of Limestone Intermixed With Clays & S	1967	North West
80121	Private Landholders Bore	Groundwater	Investigation		D: 0.000m-7.000m Clays D: 7.000m-10.000m Sands D: 10.000m-23.000m Clays D: 23.000m-24.000m Sandy Clays D: 24.000m-25.000m Clays	1993	North West

Historical Mining Activity - Shafts

31-49 Melaluka Road, Leopold, VIC 3224

Historical Mining Activity - Shafts

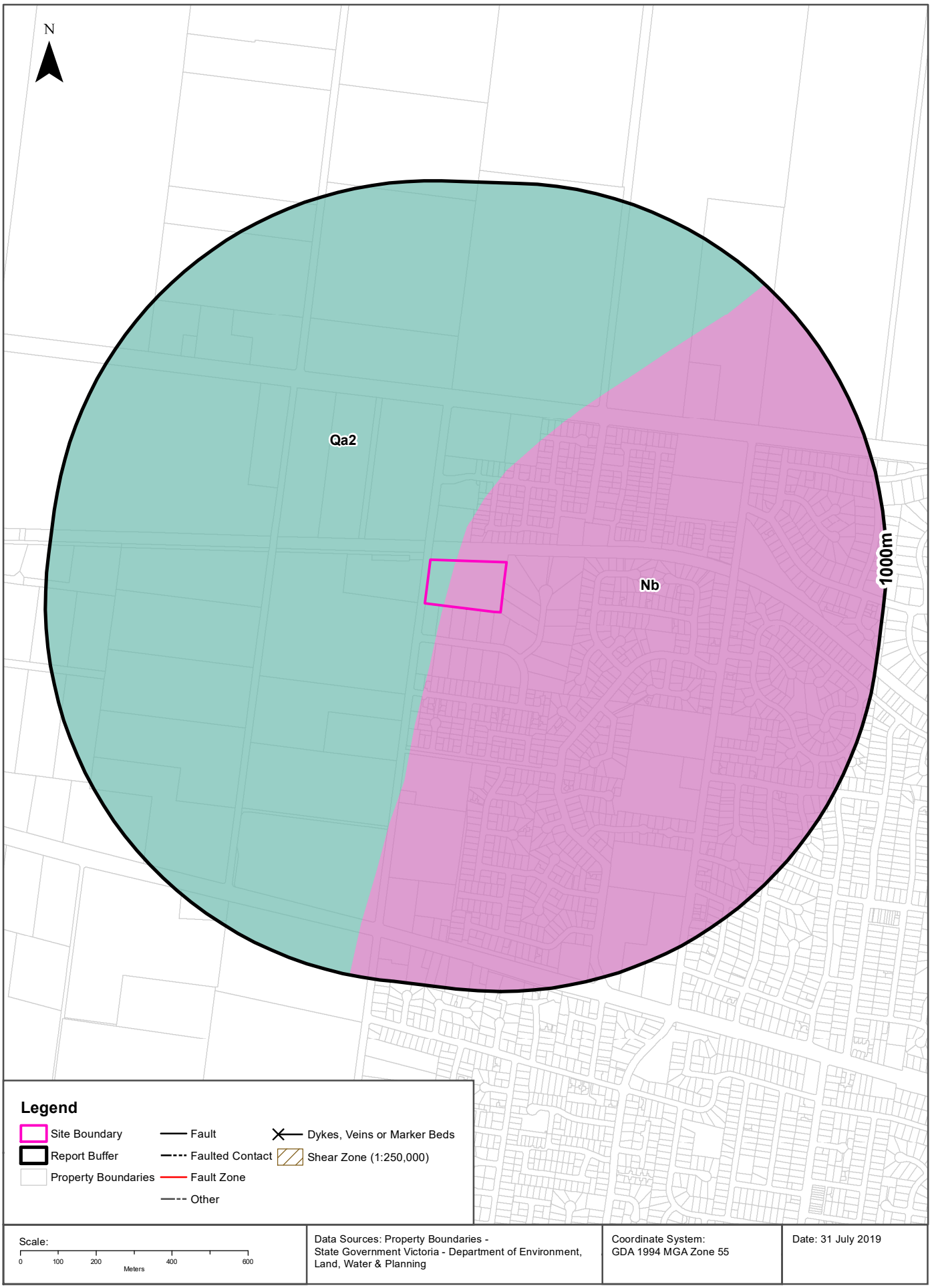
Mine Shaft Locations were collected by a variety of methods from 1869 in some areas of the state, mainly concentrating in Ballarat and Bendigo. In places a shaft may be recorded multiple times with a different source. In cases where several shaft locations are shown close together (generally with separations less than stated position errors) and they have different sources, it is possible that one shaft has been mapped several times. In cases where several shaft locations are shown close together but they have the same information source, it is possible that each shaft location represents a different shaft on the ground.

Historical Mine Shafts within the dataset buffer:

Map Id	Name	Source	Depth (m)	Collar (ft)	Fill/Cap Method	Location Desc	Location Accuracy	Distance	Direction
N/A	No records in buffer								

Geology 1:50,000

31-49 Melaluka Road, Leopold, VIC 3224



Geology

31-49 Melaluka Road, Leopold, VIC 3224

Geological Units

What are the Geological Units onsite?

Symbol	Name	Description	Geological Age	Lithology	Dataset
Nb	Brighton Group(Nb): generic	Gravel, sand, silt: variably calcareous to ferruginous sandstones and coquinas; marine to nonmarine	Miocene to Pliocene	silt material (significant); sand (significant); gravel material (significant)	1:50,000
Qa2	alluvial terrace deposits(Qa2): generic	Gravel, sand, silt: variably sorted and rounded, generally unconsolidated; dissected to form terraces higher than Qa1, alluvial floodplain deposits	Pleistocene to Pleistocene	gravel material (significant); sand (significant); silt material (significant)	1:50,000

What are the Geological Units within the dataset buffer?

Symbol	Name	Description	Geological Age	Lithology	Dataset
Nb	Brighton Group(Nb): generic	Gravel, sand, silt: variably calcareous to ferruginous sandstones and coquinas; marine to nonmarine	Miocene to Pliocene	silt material (significant); sand (significant); gravel material (significant)	1:50,000
Qa2	alluvial terrace deposits(Qa2): generic	Gravel, sand, silt: variably sorted and rounded, generally unconsolidated; dissected to form terraces higher than Qa1, alluvial floodplain deposits	Pleistocene to Pleistocene	gravel material (significant); sand (significant); silt material (significant)	1:50,000

Geology

31-49 Melaluka Road, Leopold, VIC 3224

Geological Structures

What are the Geological Faults or Faulted Contacts onsite?

Map Id	Type	Name	Contact	Positional Accuracy	Dataset
No features					1:50,000

What are the Dykes, Marker Beds and Veins onsite?

Map Id	Type	Name	Description	Positional Accuracy	Dataset
No features					1:50,000

What are the Shear Zones onsite (1:250,000 scale)?

Map Id	Type	Name	Description	Positional Accuracy	Dataset
No features					1:250,000

What are the Geological Faults or Faulted Contacts within the dataset buffer?

Map Id	Type	Name	Contact	Positional Accuracy	Dataset
No features					1:50,000

What are the Dykes, Marker Beds and Veins within the dataset buffer?

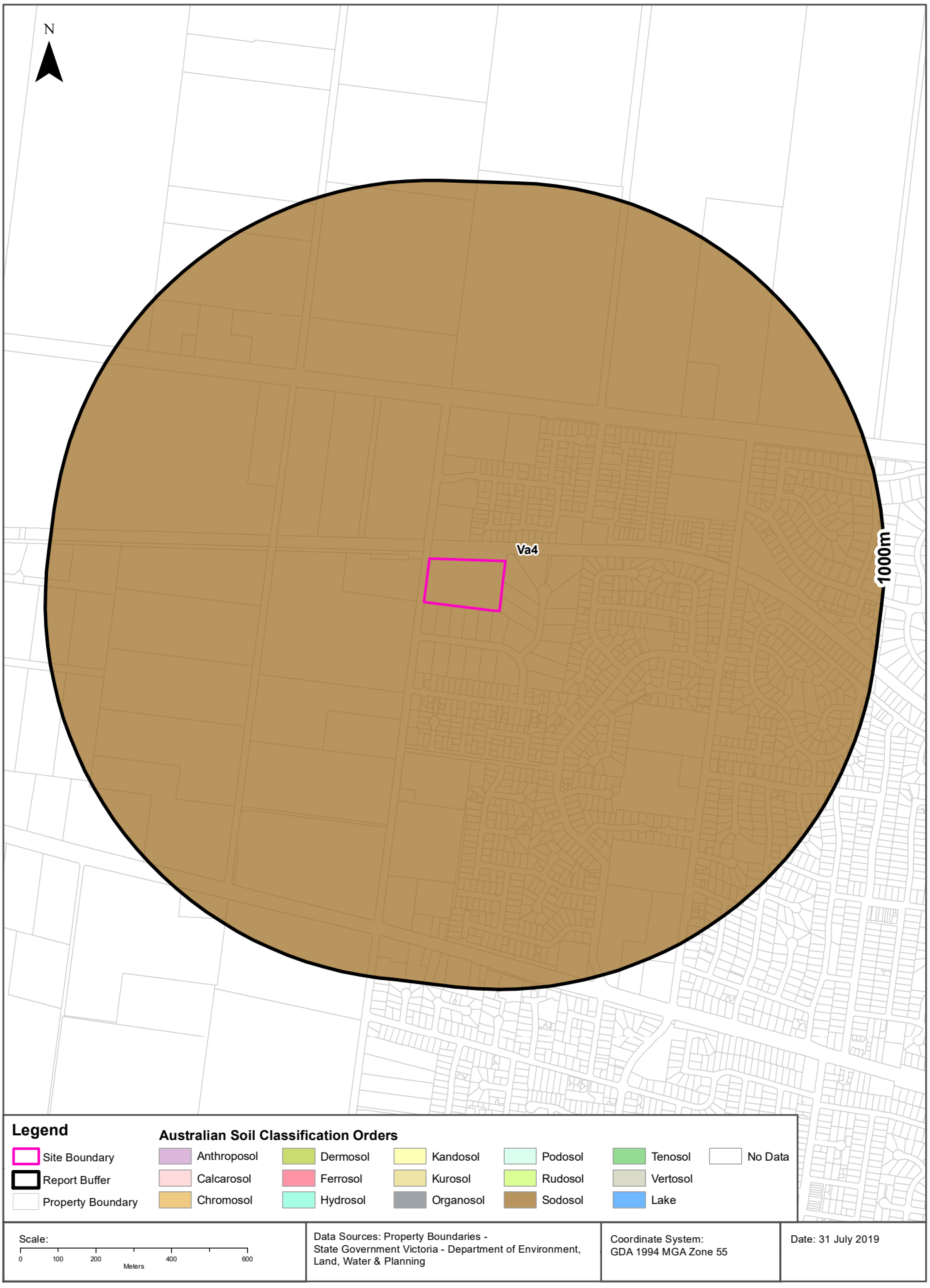
Map Id	Type	Name	Description	Positional Accuracy	Dataset
No features					1:50,000

What are the Shear Zones within the dataset buffer (1:250,000 scale)?

Map Id	Type	Name	Description	Positional Accuracy	Dataset
No features					1:250,000

Atlas of Australian Soils

31-49 Melaluka Road, Leopold, VIC 3224



Soil Landscapes

31-49 Melaluka Road, Leopold, VIC 3224

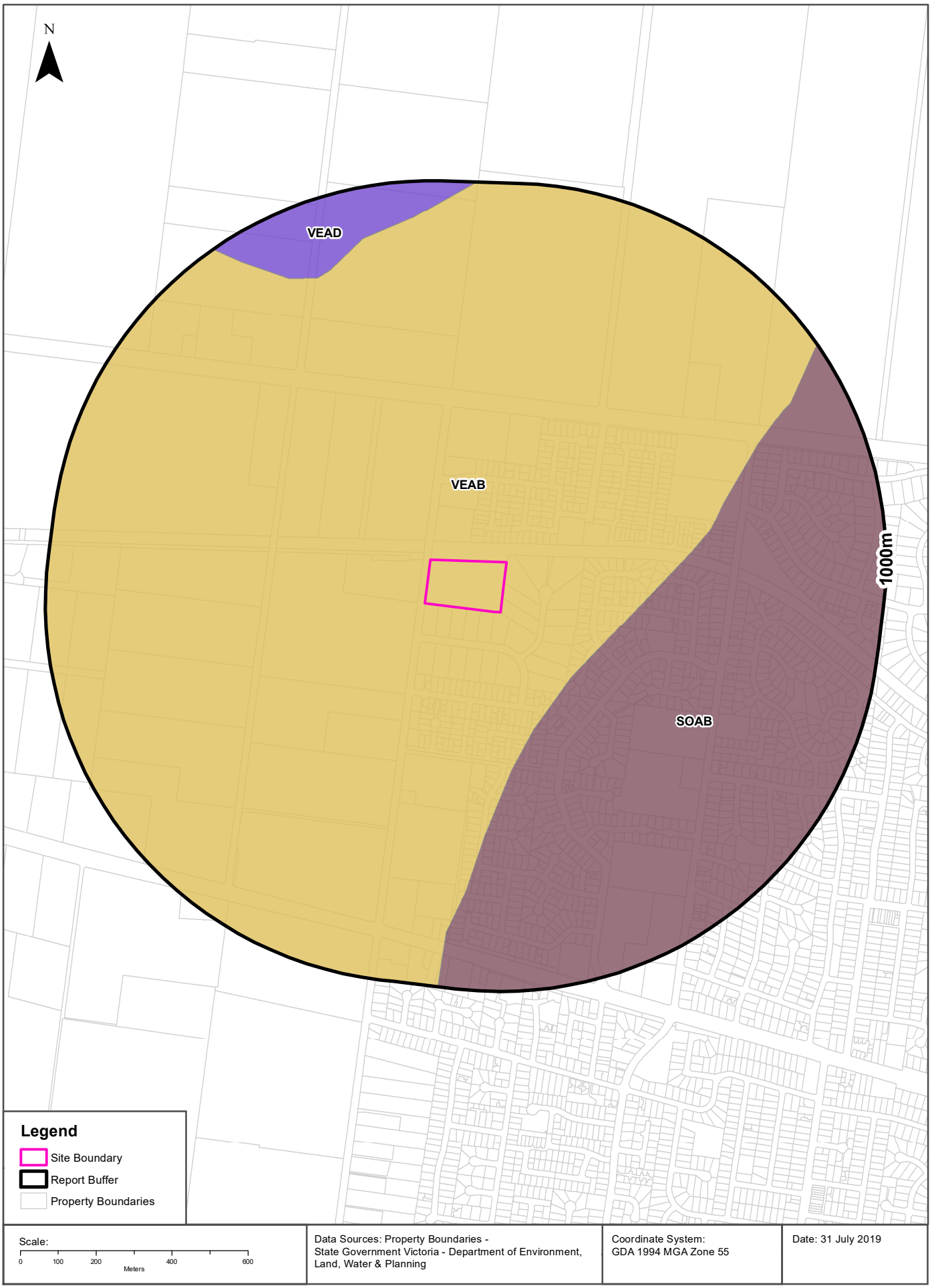
Atlas of Australian Soils

Australian soil types within the dataset buffer:

Symbol	Soil Order	Map Unit Description	Distance
Va4	Sodosol	Undulating outwash plains: hard alkaline yellow mottled soils (Dy3.43) and (Dy5.43) with smaller areas of (Dr2.33) shallow forms (Um6), (Uc6.11), and (Gc1.12).	0m

Victorian Soil Type Mapping

31-49 Melaluka Road, Leopold, VIC 3224



Soil Landscapes

31-49 Melaluka Road, Leopold, VIC 3224

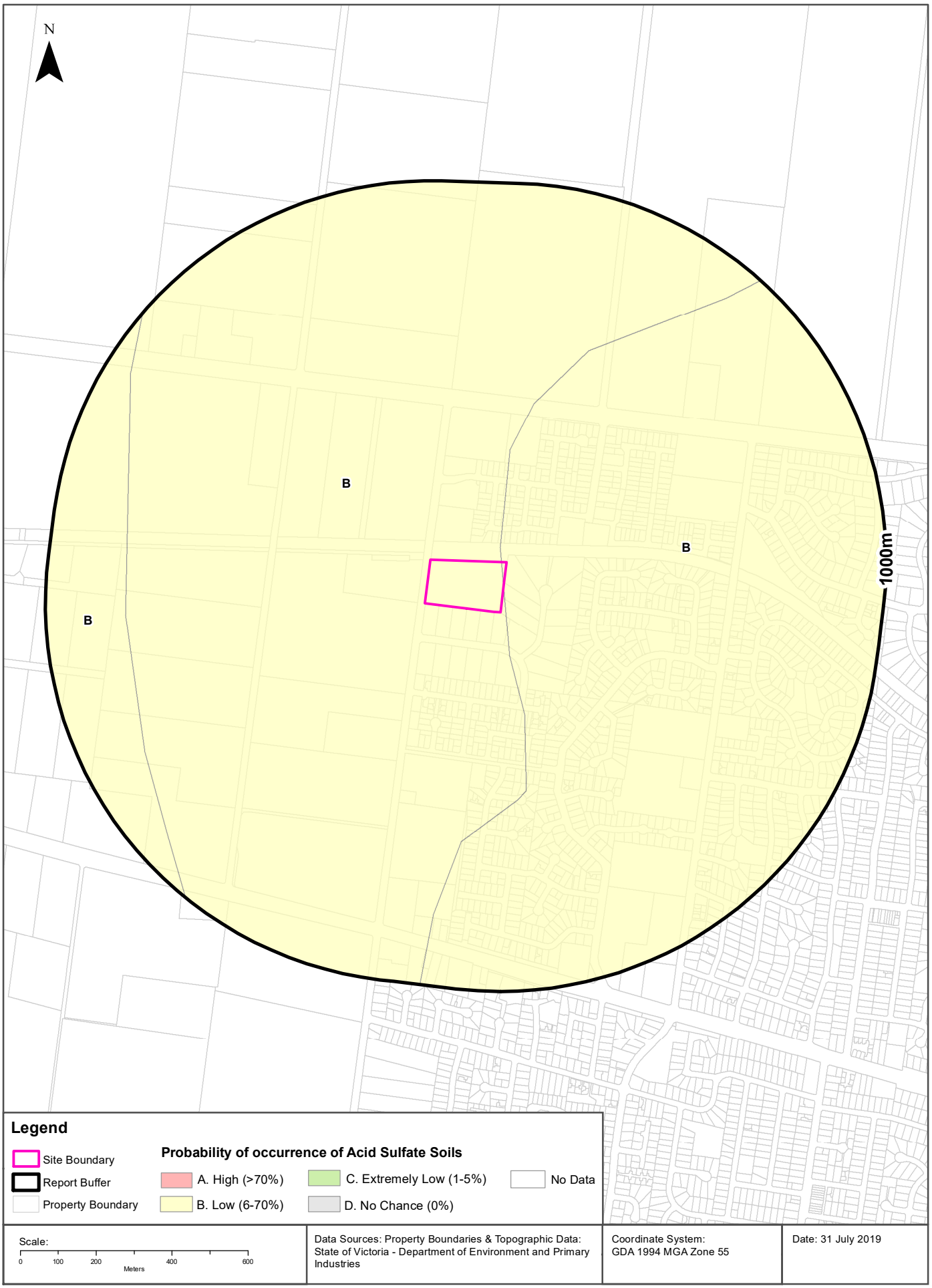
Victorian Soil Type Mapping

Victorian Soil Types within the dataset buffer:

Symbol	Description	Distance
VEAB	Brown Vertosols	0m
SOAB	Brown Sodosols	251m
VEAD	Grey Vertosols	801m

Atlas of Australian Acid Sulfate Soils

31-49 Melaluka Road, Leopold, VIC 3224



Acid Sulfate Soils

31-49 Melaluka Road, Leopold, VIC 3224

Atlas of Australian Acid Sulfate Soils

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

PROBCLASS	Description	Distance
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m

Coastal Acid Sulfate Soils

31-49 Melaluka Road, Leopold, VIC 3224

Coastal Acid Sulfate Soils

What are the on-site Coastal Acid Sulfate Soil types?

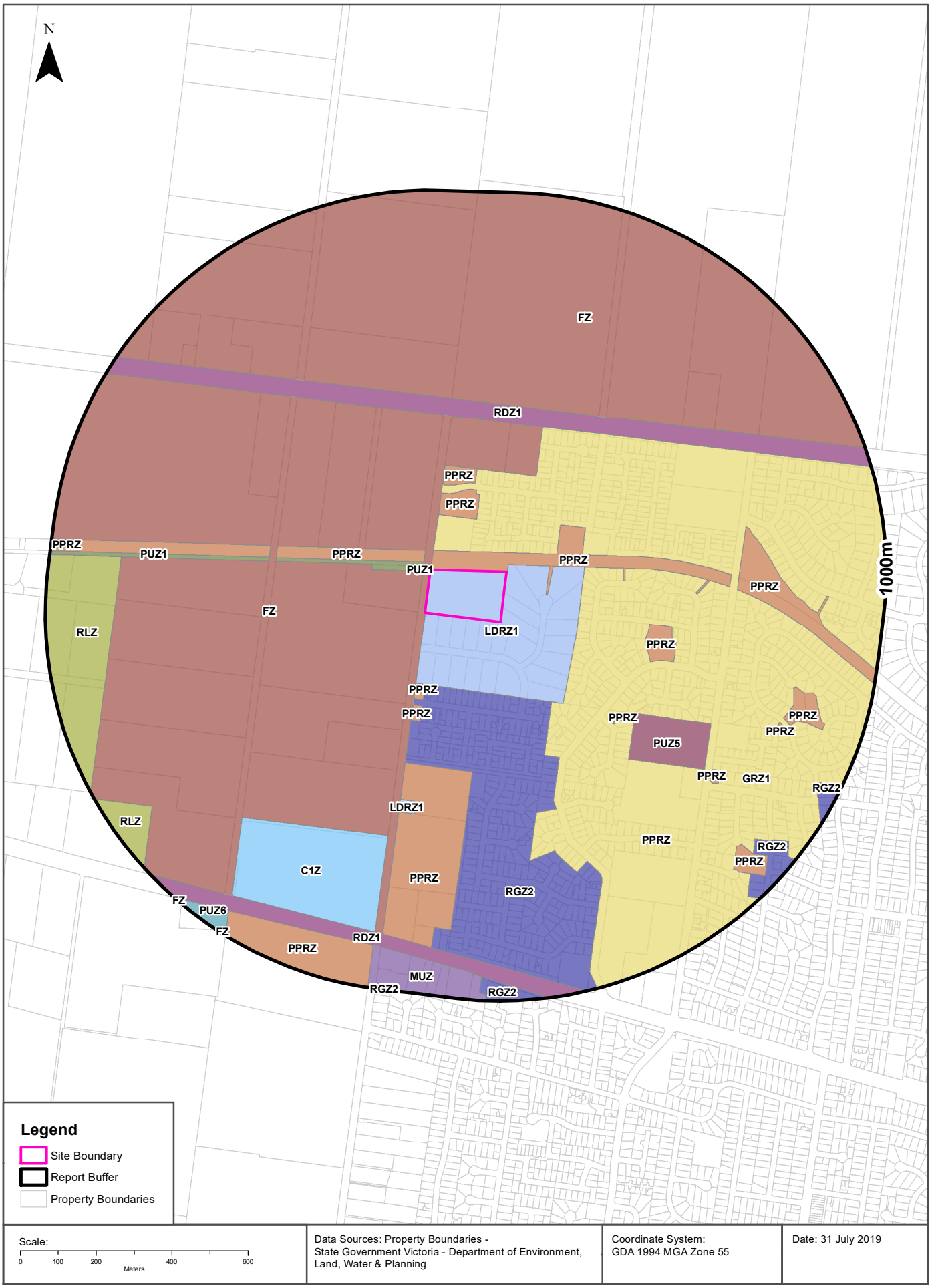
Coastal Acid Sulfate Soil Types
There are no Acid Sulfate areas onsite

What are the Coastal Acid Sulfate Soil types within the dataset buffer?

Coastal Acid Sulfate Soil Types	Distance	Direction
There are no Acid Sulfate areas within the report buffer		

Planning Zones

31-49 Melaluka Road, Leopold, VIC 3224



Planning Zones

31-49 Melaluka Road, Leopold, VIC 3224

Planning Zones

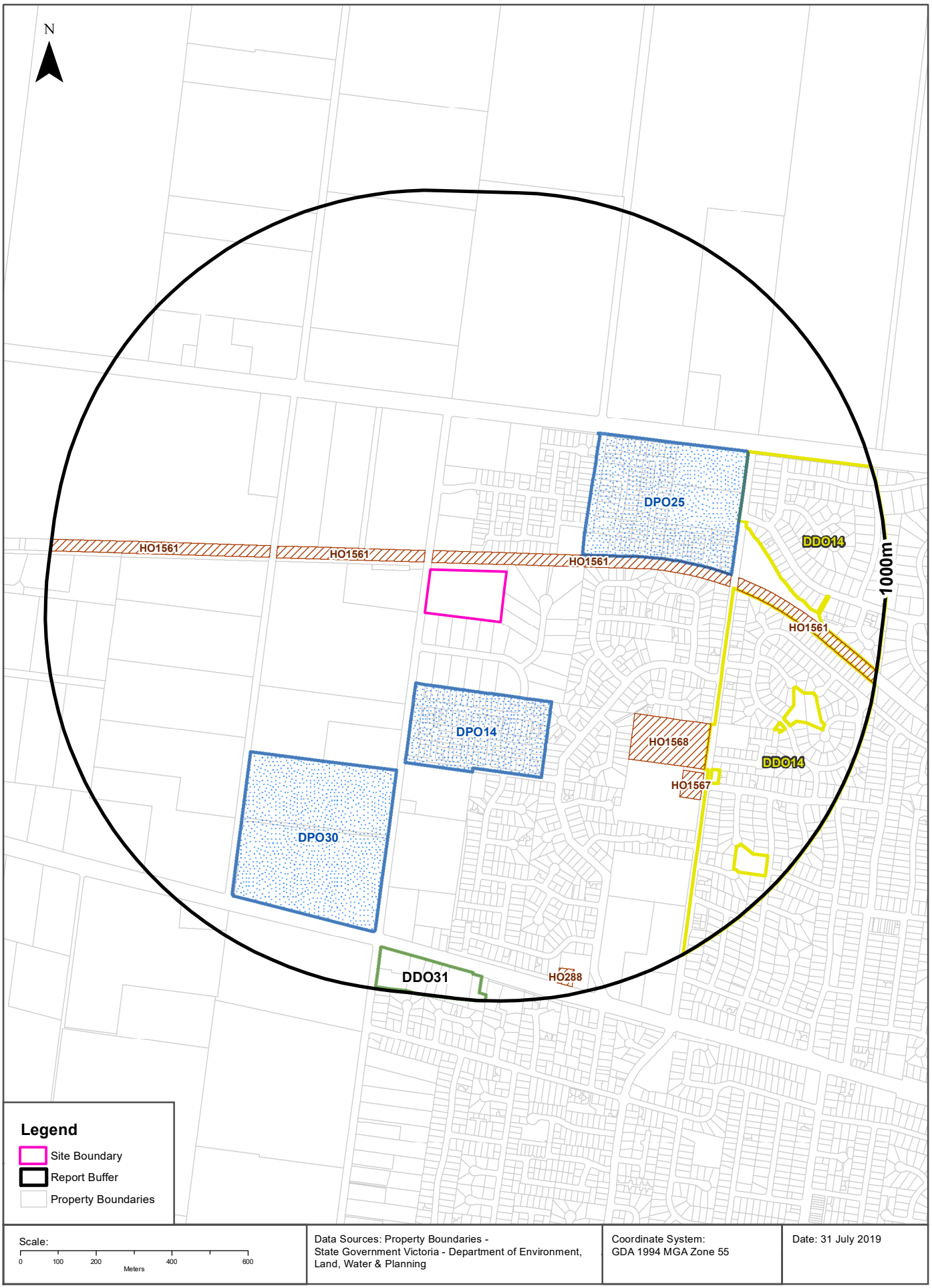
Planning zones within the dataset buffer:

Zone Code	Description	Distance	Direction
LDRZ1	LOW DENSITY RESIDENTIAL ZONE - SCHEDULE 1	0m	Onsite
FZ	FARMING ZONE	0m	West
PPRZ	PUBLIC PARK AND RECREATION ZONE	0m	East
PUZ1	PUBLIC USE ZONE - SERVICE AND UTILITY	20m	West
PPRZ	PUBLIC PARK AND RECREATION ZONE	27m	West
GRZ1	GENERAL RESIDENTIAL ZONE - SCHEDULE 1	50m	East
PPRZ	PUBLIC PARK AND RECREATION ZONE	137m	North
PPRZ	PUBLIC PARK AND RECREATION ZONE	187m	South West
RGZ2	RESIDENTIAL GROWTH ZONE - SCHEDULE 2	187m	South
PPRZ	PUBLIC PARK AND RECREATION ZONE	224m	North
PPRZ	PUBLIC PARK AND RECREATION ZONE	244m	South West
PPRZ	PUBLIC PARK AND RECREATION ZONE	382m	East
RDZ1	ROAD ZONE - CATEGORY 1	391m	North West
PPRZ	PUBLIC PARK AND RECREATION ZONE	395m	South East
PPRZ	PUBLIC PARK AND RECREATION ZONE	398m	South
PPRZ	PUBLIC PARK AND RECREATION ZONE	426m	West
PUZ1	PUBLIC USE ZONE - SERVICE AND UTILITY	426m	West
PUZ5	PUBLIC USE ZONE - CEMETERY/CREMATORIUM	427m	South East
FZ	FARMING ZONE	437m	North
LDRZ1	LOW DENSITY RESIDENTIAL ZONE - SCHEDULE 1	495m	South
C1Z	COMMERCIAL 1 ZONE	595m	South West
PPRZ	PUBLIC PARK AND RECREATION ZONE	608m	East
PPRZ	PUBLIC PARK AND RECREATION ZONE	679m	South East
PPRZ	PUBLIC PARK AND RECREATION ZONE	696m	South East
PPRZ	PUBLIC PARK AND RECREATION ZONE	773m	South East
PPRZ	PUBLIC PARK AND RECREATION ZONE	786m	East
RLZ	RURAL LIVING ZONE	813m	West
PPRZ	PUBLIC PARK AND RECREATION ZONE	857m	South East
RGZ2	RESIDENTIAL GROWTH ZONE - SCHEDULE 2	880m	South East
PPRZ	PUBLIC PARK AND RECREATION ZONE	883m	South West
MUZ	MIXED USE ZONE	886m	South

Zone Code	Description	Distance	Direction
RGZ2	RESIDENTIAL GROWTH ZONE - SCHEDULE 2	936m	South
PUZ6	PUBLIC USE ZONE - LOCAL GOVERNMENT	939m	South West
FZ	FARMING ZONE	987m	South West

Planning Overlays

31-49 Melaluka Road, Leopold, VIC 3224



Planning Overlays

31-49 Melaluka Road, Leopold, VIC 3224

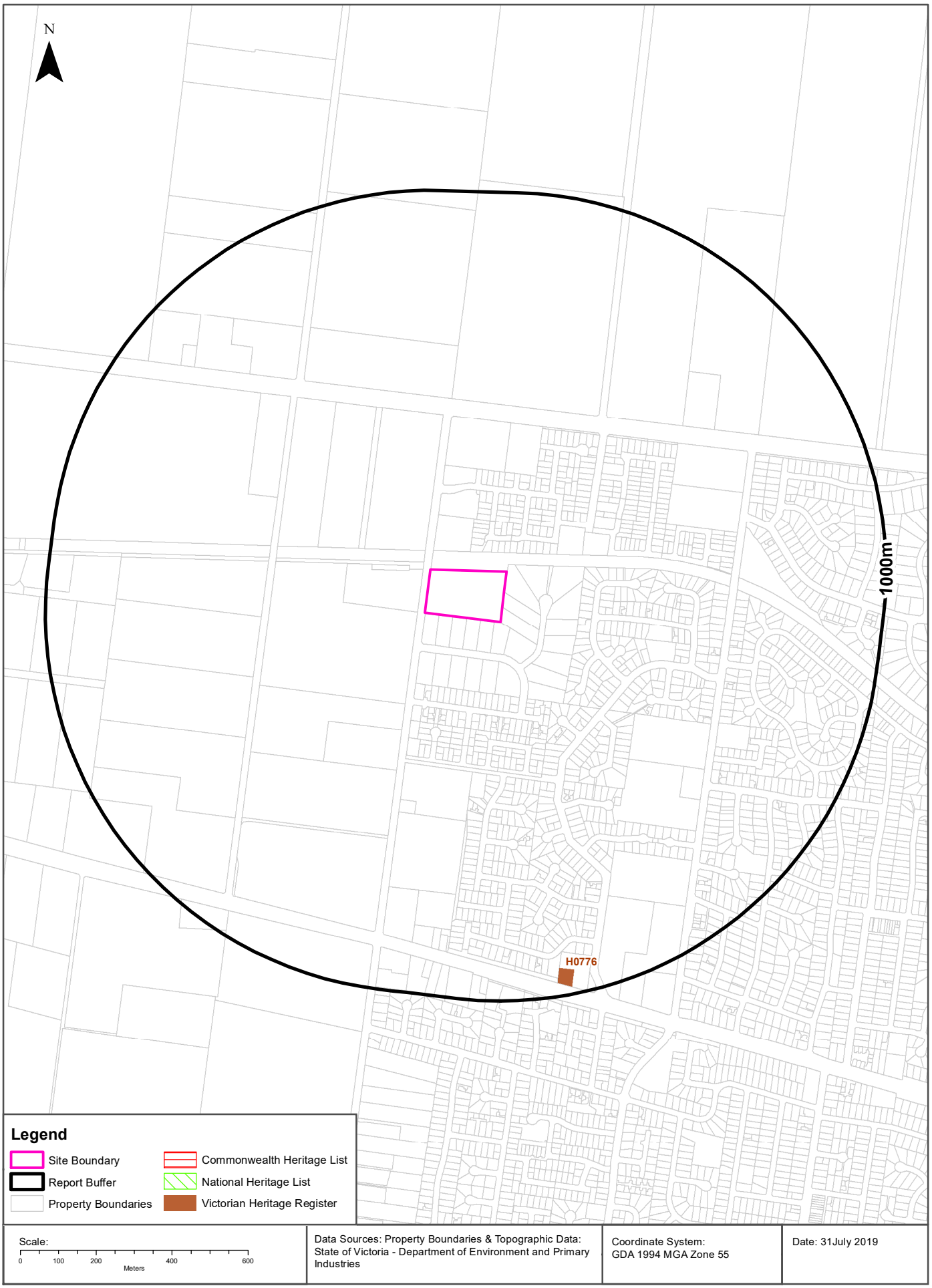
Planning Overlays

Planning overlays within the dataset buffer:

Zone Code	Description	Distance	Direction
HO1561	HERITAGE OVERLAY (HO1561)	19m	East
HO1561	HERITAGE OVERLAY (HO1561)	27m	West
DPO14	DEVELOPMENT PLAN OVERLAY - SCHEDULE 14	187m	South
DPO25	DEVELOPMENT PLAN OVERLAY - SCHEDULE 25	202m	North East
DPO30	DEVELOPMENT PLAN OVERLAY - SCHEDULE 30	422m	South West
HO1561	HERITAGE OVERLAY (HO1561)	426m	West
HO1568	HERITAGE OVERLAY (HO1568)	427m	South East
DDO14	DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 14	595m	South East
HO1561	HERITAGE OVERLAY (HO1561)	608m	East
HO1567	HERITAGE OVERLAY (HO1567)	619m	South East
DDO14	DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 14	625m	East
DDO31	DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 31	888m	South
HO288	HERITAGE OVERLAY (HO288)	925m	South

Heritage

31-49 Melaluka Road, Leopold, VIC 3224



Heritage

31-49 Melaluka Road, Leopold, VIC 3224

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							

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							

Victorian Heritage Register

What are the Victorian Heritage Register items located within the dataset buffer?:

VHR Number	Description	Distance	Direction
H0776	ST MARKS ON THE HILL	924m	South

Heritage

31-49 Melaluka Road, Leopold, VIC 3224

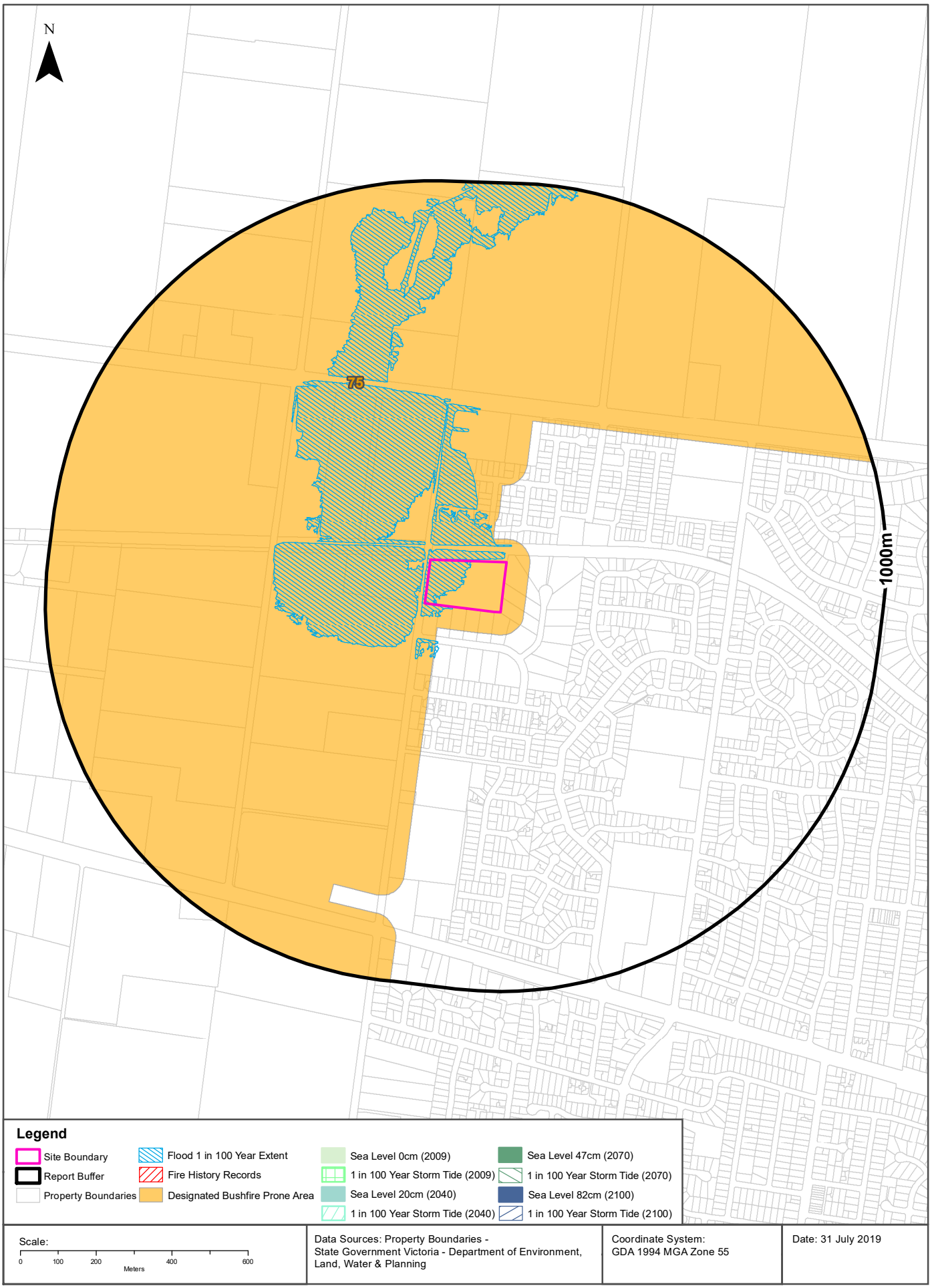
Cultural Heritage Sensitivity

Areas of Cultural Heritage Sensitivity as specified in Division 3 of Part 2 in the Victorian Aboriginal Heritage Regulations 2007, within the dataset buffer:

Map Id	Distance	Direction
No records in buffer		

Natural Hazards

31-49 Melaluka Road, Leopold, VIC 3224



Natural Hazards

31-49 Melaluka Road, Leopold, VIC 3224

Bushfire Prone Areas

What are the designated bushfire prone areas within the dataset buffer?

Map ID	Feature	Plan No	LGA	Gazetted Date	Distance	Direction
75	Designated Bushfire Prone Area	LEGL./19-146	GREATER GEELONG	04/04/2019	0m	Onsite

Fire History

What are the fire history records of fires primarily on public land, within the dataset buffer?

Map Id	Fire Type	Fire Key	Season	Fire No	Fire Name	Treatment	Fire Cover	Start Date	Dist (m)	Direction
N/A	No records within buffer									

Flood - 1 in 100 year modelled flood extent

What 1 in 100 year flood extent features exist within the dataset buffer?

Feature	Source	Method	Scale	Modified Date	Distance	Direction
100 Year Flood Outline	City of Greater Geelong	Modelled		01/03/2012	0m	Onsite

Natural Hazards

31-49 Melaluka Road, Leopold, VIC 3224

Victorian Coastal Inundation Sea Level Rise

What coastal inundation sea level rise features exist within the dataset buffer?

Description	Distance	Direction
No records within buffer		

Ecological Constraints - Native Vegetation 2005 & Ramsar Wetlands

31-49 Melaluka Road, Leopold, VIC 3224

Ecological Constraints

31-49 Melaluka Road, Leopold, VIC 3224

Native Vegetation (Modelled 2005 Ecological Vegetation Classes)

What native vegetation exists within the dataset buffer?

Veg Code	EVC Name	EVCCode	Group	Subgroup	Bioregion	Conservation Status	Geographic Occurance	Distance
OtP_0055	Plains Grassy Woodland	0055	Plains Woodlands or Forests	Freely-draining	Otway Plain	Endangered	Common	0m

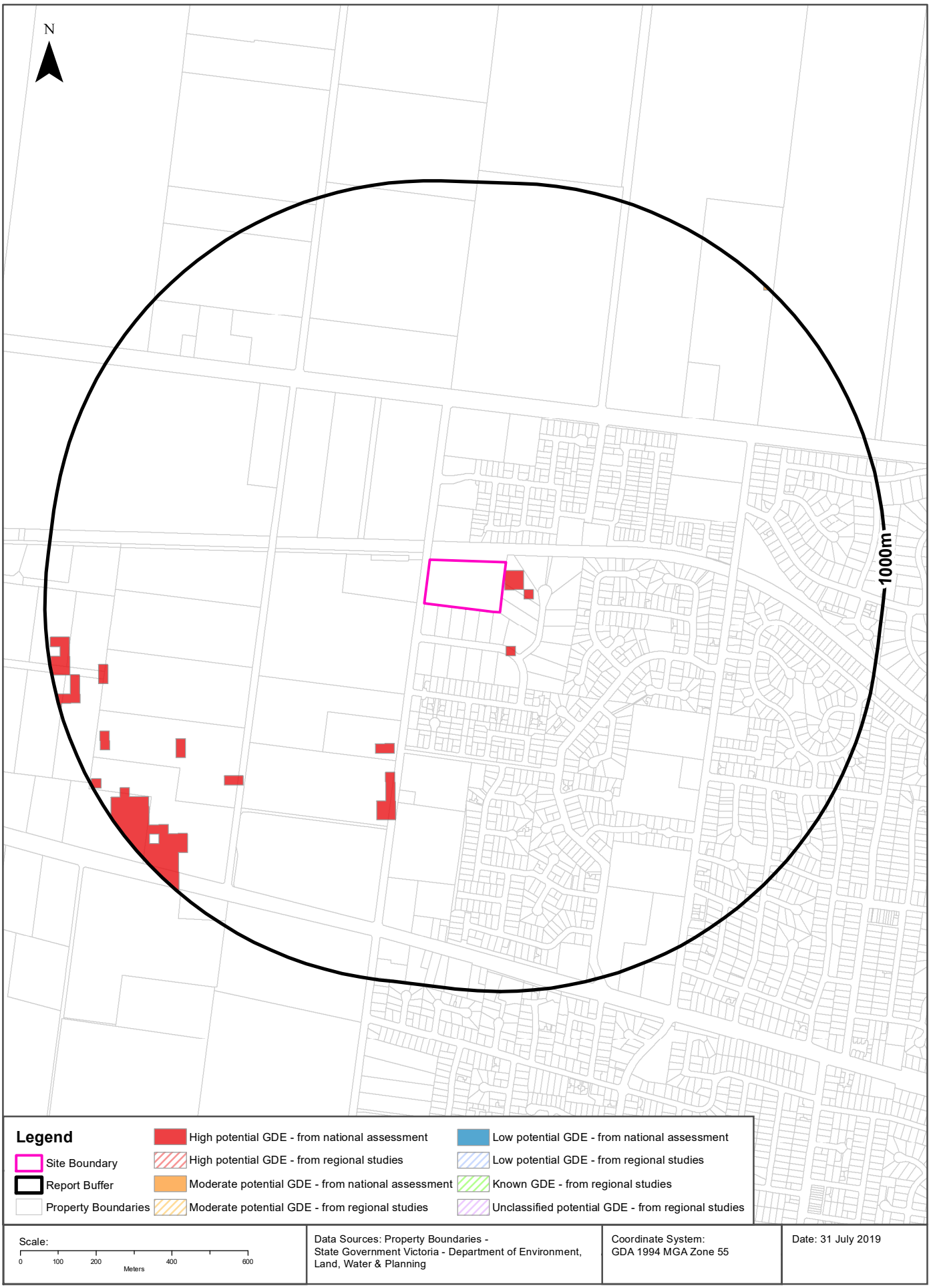
Ramsar Wetlands

What Ramsar wetland areas exist within the dataset buffer?

Map ID	Site Name	Lake Name	Distance	Direction
N/A	No records within buffer			

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

31-49 Melaluka Road, Leopold, VIC 3224



Ecological Constraints

31-49 Melaluka Road, Leopold, VIC 3224

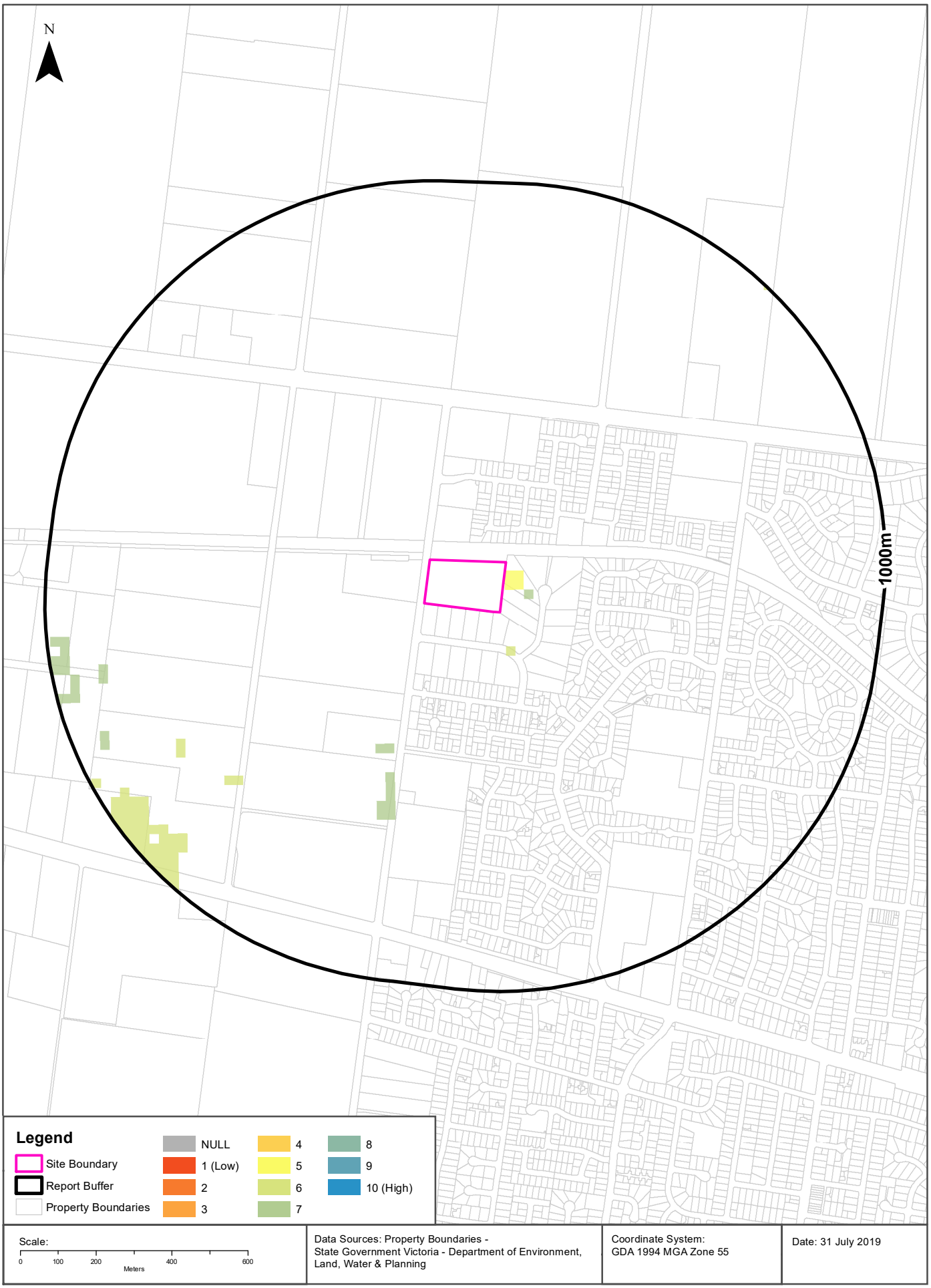
Groundwater Dependent Ecosystems Atlas

What GDEs exist within the dataset buffer?

GDE Type	Name	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial		High potential GDE - from national assessment	Plains mainly on basalt lavas with many volcanic forms and lakes, partly on weak sedimentary rocks.	Vegetation	Unconsolidated sedimentary	0m
Terrestrial		Moderate potential GDE - from national assessment	Plains mainly on basalt lavas with many volcanic forms and lakes, partly on weak sedimentary rocks.	Vegetation	Unconsolidated sedimentary	987m

Inflow Dependent Ecosystems Likelihood

31-49 Melaluka Road, Leopold, VIC 3224



Ecological Constraints

31-49 Melaluka Road, Leopold, VIC 3224

Inflow Dependent Ecosystems Likelihood

What IDEs exist within the dataset buffer?

GDE Type	Name	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial		5	Plains mainly on basalt lavas with many volcanic forms and lakes, partly on weak sedimentary rocks.	Vegetation	Unconsolidated sedimentary	0m
Terrestrial		7	Plains mainly on basalt lavas with many volcanic forms and lakes, partly on weak sedimentary rocks.	Vegetation	Unconsolidated sedimentary	53m
Terrestrial		6	Plains mainly on basalt lavas with many volcanic forms and lakes, partly on weak sedimentary rocks.	Vegetation	Unconsolidated sedimentary	90m
Terrestrial		10	Plains mainly on basalt lavas with many volcanic forms and lakes, partly on weak sedimentary rocks.	Vegetation	Unconsolidated sedimentary	999m

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

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Environmental Site Assessments

Appendix 2: Title History

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 08713 FOLIO 254

Security no : 124078616222N
Produced 31/07/2019 12:33 PM

LAND DESCRIPTION

Lot 1 on Title Plan 379468S.
PARENT TITLE Volume 06853 Folio 462
Created by instrument C748033 12/04/1967

REGISTERED PROPRIETOR

Estate Fee Simple
Joint Proprietors
ROBERT JAMES CLIFTON
ANA MARIA CLIFTON both of 45 MELALUKA RD LEOPOLD
S654596L 25/08/1993

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AR717461V 03/12/2018
MEMBERS EQUITY BANK LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE TP379468S FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

Additional information: (not part of the Register Search Statement)

Street Address: 31-49 MELALUKA ROAD LEOPOLD VIC 3224

DOCUMENT END

Imaged Document Cover Sheet

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Document Type	**Plan**
Document Identification	**TP379468S**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**31/07/2019 12:35**

TITLE PLAN		EDITION 1	TP 379468S

Location of Land

Parish: MOOLAP
Township:
Section: 5
Crown Allotment: 1B(PT)
Crown Portion:
BLOCK: 1
Last Plan Reference:
Derived From: VOL 8713 FOL 254
Depth Limitation: NIL

Notations

ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN

Description of Land / Easement Information

THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT
COMPILED: 26/06/2000
VERIFIED: AC

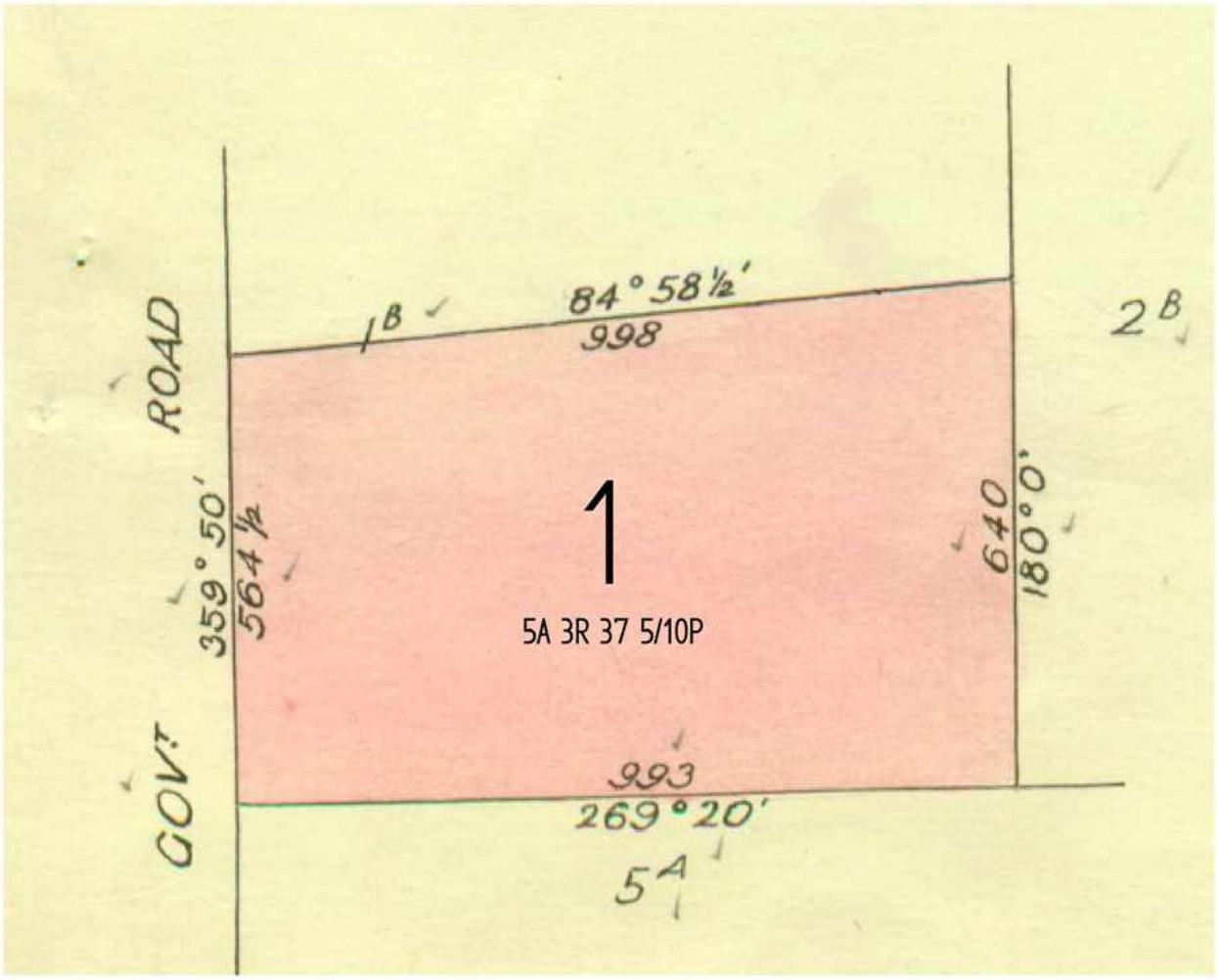

TABLE OF PARCEL IDENTIFIERS
WARNING: Where multiple parcels are referred to or shown on this Title Plan this does not imply separately disposable parcels under Section 8A of the Sale of Land Act 1962
PARCEL 1 = CA 1B (PT)

LENGTHS ARE IN LINKS	Metres = 0.3048 x Feet Metres = 0.201168 x Links		Sheet 1 of 1 sheets

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Volume 8713 Folio 254
Folio Creation: Created as paper folio continued as computer folio
Parent title Volume 06853 Folio 462

THE IMAGE OF THE FOLIO CEASED TO BE THE DIAGRAM LOCATION ON 25/09/2002 05:01:26 AM

RECORD OF HISTORICAL DEALINGS

Date Lodged for Registration	Date Recorded on Register	Dealing	Imaged	Dealing Type and Details

RECORD OF VOTS DEALINGS

Date Lodged for Registration	Date Recorded on Register	Dealing	Imaged
11/02/2002	11/02/2002	AB067541H	Y
DISCHARGE OF MORTGAGE MORTGAGE(S) REMOVED W622936M			
11/02/2002	11/02/2002	AB067542F	Y
MORTGAGE OF LAND MORTGAGE AB067542F 11/02/2002 COMMONWEALTH BANK OF AUSTRALIA			
20/07/2010	20/07/2010	AH375091S	Y
MORTGAGE OF LAND MORTGAGE AH375091S 20/07/2010 COMMONWEALTH BANK OF AUSTRALIA			
05/11/2010	05/11/2010	AH596583L (O)	Y
DISCHARGE OF MORTGAGE AFFECTED ENCUMBRANCE(S) AND REMOVED MORTGAGE(S) MORTGAGE AB067542F MORTGAGE AH375091S			
05/11/2010	05/11/2010	AH596584J (O)	Y
MORTGAGE OF LAND MORTGAGE AH596584J 05/11/2010 NATIONAL AUSTRALIA BANK LTD			
27/11/2015	27/11/2015	AM362421C	Y
DISCHARGE OF MORTGAGE AFFECTED ENCUMBRANCE(S) AND REMOVED MORTGAGE(S) MORTGAGE AH596584J			
27/11/2015	27/11/2015	AM362422A	Y

MORTGAGE OF LAND
MORTGAGE AM362422A 27/11/2015
TEACHERS MUTUAL BANK LTD

03/12/2018 03/12/2018 AR716670R (E) N

APPLICATION TO NOMINATE AN ECT TO AN ELECTRONIC INSTRUMENT
ELF Id: 3376449
Removed by Dealing AR717460X

03/12/2018 03/12/2018 AR717460X (E) N

DISCHARGE OF MORTGAGE
AFFECTED ENCUMBRANCE(S) AND REMOVED MORTGAGE(S)
MORTGAGE AM362422A

03/12/2018 03/12/2018 AR717461V (E) N

MORTGAGE OF LAND
MORTGAGE AR717461V 03/12/2018
MEMBERS EQUITY BANK LTD

STATEMENT END

VOTS Snapshot

Volume 08713 Folio 254
1240004327340
Produced 11/02/2002 11:05 am

LAND DESCRIPTION

Lot 1 on Title Plan 379468S (formerly known as part of Crown Allotment 1B Section 5 Block 1 Parish of Moolap).
PARENT TITLE Volume 06853 Folio 462
Created by instrument C748033 12/04/1967

REGISTERED PROPRIETOR

Estate Fee Simple
Joint Proprietors
ROBERT JAMES CLIFTON
ANA MARIA CLIFTON both of 45 MELALUKA RD LEOPOLD
S654596L 25/08/1993

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE W622936M 24/02/2000
CITIBANK LTD

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DIAGRAM LOCATION

SEE DIAGRAM ON IMAGED FOLIO VOLUME 8713 FOLIO 254 FOR FURTHER DETAILS AND BOUNDARIES

Paper Title Images

8713/254 - Version 1, Date 16/03/2000

ORIGINAL

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REGISTER BOOK

VOL. 8713 FOL. 254

VICTORIA

Certificate of Title

INDEX PLAN No. 36

PARCEL No. 521

UNDER THE "TRANSFER OF LAND ACT"

521

VOL. 8713 FOL. 254

ROBERT GEORGE BENNETT of 206 Shannon Avenue Newtown Geelong Labourer is now the proprietor of an estate in fee simple subject to the encumbrances notified hereunder in ALL THAT piece of land delineated and coloured red on the map in the margin containing Five acres Three roods Thirty seven perches and Five tenths of a perch or thereabouts being part of Crown Allotment One^{B} Section 5 Block One Parish of Moolap County of Grant - - - - - - - - - - - - - - - - - - -

DATED the 12th day of April 1967

LINKS	METRES
564.5	113.559
640.0	128.748
993.0	199.760
998.0	200.766

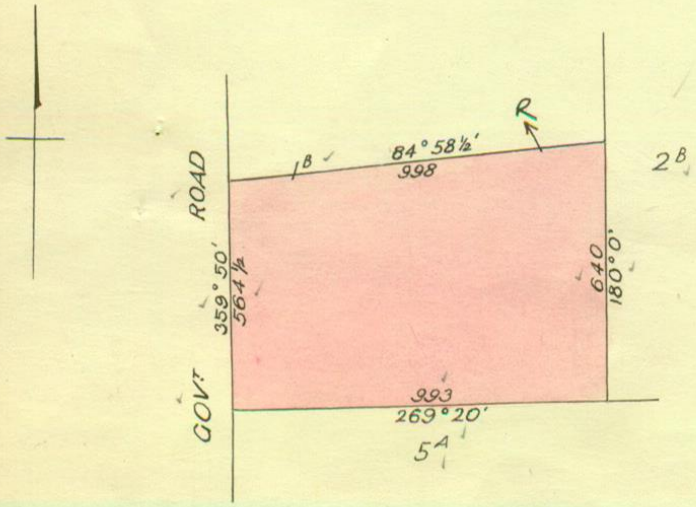
A	R	P	HECTARES
5		337.5	2.4218

L G. Mc Darish

Assistant Registrar of Titles

OFFICE OF TITLES VICTORIA

ENCUMBRANCES REFERRED TO



MEASUREMENTS ARE IN links

Derived from Vol.6853 Fol.462

C748033

VOL.	FOL.	INSTRUMENT	APPLICATION

RICHARD WESLEY DERWENT MOODIE Manager and EDITHA MOODIE Married Woman both of 286 Pakington Street Newtown Geelong are now JOINT PROPRIETORS
Registered 12th April 1967
No.C748034

MORTGAGE to GENERAL CREDITS LIMITED
Registered 7th November 1974
No.F515393
DISCHARGED 7 MAY 1975

ALLAN JOHN MUEGEL of Gymbowen Farmer is now the proprietor
Registered 2nd February 1968
No. C993542

MORTGAGE to THE COMMERCIAL BANK OF AUSTRALIA LIMITED
Registered 7th May 1975
No.F687360
DISCHARGED 7 MARCH 83

MORTGAGE to BANK OF NEW SOUTH WALES
Registered 28th January 1970
No. D620183
DISCHARGED -4. MAY 1973

JOHN BARRY BURKE of 68 Myers Street Geelong Solicitor is now the proprietor
Registered 7th March 1983
No.K288920

GRAEME IAN COATES Electrician and LORNA MAREE COATES Married Woman both of Queenscliff Road Leopold are now JOINT PROPRIETORS
Registered 4th May 1973
No.E798343

JOINT PROPRIETORS
ROBERT JAMES CLIFTON & ANA MARIA CLIFTON
45 MELALUKA RD. LEOPOLD
S654596L 25/8/93

MORTGAGE
ST GEORGE BANK LIMITED
S654597H 25/8/93
DISCHARGED U442SC 30 JAN 1997

MORTGAGE TO AUSTRALIA AND NEW ZEALAND SAVINGS BANK LIMITED
Registered -5 OCT 1973
No. F 32340
DISCHARGED -7 NOV 1974

GRAEME FRANKLIN OSBORNE Retailer and CAROL OSBORNE Married Woman both of 6 Bridge Road Barwon Heads are now JOINT PROPRIETORS
Registered 7th November 1974
No.F515392

ENDORSEMENTS CONTINUE ON ANNEXED SHEET A COMMENCING WITH W211936

T08713-254-1-0

V. 8713 F. 254

This is the Sheet marked A referred to in the Certificate of Title entered in the Register Book Vol. 8713 Fol. 254

OFFICE OF TITLES VICTORIA

Assistant Registrar of Titles

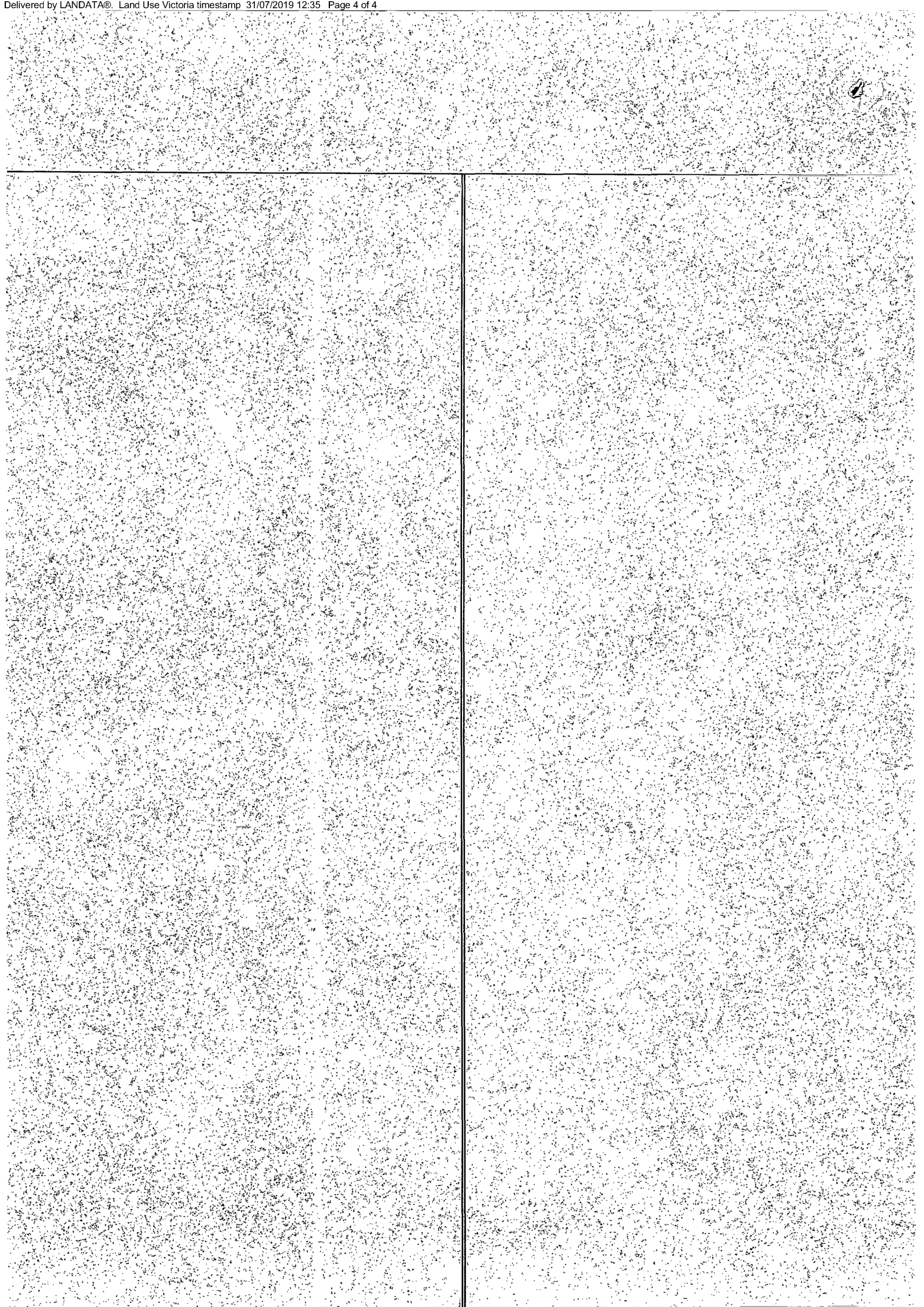
MORTGAGE

CITIBANK LIMITED

W622936M 24/02/00

OFFICE OF TITLES N.V. VICTORIA

T08713-254-2-8



Produced 31/07/2019 12:52 PM

Volume 6853 Folio 462
Folio Creation: Details Unknown
Parent title Volume 02375 Folio 987

STATEMENT END

VOTS Snapshot

NIL

Paper Title Images

6853/462 - Version 0, Date 10/09/1999

VICTORIA.

Entered in the Register Book CANCELLED

Vol. 6853 Fol. 1370462

Certificate of Title,

1.8.46

UNDER THE "TRANSFER OF LAND ACT 1928."

Gordon Herbert Reddie of Moolap Farmer is- - - - - - - - - - - - - - - - - - -

now the proprietor of an Estate in Fee-simple, subject to the Encumbrances notified hereunder in All those pieces of Land, delineated and coloured red on the map in the margin containing Ten acres One rood and Twenty-nine perches or thereabouts being parts of Crown Allotment One[B] Section Five Block One ------ Parish of Moolap County of Grant -

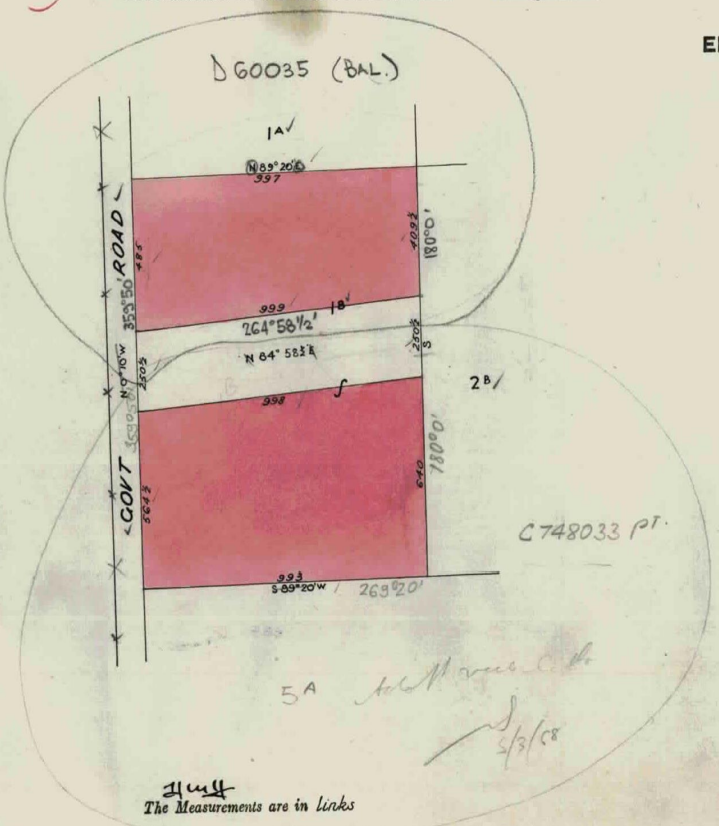
ORIGINAL CERTIFICATE.
Not to be dealt with outside the Titles Office.

Dated the Fourth day of April One thousand nine hundred and forty-six.

Assistant Registrar of Titles.

OFFICE OF TITLES VICTORIA

ENCUMBRANCES REFERRED TO.



The Measurements are in Links

T06853-462-1-6

Vol. 2375 Fol. 474987 Transfer. 1995759 Application

William Dash of Winchelsea Primary Producer is

now the proprietor of the within described estate by transfer registered on 28th July 1948 and numbered 2155770

15.9.48

Assistant Registrar of Titles

WILLIAM DASH died on 5th December 1965 Probate of his Will has been granted to MARY JANE DASH of Leopold Widow and CHARLES WILLIAM BELL of Winchelsea Farmer
Dated 16th February 1967
No. C705854

OFFICE OF TITLES T.E.J. VICTORIA

TRANSFER AS TO PART No. C748033
registered 13th April 1967.
CANCELLED AS TO PART
See Vol. 8713 Fol. 254
Area 5A 3R 37½P

OFFICE OF TITLES P.M. VICTORIA

TRANSFER AS TO BALANCE No. D600035
registered 26th April 1968.
CANCELLED See Vol. 8777 Fol. 281

OFFICE OF TITLES R.L. VICTORIA

CANCELLED

Produced 31/07/2019 01:00 PM

Volume 2375 Folio 987
Folio Creation: Details Unknown
Parent title Volume 00816 Folio 188

STATEMENT END

VOTS Snapshot

NIL

Paper Title Images

2375/987 - Version 0, Date 06/03/2000

CANCELLED

Entered in the Register Book

Vol. 2375 Fol. 474987

VICTORIA.

Certificate of Title,

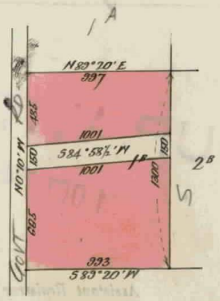
UNDER THE "TRANSFER OF LAND ACT 1890."

Grace Giles of Portarlington Married Woman is now the proprietor of an Estate in Fee-simple, subject to the Encumbrances notified hereunder in All those pieces of Land, delineated and colored red on the Map in the margin, containing eleven acres one rood and twenty nine perches or thereabouts being part of Crown allotment one B. Section five Block one parish of Modlap County of Grant.—

Dated the twenty fifth — day of July — One thousand eight hundred and ninety one. —

Assistant Registrar of Titles.

ENCUMBRANCES REFERRED TO.



ORIGINAL CERTIFICATE.
Not to be dealt with outside the Titles Office.

The Measurements are in link.

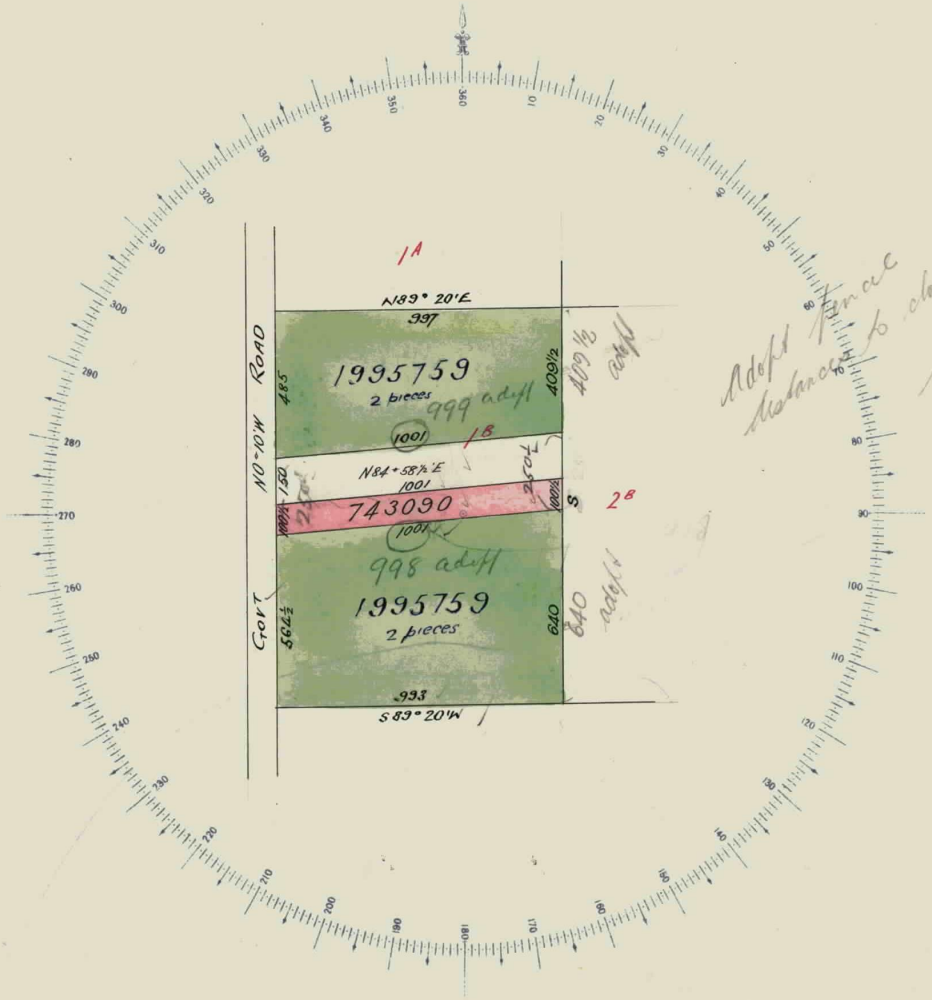
Vol. 816. Fol. 163188 Transfer 308793 Application

Nature of Instrument.	Day and Hour of its Production.	Names of the Parties to It.	Number or Symbol thereon.
Patrick O'Brien of Leopold near Geelong Farmer is now the proprietor of the within described Estate and Land by Transfer from the within named Grace Giles registered on the 22nd day of February 1899 at 12 10 o'clock in the after noon, and Numbered 403662		W R Andrews Assistant Registrar of Titles.	
William Hoare of Curlewis Farmer is now the Proprietor of the within-described Estate and Land by Transfer from the above named Patrick O'Brien registered 11th March 1911 at 11.30 o'clock in the fore noon, and Numbered 644864		Assistant Registrar of Titles.	
Mortgage DISCHARGED ASSISTANT REGISTRAR OF TITLES. 9th March 1914	The 11th March 1911 at 11.30 am	William Hoare to Joseph Thomas Butterworth Assistant Registrar of Titles.	291122
Transfer as to part Cancelled as to the land in Certificate of Title Vol. 3782 Fol. 756223 Area 1 acre	8th April 1914 at 10.26 am	William Hoare - to - The Victorian Railways Commissioners Assistant Registrar of Titles.	743090
TRANSFER AS TO BALANCE to Gordon Herbert Reddie registered on 4th April 1946 numbered 1995759 CANCELLED See Certificate of Title Vol. 6853 Fol. 1370462 Assistant Registrar of Titles		DUP. WITH 10 OCT 1946 Assistant Registrar of Titles.	
CANCELLED		Assistant Registrar of Titles.	

SCALE 4 Chains to one inch

Titles Office Record of Subdivision

Vol. 2375 fol. 987



Produced 31/07/2019 01:03 PM

Volume 816 Folio 188
Folio Creation: Details Unknown

STATEMENT END

VOTS Snapshot

NIL

Paper Title Images

816/188 - Version 0, Date 18/08/2000

20 Section 1869

Entered in the Register Book, Vol. 816 Folio 163188

Victoria by the Grace of God of the United Kingdom of Great Britain and Ireland QUEEN Defender of the Faith to all to whom these presents shall come GREETING

Registrar of Titles.

Whereas in conformity with the laws relating to the sale and occupation of Crown Lands in our Colony of Victoria the person hereinafter named ha[s] in consideration of the sum of Thirteen pounds which sum has been duly paid to us become entitled to a grant in fee-simple of the land hereinafter described Now know ye that in consideration of the sum so paid and in pursuance of *The Land Act 1869* We do hereby grant unto

Patrick O'Brien of Modap

h[is] heirs and assigns ALL THAT PIECE OF LAND in the said Colony containing twelve acres three roods and twenty nine perches or thereabouts being allotment One B of Section five Block One in the parish of Modap County of Grant

delineated with the measurements and abuttals thereof in the map drawn in the margin of these presents and therein colored yellow To HOLD unto the said Patrick O'Brien h[is] heirs and assigns for ever EXCEPTING however unto us our heirs and successors all gold and auriferous earth or stone and all mines containing gold within the boundaries of the said land AND ALSO reserving to us our heirs and successors full liberty and authority for us our heirs and successors and our and their agents and servants at any time or times hereafter to enter upon the said land and to search and mine therein for gold and to extract and remove therefrom any gold and any auriferous earth or stone and for the purposes aforesaid to sink shafts erect machinery carry on any works and do any other things which may be necessary or usual in mining PROVIDED ALWAYS that it shall be lawful for us our heirs and successors at any time on paying full compensation to the said Patrick O'Brien

h[is] heirs executors administrators or assigns for the value other than auriferous of the said piece of land or of so much thereof as may be resumed as hereinafter mentioned and of the improvements upon the said piece of land or the part so resumed such value in case of disagreement to be ascertained by arbitration to resume the said piece of land or any part thereof for mining purposes AND THAT the terms conditions and events upon which such land may be resumed and the manner in which such arbitration may be conducted may be determined by regulations in such manner as the Governor in Council may from time to time direct or if at any time no such regulations shall be in force then by the regulations concerning the resumption of land for mining purposes in force at the date of this Grant unless Parliament shall otherwise determine **In testimony whereof** we have caused this our Grant to be sealed with the seal of the said Colony **Witness** our trusty and well-beloved The Honorable SIR WILLIAM FOSTER STAWELL Knight Chief Justice of the Colony of Victoria and Officer administering the Government of the said Colony of Victoria at Melbourne this Seventeenth day of July in the thirty ninth year of our Reign and in the year of our Lord One thousand eight hundred and seventy-five.

William J. Stawell

NOTE.— *The bearings on this plan are accurate in relation to each other. The measurements are in* link[s].

MEMORIALS OF INSTRUMENTS.

Nature of Instrument.	Date of its Production for Registration.	Names of the Parties to it.	Number or Symbol.
Transfer as to part	The 7th day of April 1879, at 1. 29. o'clock in the after noon	Patrick O'Brien to The Board of Land and Works	77063.
Cancelled as to the land in part of the Vol 1079 Fol 215975 [illegible]	[illegible] Asst Regr of Titles	[illegible] Asst. Regr of Titles.	
Caveat No 22900 lodged 6th January 1891 at 2.57 pm affecting the Balance of the within land			
Caveat lapsed 25th August 1891 at 9.45 am			
Transfer as to Balance	The 25th August 1891 at 9.45 am	Patrick O'Brien to Grace Giles [illegible] Asst Regr of Titles	308773

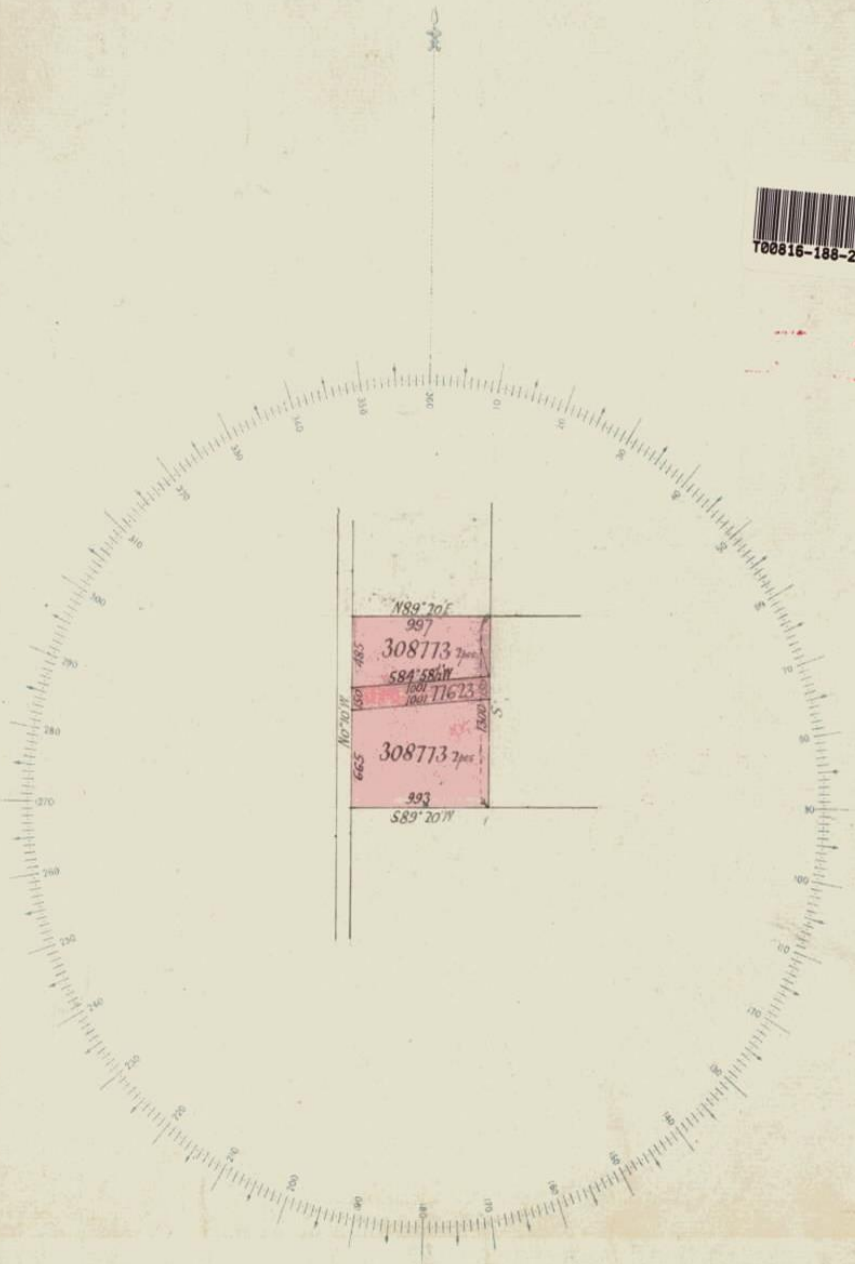
Vol 2375 Fol 474987

Titles Office Record of Subdivision

SCALE

8 Chains to one inch

Register Book Vol. 816 fol. 188



Environmental Site Assessments

Appendix 3: ESV Cathodic Protection Search

31 July, 2019

energysafe VICTORIA

Creating a safer state with electricity and gas

To: Seton Lillas

Environmental Site Assessments

T: 0433 747 187

SEARCH FOR CATHODIC PROTECTION SYSTEMS

With reference to your email of 30/07/2019, a search of the CP database has failed to identify any cathodic protection systems that have been registered at the following locations:

- ***31-49 Melaluka Road, Leopold***

Yours sincerely

Peter Wade

MANAGER ELECTROLYSIS MITIGATION

Disclaimer

Energy Safe Victoria provides this information in good faith, but cannot guarantee the accuracy or validate the information provided. The Cathodic Protection (CP) database is a register of currently operating Cathodic Protection systems in Victoria and was established in 1970. The CP database is administered under the Electricity Safety Act 1998 and the Electricity Safety (Cathodic Protection) Regulations 2009.
Some underground fuel tanks may not be listed in the CP database including: if the tank is not metallic (therefore not requiring CP); the tank is metallic but CP was not installed; the CP system was not registered, or the CP system has been de-commissioned.
If you believe underground tanks may be present and not shown on ESV's database you should conduct your own tests and investigations.

Environmental Site Assessments

Appendix 4: Sample Locations

Environmental
Site Assessments

Phone: 03 5221 8136
office@esagroup.com.au
PO Box 3106,
Waurn Ponds, VIC 3216
www.esagroup.com.au

Legend

Sample Points

Aerial sourced from Nearmap

Designed:	S. Lillas	Revision:	1
Drawn:	S. Lillas	Date:	02/08/2019
File:	Sample Locations.pdf		

N

Title:	Sample Locations
Project:	Environmental Assessment
Location:	31-49 Melaluka Road, Leopold
Client:	Cardno TGM

Environmental Site Assessments

Appendix 5: PID Calibration Form

AES
sensing safety

Calibration Certificate

Sensor	Type	Serial No.	Span Gas	Concentration	Traceability Lot #	CF	Reading	
							Zero	Span
Oxygen								
LEL								
PID	C03-0912-003. 10.6EV PI D SENSOR (MULTIRAE	SC03A30297T8	Isobutylene	100 PPM	S110317-1		0	100
Battery	M01-3053-000. MULTIRA E RECHARGEABLE LI-I	M0140701T7						
Toxic 1								
Toxic 2								
Toxic 3								
Toxic 4								
Toxic 5								
Toxic 6								

Calibrated/Repaired by: DARREN FRANCALANZA Date: 28.03.2019 Next Due: 28.09.2019

Environmental Site Assessments

Appendix 6: Comparison Tables

	BTEX								Cyanides	Halogenated Benzenes	Ha	
	Benzene	Ethylbenzene	Toluene	Total BTEX	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 less BTEX (F1)	Cyanide (WAD)	Hexachlorobenzene	2,4,5-trichlorophenol	2,4,6-trichlorophenol
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.2	0.5	0.5	0.2	0.5	0.5	0.5	10	1	0.05	0.5	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil										10		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion												
0-1m	0.5|0.6|0.7	NL|55	160|390|480				40|95|110	40|45|50				
NEPM 2013 Table 1B(6) ESLs for Urban Res	65		105									
0-2m	50	70|125	85				45|105					

LocCode	Sample_Depth_Range	Field_ID	Sampled_Date-Time	Env_Stds_Conditional_Matrix_Type											
SP01	0-0.15	SP01/0-0.15	02-Aug-19	CLAY	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<1	<0.05	<0.5	<0.5
SP02	0-0.15	SP02/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	<0.05	-	-
SP03	0-0.15	SP03/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	<0.05	-	-
SP04	0-0.15	SP04/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	<0.05	-	-
SP05	0-0.15	QC03	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	QC04	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	SP05/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP06	0-0.15	SP06/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	<0.05	-	-
SP07	0-0.15	SP07/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	<0.05	-	-
SP08	0-0.15	SP08/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	<0.05	-	-
SP09	0-0.15	SP09/0-0.15	02-Aug-19	CLAY	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<1	<0.05	<0.5	<0.5
SP10	0-0.15	SP10/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
TP01	0-0.15	TP01/0-0.15	02-Aug-19	CLAY	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	-	<0.05	-	-
TP02	0-0.15	TP02/0-0.15	02-Aug-19	CLAY	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	-	<0.05	-	-

	logenated Phenols				Herbicides	Inorganics		Lead	Metals										
	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	Atrazine	Moisture	Moisture Content (dried @ 103°C)	Lead	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Chromium (Trivalent)	Cobalt	Copper
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	2	0.05	1		5	2	10	1	10	0.4	0.5	2		2	5
NEPM 2013 Table 1A(1) HILs Res A Soil				100	320			300	100		60	4500	20	100			100	6000
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion																		
0-1m																		
NEPM 2013 Table 1B(6) ESLs for Urban Res																		
0-2m																		

LocCode	Sample_Depth_Range	Field_ID	Sampled_Date-Time	Env_Stds_Conditional_Matrix_Type																	
SP01	0-0.15	SP01/0-0.15	02-Aug-19	CLAY	<0.5	<0.5	<0.5	<2	<0.05	23.5	-	18	11	80	<1	<50	<1	<0.5	20	-	7	<5
SP02	0-0.15	SP02/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	16.4	-	17	50	70	<1	<50	<1	-	22	-	3	<5
SP03	0-0.15	SP03/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	19.2	-	7	8	40	<1	<50	<1	-	20	-	4	<5
SP04	0-0.15	SP04/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	19.3	-	8	10	40	<1	<50	<1	-	19	-	4	<5
SP05	0-0.15	QC03	02-Aug-19	CLAY	-	-	-	-	-	16.8	-	5	<5	30	<1	<50	<1	-	11	-	2	<5
SP05	0-0.15	QC04	02-Aug-19	CLAY	-	-	-	-	-	-	17	11	16	44	<2	<10	<0.4	<1	22	22	<5	<5
SP05	0-0.15	SP05/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	16.3	-	7	8	30	<1	<50	<1	-	15	-	2	<5
SP06	0-0.15	SP06/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	20.9	-	8	6	90	<1	<50	<1	-	23	-	5	<5
SP07	0-0.15	SP07/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	19.5	-	10	9	60	<1	<50	<1	-	23	-	5	<5
SP08	0-0.15	SP08/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	19.3	-	<5	<5	20	<1	<50	<1	-	9	-	<2	<5
SP09	0-0.15	SP09/0-0.15	02-Aug-19	CLAY	<0.5	<0.5	<0.5	<2	<0.05	18.7	-	8	5	60	<1	<50	<1	<0.5	18	-	4	<5
SP10	0-0.15	SP10/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	19.7	-	8	11	50	<1	<50	<1	-	19	-	4	<5
TP01	0-0.15	TP01/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	20.1	-	7	<5	-	-	-	<1	-	12	-	-	<5
TP02	0-0.15	TP02/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	27.4	-	9	8	-	-	-	<1	-	41	-	-	5

							Organochlorine Pesti														
							Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							5	0.1	2	5	5	5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05
NEPM 2013 Table 1A(1) HILs Res A Soil							3800	40	400	200		7400				6		50						240	
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion																									
0-1m																									
NEPM 2013 Table 1B(6) ESLs for Urban Res																									
0-2m																									
LocCode	**Sample_Depth_Range**	**Field_ID**	**Sampled_Date-Time**	**Env_Stds_Conditional_Matrix_Type**																					
SP01	0-0.15	SP01/0-0.15	02-Aug-19	CLAY			94	<0.1	17	<5	51	22	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05
SP02	0-0.15	SP02/0-0.15	02-Aug-19	CLAY			48	<0.1	9	<5	152	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05
SP03	0-0.15	SP03/0-0.15	02-Aug-19	CLAY			33	<0.1	8	<5	55	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05
SP04	0-0.15	SP04/0-0.15	02-Aug-19	CLAY			44	<0.1	8	<5	67	<5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05
SP05	0-0.15	QC03	02-Aug-19	CLAY			26	<0.1	5	<5	28	5	-	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	QC04	02-Aug-19	CLAY			52	<0.1	9.1	-	84	9.4	-	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	SP05/0-0.15	02-Aug-19	CLAY			28	<0.1	6	<5	62	<5	-	-	-	-	-	-	-	-	-	-	-	-	-
SP06	0-0.15	SP06/0-0.15	02-Aug-19	CLAY			66	<0.1	12	<5	45	10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05
SP07	0-0.15	SP07/0-0.15	02-Aug-19	CLAY			58	<0.1	11	<5	61	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05
SP08	0-0.15	SP08/0-0.15	02-Aug-19	CLAY			25	<0.1	4	<5	23	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05
SP09	0-0.15	SP09/0-0.15	02-Aug-19	CLAY			31	<0.1	8	<5	47	<5	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05
SP10	0-0.15	SP10/0-0.15	02-Aug-19	CLAY			32	<0.1	8	<5	54	5	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01	0-0.15	TP01/0-0.15	02-Aug-19	CLAY			-	<0.1	4	-	-	<5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05
TP02	0-0.15	TP02/0-0.15	02-Aug-19	CLAY			-	<0.1	11	-	-	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05

	cides											Organophosphorou							
	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
NEPM 2013 Table 1A(1) HILs Res A Soil	270				10				6		300					160			
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion																			
0-1m																			
NEPM 2013 Table 1B(6) ESLs for Urban Res																			
0-2m																			

LocCode	Sample_Depth_Range	Field_ID	Sampled_Date-Time	Env_Stds_Conditional_Matrix_Type																
SP01	0-0.15	SP01/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SP02	0-0.15	SP02/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SP03	0-0.15	SP03/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SP04	0-0.15	SP04/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SP05	0-0.15	QC03	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	QC04	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	SP05/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP06	0-0.15	SP06/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SP07	0-0.15	SP07/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SP08	0-0.15	SP08/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SP09	0-0.15	SP09/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SP10	0-0.15	SP10/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01	0-0.15	TP01/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TP02	0-0.15	TP02/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

	s Pesticides							PAH												PA
	Dimethoate	Ethion	Fenthion	Malathion	Methyl parathion	Monocrotophos	Prothiofos	Benzo[b+j]fluoranthene	2,4-dimethylphenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4-chloro-3-methylphenol	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.2	0.2	0.05	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil																			
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion																			
0-1m																			
NEPM 2013 Table 1B(6) ESLs for Urban Res																			
0-2m																		0.7	

LocCode	Sample_Depth_Range	Field_ID	Sampled_Date-Time	Env_Stds_Conditional_Matrix_Type																		
SP01	0-0.15	SP01/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SP02	0-0.15	SP02/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-
SP03	0-0.15	SP03/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-
SP04	0-0.15	SP04/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	QC03	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	QC04	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	SP05/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP06	0-0.15	SP06/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-
SP07	0-0.15	SP07/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-
SP08	0-0.15	SP08/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-
SP09	0-0.15	SP09/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SP10	0-0.15	SP10/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01	0-0.15	TP01/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP02	0-0.15	TP02/0-0.15	02-Aug-19	CLAY	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.5	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

	H/Phenols												Pesticides					
	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Carcinogenic PAHs (as B(a)P TPE)	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenol	Pyrene	Bifenthrin	Demeton-S-methyl	Fenamiphos	Mirex	Parathion	Pirimphos-ethyl
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.2	0.2	0.05
NEPM 2013 Table 1A(1) HILs Res A Soil				3					300		3000		600			10		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion																		
0-1m								3|4|5										
NEPM 2013 Table 1B(6) ESLs for Urban Res																		
0-2m																		

LocCode	Sample_Depth_Range	Field_ID	Sampled_Date-Time	Env_Stds_Conditional_Matrix_Type																
SP01	0-0.15	SP01/0-0.15	02-Aug-19	CLAY	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
SP02	0-0.15	SP02/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	<0.05
SP03	0-0.15	SP03/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	<0.05
SP04	0-0.15	SP04/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	<0.05
SP05	0-0.15	QC03	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	QC04	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	SP05/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP06	0-0.15	SP06/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	<0.05
SP07	0-0.15	SP07/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	<0.05
SP08	0-0.15	SP08/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	<0.2	<0.05
SP09	0-0.15	SP09/0-0.15	02-Aug-19	CLAY	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
SP10	0-0.15	SP10/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01	0-0.15	TP01/0-0.15	02-Aug-19	CLAY	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.05	<0.05	-	<0.2	<0.05
TP02	0-0.15	TP02/0-0.15	02-Aug-19	CLAY	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.05	<0.05	-	<0.2	<0.05

	Polychlorinated Biphenyls	TPH										
	PCBs (Sum of total)	C10-C16	C16-C34	C34-C40	F2-NAPHTHALENE	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	C6-C10
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	50	100	100	50	10	50	100	100	50	50	10
NEPM 2013 Table 1A(1) HILs Res A Soil	1											
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion												
0-1m					110|230|280							
NEPM 2013 Table 1B(6) ESLs for Urban Res		120	1300	5600								180
0-2m		120	300	2800								180

LocCode	Sample_Depth_Range	Field_ID	Sampled_Date-Time	Env_Stds_Conditional_Matrix_Type											
SP01	0-0.15	SP01/0-0.15	02-Aug-19	CLAY	<0.1	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10
SP02	0-0.15	SP02/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP03	0-0.15	SP03/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP04	0-0.15	SP04/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	QC03	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	QC04	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP05	0-0.15	SP05/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP06	0-0.15	SP06/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP07	0-0.15	SP07/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP08	0-0.15	SP08/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
SP09	0-0.15	SP09/0-0.15	02-Aug-19	CLAY	<0.1	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10
SP10	0-0.15	SP10/0-0.15	02-Aug-19	CLAY	-	-	-	-	-	-	-	-	-	-	-	-
TP01	0-0.15	TP01/0-0.15	02-Aug-19	CLAY	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10
TP02	0-0.15	TP02/0-0.15	02-Aug-19	CLAY	-	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10

Field Duplicates (SOIL)
Filter: SDG in('ALSE-M

SDG		ALSE-Melbourne 02-Aug-19	ALSE-Melbourne 02-Aug-19			ALSE-Melbourne 02-Aug-19	ALSE-Melbourne 02-Aug-19		
Field ID		SP05/0-0.15	QC03	**RPD**		SP05/0-0.15	QC04	**RPD**	
Sampled Date/Time		02-08-19 9:54	02-08-19 9:54			02-08-19 9:54	02-08-19 9:54		
Chem_Gro	**ChemNam**	**Units**	**EQL**						
Inorganics	Moisture	%	1	16.3	16.8	3	16.3		
Lead	Lead	mg/kg	5	7.0	5.0	33	7.0	11.0	44
Metals	Arsenic	mg/kg	5 (Primary): 2 (Interlab)	8.0	<5.0	46	8.0	16.0	67
	Barium	mg/kg	10	30.0	30.0	0	30.0	44.0	38
	Beryllium	mg/kg	1 (Primary): 2 (Interlab)	<1.0	<1.0	0	<1.0	<2.0	0
	Boron	mg/kg	50 (Primary): 10 (Interla	<50.0	<50.0	0	<50.0	<10.0	0
	Cadmium	mg/kg	1 (Primary): 0.4 (Interlab	<1.0	<1.0	0	<1.0	<0.4	0
	Chromium	mg/kg	2 (Primary): 5 (Interlab)	15.0	11.0	31	15.0	22.0	38
	Cobalt	mg/kg	2 (Primary): 5 (Interlab)	2.0	2.0	0	2.0	<5.0	0
	Copper	mg/kg	5	<5.0	<5.0	0	<5.0	<5.0	0
	Manganes	mg/kg	5	28.0	26.0	7	**28.0**	**52.0**	**60**
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	2 (Primary): 5 (Interlab)	6.0	5.0	18	6.0	9.1	41
	Selenium	mg/kg	5	<5.0	<5.0	0	<5.0		
	Vanadium	mg/kg	5 (Primary): 10 (Interlab	**62.0**	**28.0**	**76**	62.0	84.0	30
	Zinc	mg/kg	5	<5.0	5.0	0	<5.0	9.4	61

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 80 (1-10 x EQL); 50 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Field Blanks (WATER)
Filter: SDG in('ALSE-Melbourne 02-Aug-19')

SDG	ALSE-Melbourne 02-Aug-19	ALSE-Melbourne 02-Aug-19	ALSE-Melbourne 02-Aug-19
Field ID	QC02	QC05	QC01
Sampled_Date/Time	02-08-19 9:40	02-08-19 10:24	02-08-19 9:25
Sample Type	Field_B	Rinsate	Trip_B

Chem_Group	ChemName	Units	EQL			
BTEX	Benzene	µg/L	1			<1
	Ethylbenzene	µg/L	2			<2
	Toluene	µg/L	2			<2
	Total BTEX	mg/l	0.001			<0.001
	Xylene (m & p)	µg/L	2			<2
	Xylene (o)	µg/L	2			<2
	Xylene Total	µg/L	2			<2
	C6-C10 less BTEX (F1)	mg/l	0.02			<0.02
Halogenated Benzenes	Hexachlorobenzene	µg/L	0.5	<0.5	<0.5	
Lead	Lead	mg/l	0.001		<0.001	
	Lead (Filtered)	mg/l	0.001	<0.001		
Metals	Arsenic	mg/l	0.001		<0.001	
	Arsenic (Filtered)	mg/l	0.001	<0.001		
	Barium	mg/l	0.001		<0.001	
	Barium (Filtered)	mg/l	0.001	<0.001		
	Beryllium	mg/l	0.001		<0.001	
	Beryllium (Filtered)	mg/l	0.001	<0.001		
	Boron	mg/l	0.05		<0.05	
	Boron (Filtered)	mg/l	0.05	<0.05		
	Cadmium	mg/l	0.0001		<0.0001	
	Cadmium (Filtered)	mg/l	0.0001	<0.0001		
	Chromium (III+VI)	mg/l	0.001		<0.001	
	Chromium (III+VI) (Filtered)	mg/l	0.001	<0.001		
	Cobalt	mg/l	0.001		<0.001	
	Cobalt (Filtered)	mg/l	0.001	<0.001		
	Copper	mg/l	0.001		<0.001	
	Copper (Filtered)	mg/l	0.001	<0.001		
	Manganese	mg/l	0.001		<0.001	
	Manganese (Filtered)	mg/l	0.001	<0.001		
	Mercury	mg/l	0.0001		<0.0001	
	Mercury (Filtered)	mg/l	0.0001	<0.0001		
	Nickel	mg/l	0.001		<0.001	
	Nickel (Filtered)	mg/l	0.001	<0.001		
	Selenium	mg/l	0.01		<0.01	
	Selenium (Filtered)	mg/l	0.01	<0.01		
	Vanadium	mg/l	0.01		<0.01	
	Vanadium (Filtered)	mg/l	0.01	<0.01		
	Zinc	mg/l	0.005		<0.005	
	Zinc (Filtered)	mg/l	0.005	<0.005		
Organochlorine Pesticides	4,4-DDE	µg/L	0.5	<0.5	<0.5	
	a-BHC	µg/L	0.5	<0.5	<0.5	
	Aldrin	µg/L	0.5	<0.5	<0.5	
	Aldrin + Dieldrin	µg/L	0.5	<0.5	<0.5	
	b-BHC	µg/L	0.5	<0.5	<0.5	
	chlordane	µg/L	0.5	<0.5	<0.5	
	Chlordane (cis)	µg/L	0.5	<0.5	<0.5	
	Chlordane (trans)	µg/L	0.5	<0.5	<0.5	
	d-BHC	µg/L	0.5	<0.5	<0.5	
	DDD	µg/L	0.5	<0.5	<0.5	
	DDT	µg/L	2	<2	<2	
	DDT+DDE+DDD	µg/L	0.5	<0.5	<0.5	
	Dieldrin	µg/L	0.5	<0.5	<0.5	
	Endosulfan I	µg/L	0.5	<0.5	<0.5	
	Endosulfan II	µg/L	0.5	<0.5	<0.5	
	Endosulfan sulphate	µg/L	0.5	<0.5	<0.5	
	Endrin	µg/L	0.5	<0.5	<0.5	
	Endrin aldehyde	µg/L	0.5	<0.5	<0.5	
	Endrin ketone	µg/L	0.5	<0.5	<0.5	
	g-BHC (Lindane)	µg/L	0.5	<0.5	<0.5	
	Heptachlor	µg/L	0.5	<0.5	<0.5	
	Heptachlor epoxide	µg/L	0.5	<0.5	<0.5	
	Methoxychlor	µg/L	2	<2	<2	
Organophosphorous Pesticides	Azinophos methyl	µg/L	0.5	<0.5	<0.5	
	Bromophos-ethyl	µg/L	0.5	<0.5	<0.5	
	Carbophenothion	µg/L	0.5	<0.5	<0.5	
	Chlorfenvinphos	µg/L	0.5	<0.5	<0.5	
	Chlorpyrifos	µg/L	0.5	<0.5	<0.5	
	Chlorpyrifos-methyl	mg/l	0.0005	<0.0005	<0.0005	
	Diazinon	µg/L	0.5	<0.5	<0.5	
	Dichlorvos	µg/L	0.5	<0.5	<0.5	
	Dimethoate	µg/L	0.5	<0.5	<0.5	
	Ethion	µg/L	0.5	<0.5	<0.5	
	Fenthion	µg/L	0.5	<0.5	<0.5	
	Malathion	µg/L	0.5	<0.5	<0.5	
	Methyl parathion	µg/L	2	<2	<2	
	Monocrotophos	µg/L	2	<2	<2	
	Prothiofos	µg/L	0.5	<0.5	<0.5	
PAH/Phenols	Naphthalene	µg/L	5			<5
Pesticides	Demeton-S-methyl	µg/L	0.5	<0.5	<0.5	
	Fenamiphos	µg/L	0.5	<0.5	<0.5	
	Parathion	µg/L	2	<2	<2	
	Pirimphos-ethyl	µg/L	0.5	<0.5	<0.5	
TPH	C6 - C9	µg/L	20			<20
	C6-C10	mg/l	0.02			<0.02

Appendix 7: Laboratory Chain of Custody Forms and Certificates of Analysis

ALS

CHAIN OF CUSTODY

ALS Laboratory: please tick

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

CLIENT:	ENVIRONMENTAL SITE ASSESSMENTS
OFFICE:	PO BOX 3106, WAURN PONDS VIC 3216
PROJECT:	31-49 Melaluka Rd
ORDER NUMBER:	
PROJECT MANAGER:	Seton Lillas — CONTACT PH: 0433747187
SAMPLER:	Seton Lillas — SAMPLER MOBILE: 0433747187
COC emailed to ALS?	NO — EDD FORMAT (or default):
Email Reports to (will default to PM if no other addresses are listed):	office@esagroup.com.au
Email Invoice to (will default to PM if no other addresses are listed):	accounts@esagroup.com.au

TURNAROUND REQUIREMENTS: [X] Standard TAT; [ ] Non Standard or urgent TAT (Due date):

ALS QUOTE NO.:

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

FOR LABORATORY USE ONLY (Circle)
- Custody Seal Intact? Yes No N/A
- Free ice / frozen ice bricks present upon receipt? Yes No N/A
- Random Sample Temperature on Receipt: °C
- Other comment:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
S. Lillas			[illegible signature]
DATE/TIME: 11.03 2/8/19	DATE/TIME:	DATE/TIME:	DATE/TIME: 2/8, 15:05

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: COMPOSITE AS PER BELOW.

ALS USE ONLY: LAB ID	SAMPLE ID	DATE / TIME	MATRIX (Solid(S) Water(W))	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	NEPM Suite	OC/OP Pesticides + 15 Metals	15 Metals	TRH/BTEXN/PAH/8 Metals	OC/OP Pesticides	Additional Information
1	SP01/0-0.15	2/8/19 9.45	S			X					
2	SP02/0-0.15	" 9.47	"				X				
3	SP03/0-0.15	" 9.49	"				X				
4	SP04/0-0.15	" 9.52	"				X				
5	SP05/0-0.15	" 9.54	"					X			
6	QC03	" 9.54	"					X			
7	SP06/0-0.15	" 9.58	"				X				
8	SP07/0-0.15	" 10.01	"				X				
9	SP08/0-0.15	" 10.04	"				X				
10	SP09/0-0.15	" 10.07	"			X					
11	SP10/0-0.15	" 10.10	"					X			
12	TP01/0-0.15	" 10.15	"						X	X	
					TOTAL	2	6	3	1	1	

Environmental Division Melbourne
Work Order Reference
EM1912482
Telephone: + 61-3-8549 9600

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.

Melbourne: 3 Westall Rd Springvale VIC 3171
PH 03 8549 9600 E: samplesmelbourne@alsenviro.com

CHAIN OF CUSTODY

ALS Laboratory: please tick

CLIENT: ENVIRONMENTAL SITE ASSESSMENTS	**TURNAROUND REQUIREMENTS :**	X	Standard TAT
OFFICE: PO BOX 3106, WAURN PONDS VIC 3216			Non Standard or urgent TAT (Due date):
PROJECT: 31-49 Mataluka Rd	**ALS QUOTE NO.:**		**COC SEQUENCE NUMBER** COC: 1 2 3 4 5 6 7
ORDER NUMBER:			OF: 1 2 3 4 5 6 7
PROJECT MANAGER: Seton Lillas	**CONTACT PH:** 0433747187		
SAMPLER: Seton Lillas	**SAMPLER MOBILE:** 0433747187		
COC emailed to ALS? NO	**EDD FORMAT (or default):**		

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
S. Lillas			
DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME: N/A

Email Reports to (will default to PM if no other addresses are listed): office@esagroup.com.au

Email Invoice to (will default to PM if no other addresses are listed): accounts@esagroup.com.au

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: COMPOSITE AS PER BELOW.

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES									Additional Information				
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES		TRH/BTEXN/PAH/ & Metals	OC/OP Pesticides	TRH C6 - C10 /BTEXN	15 Metals									
13	TP02/0-0.15	2/8/19 10:18	S				X	X											
14	QC01	" 9.25	W						X										
15	QC02	" 9.40	"					X		X									
16	QC05	" 10.24	"					X		X									
						TOTAL	1	3	1	2									

WaterContainerCodes: 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.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM1912482**	Page	: 1 of 20
Client	: **ENVIRONMENTAL SITE ASSESSMENTS PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MR SETON LILLAS	Contact	: Larissa Burns
Address	: P.O. BOX 3106 WAURN PONDS VIC 3216	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9644
Project	: 31-49 Melaluka Rd	Date Samples Received	: 02-Aug-2019 15:45
Order number	:	Date Analysis Commenced	: 06-Aug-2019
C-O-C number	: ----	Issue Date	: 12-Aug-2019 12:59
Sampler	: SL		
Site	: 31-49 Mclaluka Rd		
Quote number	: MEBQ/159/15 V2		
No. of samples received	: 16		
No. of samples analysed	: 16		

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

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- 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.
- EG035T: EM1912455 #35, Poor matrix spike recovery for Mercury due to matrix effects.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SP01/0-0.15	SP02/0-0.15	SP03/0-0.15	SP04/0-0.15	SP05/0-0.15
			Client sampling date / time	02-Aug-2019 09:45	02-Aug-2019 09:47	02-Aug-2019 09:49	02-Aug-2019 09:52	02-Aug-2019 09:54
Compound	CAS Number	LOR	Unit	EM1912482-001	EM1912482-002	EM1912482-003	EM1912482-004	EM1912482-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	23.5	16.4	19.2	19.3	16.3
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	50	8	10	8
Barium	7440-39-3	10	mg/kg	80	70	40	40	30
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	20	22	20	19	15
Cobalt	7440-48-4	2	mg/kg	7	3	4	4	2
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg	18	17	7	8	7
Manganese	7439-96-5	5	mg/kg	94	48	33	44	28
Nickel	7440-02-0	2	mg/kg	17	9	8	8	6
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	51	152	55	67	62
Zinc	7440-66-6	5	mg/kg	22	6	6	<5	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	----	----	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	<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	<0.05	<0.05	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	----	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SP01/0-0.15	SP02/0-0.15	SP03/0-0.15	SP04/0-0.15	SP05/0-0.15
			Client sampling date / time	02-Aug-2019 09:45	02-Aug-2019 09:47	02-Aug-2019 09:49	02-Aug-2019 09:52	02-Aug-2019 09:54
Compound	CAS Number	LOR	Unit	EM1912482-001	EM1912482-002	EM1912482-003	EM1912482-004	EM1912482-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Mirex	2385-85-5	0.20	mg/kg	<0.20	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SP01/0-0.15	SP02/0-0.15	SP03/0-0.15	SP04/0-0.15	SP05/0-0.15
			Client sampling date / time	02-Aug-2019 09:45	02-Aug-2019 09:47	02-Aug-2019 09:49	02-Aug-2019 09:52	02-Aug-2019 09:54
Compound	CAS Number	LOR	Unit	EM1912482-001	EM1912482-002	EM1912482-003	EM1912482-004	EM1912482-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	**0.16**	<0.05	<0.05	----
EP068C: Triazines								
Atrazine	1912-24-9	0.05	mg/kg	<0.05	----	----	----	----
EP068D: Pyrethroids								
Bifenthrin	82657-04-3	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SP01/0-0.15	SP02/0-0.15	SP03/0-0.15	SP04/0-0.15	SP05/0-0.15
			Client sampling date / time	02-Aug-2019 09:45	02-Aug-2019 09:47	02-Aug-2019 09:49	02-Aug-2019 09:52	02-Aug-2019 09:54
Compound	CAS Number	LOR	Unit	EM1912482-001	EM1912482-002	EM1912482-003	EM1912482-004	EM1912482-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >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	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**98.6**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SP01/0-0.15	SP02/0-0.15	SP03/0-0.15	SP04/0-0.15	SP05/0-0.15
				Client sampling date / time	02-Aug-2019 09:45	02-Aug-2019 09:47	02-Aug-2019 09:49	02-Aug-2019 09:52	02-Aug-2019 09:54
Compound	CAS Number	LOR	Unit		EM1912482-001	EM1912482-002	EM1912482-003	EM1912482-004	EM1912482-005
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		81.5	82.0	87.8	92.2	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		87.5	82.8	89.3	96.4	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		88.6	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		86.6	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		79.1	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		94.3	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		115	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		117	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		78.6	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		78.4	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		85.6	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QC03	SP06/0-0.15	SP07/0-0.15	SP08/0-0.15	SP09/0-0.15
			Client sampling date / time	02-Aug-2019 09:54	02-Aug-2019 09:58	02-Aug-2019 10:01	02-Aug-2019 10:04	02-Aug-2019 10:07
Compound	CAS Number	LOR	Unit	EM1912482-006	EM1912482-007	EM1912482-008	EM1912482-009	EM1912482-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	16.8	20.9	19.5	19.3	18.7
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	6	9	<5	5
Barium	7440-39-3	10	mg/kg	30	90	60	20	60
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	11	23	23	9	18
Cobalt	7440-48-4	2	mg/kg	2	5	5	<2	4
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg	5	8	10	<5	8
Manganese	7439-96-5	5	mg/kg	26	66	58	25	31
Nickel	7440-02-0	2	mg/kg	5	12	11	4	8
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	28	45	61	23	47
Zinc	7440-66-6	5	mg/kg	5	10	6	6	<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
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	----	----	<0.5
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	----	----	----	----	<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	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	----	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC03	SP06/0-0.15	SP07/0-0.15	SP08/0-0.15	SP09/0-0.15
				Client sampling date / time	02-Aug-2019 09:54	02-Aug-2019 09:58	02-Aug-2019 10:01	02-Aug-2019 10:04	02-Aug-2019 10:07
Compound	CAS Number	LOR	Unit		EM1912482-006	EM1912482-007	EM1912482-008	EM1912482-009	EM1912482-010
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
trans-Chlordane	5103-74-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Mirex	2385-85-5	0.20	mg/kg		----	----	----	----	<0.20
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QC03	SP06/0-0.15	SP07/0-0.15	SP08/0-0.15	SP09/0-0.15
			Client sampling date / time	02-Aug-2019 09:54	02-Aug-2019 09:58	02-Aug-2019 10:01	02-Aug-2019 10:04	02-Aug-2019 10:07
Compound	CAS Number	LOR	Unit	EM1912482-006	EM1912482-007	EM1912482-008	EM1912482-009	EM1912482-010
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Ethion	563-12-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
EP068C: Triazines								
Atrazine	1912-24-9	0.05	mg/kg	----	----	----	----	<0.05
EP068D: Pyrethroids								
Bifenthrin	82657-04-3	0.05	mg/kg	----	----	----	----	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	----	----	----	----	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	----	----	----	----	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	----	----	----	----	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	----	----	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	----	----	----	----	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	----	----	----	----	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	----	----	----	----	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	----	----	----	----	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	----	----	----	----	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	----	----	----	----	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	----	----	----	----	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	----	----	----	----	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	----	<0.5
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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QC03	SP06/0-0.15	SP07/0-0.15	SP08/0-0.15	SP09/0-0.15
			Client sampling date / time	02-Aug-2019 09:54	02-Aug-2019 09:58	02-Aug-2019 10:01	02-Aug-2019 10:04	02-Aug-2019 10:07
Compound	CAS Number	LOR	Unit	EM1912482-006	EM1912482-007	EM1912482-008	EM1912482-009	EM1912482-010
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	----	----	----	<10
C10 - C14 Fraction	----	50	mg/kg	----	----	----	----	<50
C15 - C28 Fraction	----	100	mg/kg	----	----	----	----	<100
C29 - C36 Fraction	----	100	mg/kg	----	----	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	----	----	<10
>C10 - C16 Fraction	----	50	mg/kg	----	----	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg	----	----	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	----	<100
^ >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
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	----	**97.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC03	SP06/0-0.15	SP07/0-0.15	SP08/0-0.15	SP09/0-0.15
				Client sampling date / time	02-Aug-2019 09:54	02-Aug-2019 09:58	02-Aug-2019 10:01	02-Aug-2019 10:04	02-Aug-2019 10:07
Compound	CAS Number	LOR	Unit		EM1912482-006	EM1912482-007	EM1912482-008	EM1912482-009	EM1912482-010
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	89.1	91.3	88.9	87.7
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	89.6	88.2	89.7	95.2
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	----	----	----	92.7
2-Chlorophenol-D4	93951-73-6	0.5	%		----	----	----	----	89.8
2.4.6-Tribromophenol	118-79-6	0.5	%		----	----	----	----	89.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	----	----	----	99.9
Anthracene-d10	1719-06-8	0.5	%		----	----	----	----	115
4-Terphenyl-d14	1718-51-0	0.5	%		----	----	----	----	113
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	----	----	71.9
Toluene-D8	2037-26-5	0.2	%		----	----	----	----	73.4
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	----	----	82.8

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SP10/0-0.15	TP01/0-0.15	TP02/0-0.15	----	----
			Client sampling date / time	02-Aug-2019 10:10	02-Aug-2019 10:15	02-Aug-2019 10:18	----	----
Compound	CAS Number	LOR	Unit	EM1912482-011	EM1912482-012	EM1912482-013	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**19.7**	**20.1**	**27.4**	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**11**	<5	**8**	----	----
Barium	7440-39-3	10	mg/kg	**50**	----	----	----	----
Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	**19**	**12**	**41**	----	----
Cobalt	7440-48-4	2	mg/kg	**4**	----	----	----	----
Copper	7440-50-8	5	mg/kg	<5	<5	**5**	----	----
Lead	7439-92-1	5	mg/kg	**8**	**7**	**9**	----	----
Manganese	7439-96-5	5	mg/kg	**32**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**8**	**4**	**11**	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
Vanadium	7440-62-2	5	mg/kg	**54**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**5**	<5	**6**	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	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	----	----
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	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SP10/0-0.15	TP01/0-0.15	TP02/0-0.15	----	----
			Client sampling date / time	02-Aug-2019 10:10	02-Aug-2019 10:15	02-Aug-2019 10:18	----	----
Compound	CAS Number	LOR	Unit	EM1912482-011	EM1912482-012	EM1912482-013	--------	--------
				Result	Result	Result	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
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	----	----
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	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SP10/0-0.15	TP01/0-0.15	TP02/0-0.15	----	----
			Client sampling date / time	02-Aug-2019 10:10	02-Aug-2019 10:15	02-Aug-2019 10:18	----	----
Compound	CAS Number	LOR	Unit	EM1912482-011	EM1912482-012	EM1912482-013	--------	--------
				Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	----	----
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								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SP10/0-0.15	TP01/0-0.15	TP02/0-0.15	----	----
			Client sampling date / time	02-Aug-2019 10:10	02-Aug-2019 10:15	02-Aug-2019 10:18	----	----
Compound	CAS Number	LOR	Unit	EM1912482-011	EM1912482-012	EM1912482-013	--------	--------
				Result	Result	Result	----	----
EP080: BTEXN - Continued								
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	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	**89.8**	**90.3**	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	**101**	**89.2**	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	**86.2**	**87.3**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	----	**83.6**	**85.1**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	----	**78.2**	**77.3**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	**91.7**	**95.5**	----	----
Anthracene-d10	1719-06-8	0.5	%	----	**120**	**116**	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	----	**104**	**117**	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	----	**73.5**	**70.4**	----	----
Toluene-D8	2037-26-5	0.2	%	----	**73.7**	**71.9**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	----	**81.8**	**80.0**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	QC02	QC05	----	----
				Client sampling date / time	02-Aug-2019 09:25	02-Aug-2019 09:40	02-Aug-2019 10:24	----	----
Compound	CAS Number	LOR	Unit		EM1912482-014	EM1912482-015	EM1912482-016	--------	--------
					Result	Result	Result	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		----	<0.001	----	----	----
Boron	7440-42-8	0.05	mg/L		----	<0.05	----	----	----
Barium	7440-39-3	0.001	mg/L		----	<0.001	----	----	----
Beryllium	7440-41-7	0.001	mg/L		----	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		----	<0.0001	----	----	----
Cobalt	7440-48-4	0.001	mg/L		----	<0.001	----	----	----
Chromium	7440-47-3	0.001	mg/L		----	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		----	<0.001	----	----	----
Manganese	7439-96-5	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	----	----	----
Selenium	7782-49-2	0.01	mg/L		----	<0.01	----	----	----
Vanadium	7440-62-2	0.01	mg/L		----	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L		----	<0.005	----	----	----
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		----	----	<0.001	----	----
Boron	7440-42-8	0.05	mg/L		----	----	<0.05	----	----
Barium	7440-39-3	0.001	mg/L		----	----	<0.001	----	----
Beryllium	7440-41-7	0.001	mg/L		----	----	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		----	----	<0.0001	----	----
Cobalt	7440-48-4	0.001	mg/L		----	----	<0.001	----	----
Chromium	7440-47-3	0.001	mg/L		----	----	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		----	----	<0.001	----	----
Manganese	7439-96-5	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	----	----
Selenium	7782-49-2	0.01	mg/L		----	----	<0.01	----	----
Vanadium	7440-62-2	0.01	mg/L		----	----	<0.01	----	----
Zinc	7440-66-6	0.005	mg/L		----	----	<0.005	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		----	<0.0001	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		----	----	<0.0001	----	----
EP068A: Organochlorine Pesticides (OC)									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	QC02	QC05	----	----
				Client sampling date / time	02-Aug-2019 09:25	02-Aug-2019 09:40	02-Aug-2019 10:24	----	----
Compound	CAS Number	LOR	Unit		EM1912482-014	EM1912482-015	EM1912482-016	--------	--------
					Result	Result	Result	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.5	µg/L		----	<0.5	<0.5	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		----	<0.5	<0.5	----	----
beta-BHC	319-85-7	0.5	µg/L		----	<0.5	<0.5	----	----
gamma-BHC	58-89-9	0.5	µg/L		----	<0.5	<0.5	----	----
delta-BHC	319-86-8	0.5	µg/L		----	<0.5	<0.5	----	----
Heptachlor	76-44-8	0.5	µg/L		----	<0.5	<0.5	----	----
Aldrin	309-00-2	0.5	µg/L		----	<0.5	<0.5	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		----	<0.5	<0.5	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		----	<0.5	<0.5	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		----	<0.5	<0.5	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		----	<0.5	<0.5	----	----
Dieldrin	60-57-1	0.5	µg/L		----	<0.5	<0.5	----	----
4.4`-DDE	72-55-9	0.5	µg/L		----	<0.5	<0.5	----	----
Endrin	72-20-8	0.5	µg/L		----	<0.5	<0.5	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L		----	<0.5	<0.5	----	----
4.4`-DDD	72-54-8	0.5	µg/L		----	<0.5	<0.5	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		----	<0.5	<0.5	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		----	<0.5	<0.5	----	----
4.4`-DDT	50-29-3	2.0	µg/L		----	<2.0	<2.0	----	----
Endrin ketone	53494-70-5	0.5	µg/L		----	<0.5	<0.5	----	----
Methoxychlor	72-43-5	2.0	µg/L		----	<2.0	<2.0	----	----
^ Total Chlordane (sum)	----	0.5	µg/L		----	<0.5	<0.5	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		----	<0.5	<0.5	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		----	<0.5	<0.5	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		----	<0.5	<0.5	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		----	<0.5	<0.5	----	----
Monocrotophos	6923-22-4	2.0	µg/L		----	<2.0	<2.0	----	----
Dimethoate	60-51-5	0.5	µg/L		----	<0.5	<0.5	----	----
Diazinon	333-41-5	0.5	µg/L		----	<0.5	<0.5	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		----	<0.5	<0.5	----	----
Parathion-methyl	298-00-0	2.0	µg/L		----	<2.0	<2.0	----	----
Malathion	121-75-5	0.5	µg/L		----	<0.5	<0.5	----	----
Fenthion	55-38-9	0.5	µg/L		----	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	QC02	QC05	----	----
				Client sampling date / time	02-Aug-2019 09:25	02-Aug-2019 09:40	02-Aug-2019 10:24	----	----
Compound	CAS Number	LOR	Unit		EM1912482-014	EM1912482-015	EM1912482-016	--------	--------
					Result	Result	Result	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Chlorpyrifos	2921-88-2	0.5	µg/L		----	<0.5	<0.5	----	----
Parathion	56-38-2	2.0	µg/L		----	<2.0	<2.0	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		----	<0.5	<0.5	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		----	<0.5	<0.5	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		----	<0.5	<0.5	----	----
Fenamiphos	22224-92-6	0.5	µg/L		----	<0.5	<0.5	----	----
Prothiofos	34643-46-4	0.5	µg/L		----	<0.5	<0.5	----	----
Ethion	563-12-2	0.5	µg/L		----	<0.5	<0.5	----	----
Carbophenothion	786-19-6	0.5	µg/L		----	<0.5	<0.5	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		----	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ Total Xylenes	----	2	µg/L		<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		----	90.4	93.8	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		----	88.3	91.1	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		118	----	----	----	----
Toluene-D8	2037-26-5	2	%		86.5	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		118	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	36	140
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	38	128
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	33	139
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

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
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

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM1912482**	Page	: 1 of 20
Client	: **ENVIRONMENTAL SITE ASSESSMENTS PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MR SETON LILLAS	Contact	: Larissa Burns
Address	: P.O. BOX 3106 WAURN PONDS VIC 3216	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9644
Project	: 31-49 Melaluka Rd	Date Samples Received	: 02-Aug-2019
Order number	:	Date Analysis Commenced	: 06-Aug-2019
C-O-C number	: ----	Issue Date	: 12-Aug-2019
Sampler	: SL		
Site	: 31-49 Mclaluka Rd		
Quote number	: MEBQ/159/15 V2		
No. of samples received	: 16		
No. of samples analysed	: 16		

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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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	*Client 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: 2510860)									
EM1912455-028	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	160	150	0.00	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	10	10	0.00	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	4	4	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	13	11	12.8	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	120	125	4.05	0% - 20%
		EG005T: Copper	7440-50-8	5	mg/kg	8	9	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	30	22	27.8	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	69	86	21.6	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	15	16	9.53	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	96	108	11.2	0% - 20%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EM1912482-001	SP01/0-0.15	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	1	0.00	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	80	100	29.4	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	20	30	38.7	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	7	10	30.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	17	21	18.7	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	10	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	6	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	18	19	7.88	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	94	113	18.6	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client 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: 2510860) - continued									
EM1912482-001	SP01/0-0.15	EG005T: Vanadium	7440-62-2	5	mg/kg	51	61	17.7	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	22	26	16.2	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2511367)									
EM1912482-011	SP10/0-0.15	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	50	50	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	19	19	0.00	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	4	3	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	8	8	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	9	23.3	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	9	0.00	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	32	27	15.5	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	54	57	4.33	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	5	5	0.00	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2510755)									
EM1912479-001	Anonymous	EA055: Moisture Content	----	0.1	%	26.2	27.0	2.92	0% - 20%
EM1912482-010	SP09/0-0.15	EA055: Moisture Content	----	0.1	%	18.7	18.7	0.00	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2510861)									
EM1912455-028	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1912482-001	SP01/0-0.15	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: 2511368)									
EM1912482-011	SP10/0-0.15	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2510696)									
EM1912455-053	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1912467-018	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QC Lot: 2511404)									
EM1912221-001	Anonymous	EK028SF: Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2510476)									
EM1912482-001	SP01/0-0.15	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2510477)									
EM1912541-012	Anonymous	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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2510477) - continued									
EM1912541-012	Anonymous	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: Mirex	2385-85-5	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
EM1912482-001	SP01/0-0.15	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: Mirex	2385-85-5	0.05	mg/kg	<0.20	<0.20	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
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2510477)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2510477) - continued									
EM1912541-012	Anonymous	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
EM1912482-001	SP01/0-0.15	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
EP068C: Triazines (QC Lot: 2510477)									
EM1912541-012	Anonymous	EP068: Atrazine	1912-24-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068C: Triazines (QC Lot: 2510477) - continued									
EM1912482-001	SP01/0-0.15	EP068: Atrazine	1912-24-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068D: Pyrethroids (QC Lot: 2510477)									
EM1912541-012	Anonymous	EP068: Bifenthrin	82657-04-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EM1912482-001	SP01/0-0.15	EP068: Bifenthrin	82657-04-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 2510474)									
EM1912455-008	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
EM1912482-001	SP01/0-0.15	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2510474)									
EM1912455-008	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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2510474) - continued									
EM1912455-008	Anonymous	EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		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
EM1912482-001	SP01/0-0.15	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	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		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: 2509796)									
EM1912398-005	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EM1912398-053	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2510475)									
EM1912455-008	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: 2509796)									
EM1912398-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EM1912398-053	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: 2510475)									
EM1912455-008	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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 2509796)									
EM1912398-005	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
EM1912398-053	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	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2511632)									
EM1912481-001	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	0.002	0.001	0.00	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.028	0.027	5.49	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.002	<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: Manganese	7439-96-5	0.001	mg/L	0.120	0.114	5.34	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.016	0.015	6.74	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.007	0.007	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.25	0.18	34.3	No Limit
EM1912585-001	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	<0.001	<0.001	0.00	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.013	0.013	0.00	0% - 50%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.004	0.004	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2511632) - continued									
EM1912585-001	Anonymous	EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.035	0.037	5.48	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.00	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 2510371)									
EM1912476-004	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0008	0.0007	15.2	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.014	0.016	8.89	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	1.50	1.59	6.03	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.015	0.015	0.00	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.046	0.050	6.95	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.14	0.15	7.86	No Limit
EM1912502-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0005	0.0004	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.014	0.015	0.00	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.189	0.189	0.00	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	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: Manganese	7439-96-5	0.001	mg/L	18.3	18.0	1.76	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.050	0.049	0.00	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.051	0.050	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.14	0.15	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 2511630)									
EM1912436-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1900702-018	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2508031)									
EM1912221-029	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1912393-015	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2507536)									
EM1912263-062	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1912518-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	48500	46800	3.64	0% - 20%
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2507536)									
EM1912263-062	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1912518-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	46900	45300	3.41	0% - 20%
EP080: BTEXN (QC Lot: 2507536)									
EM1912263-062	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
EM1912518-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	2260	2330	3.10	0% - 20%
		EP080: Toluene	108-88-3	2	µg/L	26400	25500	3.35	0% - 20%
		EP080: Ethylbenzene	100-41-4	2	µg/L	1490	1570	5.02	0% - 50%
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	8000	7800	2.58	0% - 20%
		EP080: ortho-Xylene	95-47-6	2	µg/L	3460	3390	1.87	0% - 20%
		EP080: Naphthalene	91-20-3	5	µg/L	106	112	5.80	0% - 20%

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**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2510860)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	86.1	78	107
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	82.7	76	110
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	91.5	84	113
EG005T: Boron	7440-42-8	50	mg/kg	<50	33.2 mg/kg	94.4	84	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	85.5	76	108
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	88.4	78	110
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16 mg/kg	90.7	78	112
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	81.2	78	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	81.3	78	106
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	90.7	81	110
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	93.5	80	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	97.1	92	110
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	89.7	78	106
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	90.8	79	110
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2511367)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	83.1	78	107
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	79.4	76	110
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	91.4	84	113
EG005T: Boron	7440-42-8	50	mg/kg	<50	33.2 mg/kg	101	84	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	84.1	76	108
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	86.7	78	110
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16 mg/kg	93.6	78	112
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	83.8	78	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	82.4	78	106
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	88.9	81	110
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	93.2	80	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	99.5	92	110
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	88.4	78	106
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	85.0	79	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2510861)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	94.0	77	104
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2511368)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	91.2	77	104
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2510696)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2510696) - continued								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	83.2	75	112
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 2511404)								
EK028SF: Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	20 mg/kg	103	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2510476)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	96.6	63	115
EP068A: Organochlorine Pesticides (OC) (QCLot: 2510477)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	112	69	122
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	109	71	122
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	101	72	121
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	107	66	124
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	60	120
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	62	120
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	111	70	122
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	113	70	121
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	114	68	124
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	115	71	124
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	114	71	122
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	65	123
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	117	71	121
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	107	63	129
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	114	70	122
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	111	69	128
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	69	129
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	64	129
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	80.1	62	129
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.1	76	123
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	81.6	58	129
EP068: Mirex	2385-85-5	0.05	mg/kg	<0.05	0.5 mg/kg	88.1	76	124
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2510477)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	72	134
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.7	63	141
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	86.3	10	136
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.5	62	130
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	115	70	124
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	114	70	121
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	93.5	60	126
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	65	126
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	115	73	122

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2510477) - continued								
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	114	67	126
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	88.7	59	126
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	115	67	124
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	112	57	130
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	113	70	122
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	104	54	133
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	110	70	123
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	112	67	123
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.9	71	129
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	90.5	31	141
EP068C: Triazines (QCLot: 2510477)								
EP068: Atrazine	1912-24-9	0.05	mg/kg	<0.05	0.5 mg/kg	111	72	123
EP068D: Pyrethroids (QCLot: 2510477)								
EP068: Bifenthrin	82657-04-3	0.05	mg/kg	<0.05	0.5 mg/kg	86.1	68	129
EP075(SIM)A: Phenolic Compounds (QCLot: 2510474)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	3 mg/kg	107	77	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	3 mg/kg	107	78	126
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	3 mg/kg	106	77	125
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	6 mg/kg	107	76	130
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	3 mg/kg	96.0	53	118
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	3 mg/kg	105	71	128
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	3 mg/kg	101	73	126
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	3 mg/kg	102	73	128
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	3 mg/kg	95.4	69	123
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	3 mg/kg	89.6	64	122
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	3 mg/kg	98.8	70	128
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	6 mg/kg	69.8	20	113
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2510474)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	110	77	129
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	102	74	130
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	118	78	129
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	116	78	128
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	124	83	130
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	118	76	129
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	123	79	134
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	126	84	135
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	118	72	125
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	126	76	135

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2510474) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	89.2	69	123
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	103	77	131
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	86.2	65	116
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	104	65	124
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	104	66	127
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	104	65	124
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2509796)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	36 mg/kg	94.7	61	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2510475)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	688 mg/kg	99.0	72	122
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	3100 mg/kg	93.4	84	123
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	1490 mg/kg	94.2	79	119
EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2509796)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	89.5	60	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2510475)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	1050 mg/kg	95.5	77	121
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	3960 mg/kg	94.1	83	121
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	280 mg/kg	95.2	65	123
EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN (QCLot: 2509796)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	93.5	63	119
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	99.8	67	126
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	95.9	66	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	97.5	68	128
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	103	73	128
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	97.3	61	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2511632)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	104	91	107
EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	101	82	113
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	102	84	106
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.4	84	104
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.4	83	103

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2511632) - continued								
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	101	83	106
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.4	82	103
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	83	105
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	105	83	105
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	100	82	106
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	97.7	82	109
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	99.6	83	106
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.7	85	109
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	101	84	116
EG020T: Total Metals by ICP-MS (QCLot: 2510371)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	100	90	110
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	96.3	88	113
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	93.7	88	112
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.2	86	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.6	87	109
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	100	88	113
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	87	108
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.1	88	109
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.6	88	111
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	106	87	111
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	96.6	85	113
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	93.0	88	112
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	106	87	113
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	109	88	118
EG035F: Dissolved Mercury by FIMS (QCLot: 2511630)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	83.1	76	114
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2508031)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.5	76	115
EP068A: Organochlorine Pesticides (OC) (QCLot: 2507694)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	2.5 µg/L	102	56	118
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	2.5 µg/L	94.4	49	114
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	2.5 µg/L	101	60	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	2.5 µg/L	96.5	53	121
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	2.5 µg/L	95.4	59	117
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	2.5 µg/L	95.9	54	120
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	2.5 µg/L	92.3	54	118
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	2.5 µg/L	95.6	58	121
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	2.5 µg/L	94.7	52	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2507694) - continued								
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	2.5 µg/L	101	55	122
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	2.5 µg/L	94.8	55	121
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	2.5 µg/L	95.6	55	122
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	2.5 µg/L	93.9	52	122
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	2.5 µg/L	106	56	131
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	2.5 µg/L	100	57	121
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	2.5 µg/L	96.9	55	125
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	2.5 µg/L	100	58	126
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	2.5 µg/L	86.1	50	126
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	2.5 µg/L	84.5	51	132
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	2.5 µg/L	81.2	58	121
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	2.5 µg/L	86.1	50	134
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2507694)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	2.5 µg/L	90.5	47	127
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	2.5 µg/L	98.8	42	129
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	2.5 µg/L	12.3	10	43
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	2.5 µg/L	96.0	45	115
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	2.5 µg/L	98.2	56	119
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	2.5 µg/L	98.7	57	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	2.5 µg/L	104	51	131
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	2.5 µg/L	105	57	125
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	2.5 µg/L	100.0	57	120
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	2.5 µg/L	104	54	122
EP068: Parathion	56-38-2	2	µg/L	<2.0	2.5 µg/L	112	49	138
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	2.5 µg/L	99.5	57	119
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	2.5 µg/L	108	53	130
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	2.5 µg/L	98.6	56	121
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	2.5 µg/L	115	48	138
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	2.5 µg/L	102	54	123
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	2.5 µg/L	103	56	126
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	2.5 µg/L	90.4	54	126
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	2.5 µg/L	112	23	160
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2507536)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	108	65	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2507536)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	102	64	124
EP080: BTEXN (QCLot: 2507536)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	104	69	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEXN (QCLot: 2507536) - continued								
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	107	73	124
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	108	71	125
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	120	72	129
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	116	76	129
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	115	70	125

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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2510860)							
EM1912455-035	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	92.9	78	124
		EG005T: Barium	7440-39-3	50 mg/kg	89.1	71	135
		EG005T: Beryllium	7440-41-7	50 mg/kg	94.4	85	125
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.6	84	116
		EG005T: Chromium	7440-47-3	50 mg/kg	91.0	79	121
		EG005T: Copper	7440-50-8	50 mg/kg	82.5	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	93.0	76	124
		EG005T: Manganese	7439-96-5	50 mg/kg	69.9	68	136
		EG005T: Nickel	7440-02-0	50 mg/kg	91.1	78	120
		EG005T: Selenium	7782-49-2	50 mg/kg	94.3	71	125
		EG005T: Vanadium	7440-62-2	50 mg/kg	83.1	76	124
		EG005T: Zinc	7440-66-6	50 mg/kg	88.3	74	128
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2511367)							
EM1912482-012	TP01/0-0.15	EG005T: Arsenic	7440-38-2	50 mg/kg	90.7	78	124
		EG005T: Barium	7440-39-3	50 mg/kg	99.2	71	135
		EG005T: Beryllium	7440-41-7	50 mg/kg	85.8	85	125
		EG005T: Cadmium	7440-43-9	50 mg/kg	91.3	84	116
		EG005T: Chromium	7440-47-3	50 mg/kg	99.2	79	121
		EG005T: Copper	7440-50-8	50 mg/kg	86.8	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	83.1	76	124
		EG005T: Manganese	7439-96-5	50 mg/kg	94.6	68	136
		EG005T: Nickel	7440-02-0	50 mg/kg	94.0	78	120
		EG005T: Selenium	7782-49-2	50 mg/kg	72.3	71	125
		EG005T: Vanadium	7440-62-2	50 mg/kg	106	76	124

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2511367) - continued							
EM1912482-012	TP01/0-0.15	EG005T: Zinc	7440-66-6	50 mg/kg	81.9	74	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2510861)							
EM1912455-035	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	# 65.3	76	116
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2511368)							
EM1912482-012	TP01/0-0.15	EG035T: Mercury	7439-97-6	0.5 mg/kg	95.3	76	116
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2510696)							
EM1912467-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	87.8	58	114
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 2511404)							
EM1912221-007	Anonymous	EK028SF: Weak Acid Dissociable Cyanide	----	20 mg/kg	75.6	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2510476)							
EM1912482-010	SP09/0-0.15	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	96.2	44	144
EP068A: Organochlorine Pesticides (OC) (QCLot: 2510477)							
EM1912482-002	SP02/0-0.15	EP068: gamma-BHC	58-89-9	0.5 mg/kg	82.6	22	139
		EP068: Heptachlor	76-44-8	0.5 mg/kg	90.3	18	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	97.4	23	136
		EP068: Dieldrin	60-57-1	0.5 mg/kg	96.3	42	136
		EP068: Endrin	72-20-8	0.5 mg/kg	102	23	146
		EP068: 4.4`-DDT	50-29-3	0.5 mg/kg	62.2	20	133
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2510477)							
EM1912482-002	SP02/0-0.15	EP068: Diazinon	333-41-5	0.5 mg/kg	112	49	135
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	96.7	41	127
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	93.4	47	133
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	114	45	133
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	83.0	40	128
EP075(SIM)A: Phenolic Compounds (QCLot: 2510474)							
EM1912455-018	Anonymous	EP075(SIM): Phenol	108-95-2	3 mg/kg	94.0	63	117
		EP075(SIM): 2-Chlorophenol	95-57-8	3 mg/kg	92.6	65	123
		EP075(SIM): 2-Nitrophenol	88-75-5	3 mg/kg	82.7	40	134
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	3 mg/kg	82.4	56	122
		EP075(SIM): Pentachlorophenol	87-86-5	3 mg/kg	59.9	15	139
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2510474)							
EM1912455-018	Anonymous	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	98.2	67	117
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	123	52	148
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2509796)							
EM1912398-012	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	108	42	131

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Recovery Limits (%) Low	Matrix Spike (MS) Report: Recovery Limits (%) High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2510475)							
EM1912455-028	Anonymous	EP071: C10 - C14 Fraction	----	688 mg/kg	104	53	123
		EP071: C15 - C28 Fraction	----	3100 mg/kg	108	70	124
		EP071: C29 - C36 Fraction	----	1490 mg/kg	113	64	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2509796)							
EM1912398-012	Anonymous	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	110	39	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2510475)							
EM1912455-028	Anonymous	EP071: >C10 - C16 Fraction	----	1050 mg/kg	99.4	65	123
		EP071: >C16 - C34 Fraction	----	3960 mg/kg	110	67	121
		EP071: >C34 - C40 Fraction	----	280 mg/kg	112	44	126
EP080: BTEXN (QCLot: 2509796)							
EM1912398-012	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	110	50	136
		EP080: Toluene	108-88-3	2 mg/kg	107	56	139

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Recovery Limits (%) Low	Matrix Spike (MS) Report: Recovery Limits (%) High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2511632)							
EM1912481-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	115	85	131
		EG020A-F: Beryllium	7440-41-7	0.2 mg/L	92.2	73	141
		EG020A-F: Barium	7440-39-3	0.2 mg/L	103	75	127
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	95.0	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	98.3	71	135
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	109	78	132
		EG020A-F: Copper	7440-50-8	0.2 mg/L	99.4	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	96.9	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	96.0	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	106	73	131
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	102	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	109	75	131
EG020T: Total Metals by ICP-MS (QCLot: 2510371)							
EM1912476-004	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	94.0	82	118
		EG020A-T: Beryllium	7440-41-7	1 mg/L	99.4	79	121
		EG020A-T: Barium	7440-39-3	1 mg/L	90.7	80	114
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	91.4	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	88.1	80	118
		EG020A-T: Cobalt	7440-48-4	1 mg/L	91.0	82	120
		EG020A-T: Copper	7440-50-8	1 mg/L	87.3	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	91.6	83	121

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 2510371) - continued							
EM1912476-004	Anonymous	EG020A-T: Manganese	7439-96-5	1 mg/L	86.4	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	96.6	80	118
		EG020A-T: Vanadium	7440-62-2	1 mg/L	92.6	81	119
		EG020A-T: Zinc	7440-66-6	1 mg/L	90.3	74	116
EG035F: Dissolved Mercury by FIMS (QCLot: 2511630)							
EM1912362-002	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	86.3	70	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2508031)							
EM1912221-030	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	88.8	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2507536)							
EM1912263-067	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	97.8	43	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2507536)							
EM1912263-067	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	92.6	44	122
EP080: BTEXN (QCLot: 2507536)							
EM1912263-067	Anonymous	EP080: Benzene	71-43-2	20 µg/L	100	68	130
		EP080: Toluene	108-88-3	20 µg/L	106	72	132

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM1912482**	Page	: 1 of 10
Client	: **ENVIRONMENTAL SITE ASSESSMENTS PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MR SETON LILLAS	Telephone	: +6138549 9644
Project	: 31-49 Melaluka Rd	Date Samples Received	: 02-Aug-2019
Site	: 31-49 Mclaluka Rd	Issue Date	: 12-Aug-2019
Sampler	: SL	No. of samples received	: 16
Order number	:	No. of samples analysed	: 16

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG035T: Total Recoverable Mercury by FIMS	EM1912455--035	Anonymous	**Mercury**	7439-97-6	65.3 %	76-116%	**Recovery less than lower data quality objective**

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)					
Pesticides by GCMS	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Pesticides by GCMS	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method / ***Container*** / Client Sample ID(s)	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
SP01/0-0.15, SP02/0-0.15, SP03/0-0.15, SP04/0-0.15, SP05/0-0.15, QC03, SP06/0-0.15, SP07/0-0.15, SP08/0-0.15, SP09/0-0.15, SP10/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**----**	----	----	**07-Aug-2019**	16-Aug-2019	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
SP01/0-0.15, SP02/0-0.15, SP03/0-0.15, SP04/0-0.15, SP05/0-0.15, QC03, SP06/0-0.15, SP07/0-0.15, SP08/0-0.15, SP09/0-0.15, SP10/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**07-Aug-2019**	29-Jan-2020	✓	**07-Aug-2019**	29-Jan-2020	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
SP01/0-0.15, SP02/0-0.15, SP03/0-0.15, SP04/0-0.15, SP05/0-0.15, QC03, SP06/0-0.15, SP07/0-0.15, SP08/0-0.15, SP09/0-0.15, SP10/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**07-Aug-2019**	30-Aug-2019	✓	**08-Aug-2019**	30-Aug-2019	✓
EG048: Hexavalent Chromium (Alkaline Digest)							
Soil Glass Jar - Unpreserved (EG048G)							
SP01/0-0.15, SP09/0-0.15	**02-Aug-2019**	**07-Aug-2019**	30-Aug-2019	✓	**07-Aug-2019**	14-Aug-2019	✓
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser							
Soil Glass Jar - Unpreserved (EK028SF)							
SP01/0-0.15, SP09/0-0.15	**02-Aug-2019**	**07-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	21-Aug-2019	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
SP01/0-0.15, SP09/0-0.15	**02-Aug-2019**	**07-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Sep-2019	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
SP01/0-0.15, SP02/0-0.15, SP03/0-0.15, SP04/0-0.15, SP06/0-0.15, SP07/0-0.15, SP08/0-0.15, SP09/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**07-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Sep-2019	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
SP01/0-0.15, SP02/0-0.15, SP03/0-0.15, SP04/0-0.15, SP06/0-0.15, SP07/0-0.15, SP08/0-0.15, SP09/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**07-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Sep-2019	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068C: Triazines							
Soil Glass Jar - Unpreserved (EP068)							
SP01/0-0.15, SP09/0-0.15	**02-Aug-2019**	**07-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Sep-2019	✓
EP068D: Pyrethroids							
Soil Glass Jar - Unpreserved (EP068)							
SP01/0-0.15, SP09/0-0.15	**02-Aug-2019**	**07-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Sep-2019	✓
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM))							
SP01/0-0.15, SP09/0-0.15	**02-Aug-2019**	**07-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Sep-2019	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
SP01/0-0.15, SP09/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**07-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Sep-2019	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
SP01/0-0.15, SP09/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**06-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Aug-2019	✓
Soil Glass Jar - Unpreserved (EP071)							
SP01/0-0.15, SP09/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**07-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Sep-2019	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
SP01/0-0.15, SP09/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**06-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Aug-2019	✓
Soil Glass Jar - Unpreserved (EP071)							
SP01/0-0.15, SP09/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**07-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Sep-2019	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
SP01/0-0.15, SP09/0-0.15, TP01/0-0.15, TP02/0-0.15	**02-Aug-2019**	**06-Aug-2019**	16-Aug-2019	✓	**08-Aug-2019**	16-Aug-2019	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
QC02	**02-Aug-2019**	**----**	----	----	**08-Aug-2019**	29-Jan-2020	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
QC05	**02-Aug-2019**	**07-Aug-2019**	29-Jan-2020	✓	**07-Aug-2019**	29-Jan-2020	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
QC02	**02-Aug-2019**	**----**	----	----	**08-Aug-2019**	30-Aug-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
QC05	**02-Aug-2019**	**----**	----	----	**06-Aug-2019**	30-Aug-2019	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
QC02, QC05	**02-Aug-2019**	**06-Aug-2019**	09-Aug-2019	✓	**07-Aug-2019**	15-Sep-2019	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068)							
QC02, QC05	**02-Aug-2019**	**06-Aug-2019**	09-Aug-2019	✓	**07-Aug-2019**	15-Sep-2019	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**02-Aug-2019**	**06-Aug-2019**	16-Aug-2019	✓	**06-Aug-2019**	16-Aug-2019	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**02-Aug-2019**	**06-Aug-2019**	16-Aug-2019	✓	**06-Aug-2019**	16-Aug-2019	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**02-Aug-2019**	**06-Aug-2019**	16-Aug-2019	✓	**06-Aug-2019**	16-Aug-2019	✓

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)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	11	**18.18**	**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	3	26	**11.54**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	11	**9.09**	**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	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	11	**9.09**	**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	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	11	**9.09**	**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	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Total Metals by ICP-AES	EG005T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	5	**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	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	**20.00**	**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	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	**20.00**	**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	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	5	**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	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
WAD Cyanide by Segmented Flow Analyser	EK028SF	SOIL	In house: Referenced to APHA 4500-CN-O. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Hydrogen cyanide is liberated from a slightly acidified (pH 4.5) and is dialysed. Tight cyanide complexes that would not be amenable to oxidation by chlorine are not converted. Iron cyanide complexes are precipitated with zinc acetate. Liberated HCN diffuses through a membrane into a stream of sodium hydroxide where it is carried as CN- The cyanide in caustic solution is buffered to pH 5.2 and further converted to cyanogen chloride by reaction with chloramine-T. Cyanogen chloride subsequently reacts with 4 ¿pyridine carboxylic and 1,3 - dimethylbarbituric acids to give a red colour complex. This colour is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. 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 (2013) Schedule B(3) (Method 502 and 507)

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
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.
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.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(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 SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B 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 (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
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 (2013) Schedule B(3) (Method 202)
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.

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
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 (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 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 (2013) 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 sparging.

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 1 of 1

Company Name : Environmental Site Assessments	**Contact Name: Seton Lillas**	**Purchase Order :**	**COC Number :**
Office Address : PO Box 3106, Waurn Ponds VIC 3216	**Project Manager : As Above**	**PROJECT Number :**	**Eurofins | mgt quote ID :**
	Email for results : office@esagroup.com.au	**PROJECT Name :** 21-49 Mulgrave Rd	**Data output format:**

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

15 Metals

	Sample ID	Date	Matrix	
1	QC04	2/8/19	S	X
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	

Sample comments:

Laboratory Staff

Relinquished By: S. Li 1195
Date & Time:: 11.06 2/8/19
Signature:

Received By:
Date & Time: 2/8 9:13
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☒ 10 DAY ☐ Other:

Method Of Shipment

☒ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival:

Report number: 119381

Environmental Site Assessments P/L
2 Homestead Crt
Highton
VIC 3216

NATA Accredited
Accreditation Number 1261
Site Number 1254

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: **- Seton Lillas (cc All SRA/Summary/Reports)**

Report **669381-S**
Project name 31-49 MULALUKA RD
Received Date Aug 02, 2019

Client Sample ID			**QC04**
Sample Matrix			**Soil**
Eurofins Sample No.			**M19-Au03502**
Date Sampled			**Aug 02, 2019**
Test/Reference	LOR	Unit	
Chromium (hexavalent)	1	mg/kg	< 1
Chromium (trivalent)	5	mg/kg	22
% Moisture	1	%	17
Heavy Metals			
Arsenic	2	mg/kg	16
Barium	10	mg/kg	44
Beryllium	2	mg/kg	< 2
Boron	10	mg/kg	< 10
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	22
Cobalt	5	mg/kg	< 5
Copper	5	mg/kg	< 5
Lead	5	mg/kg	11
Manganese	5	mg/kg	52
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	9.1
Vanadium	10	mg/kg	84
Zinc	5	mg/kg	9.4

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
Chromium (hexavalent)	Melbourne	Aug 05, 2019	28 Days
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Heavy Metals	Melbourne	Aug 05, 2019	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Aug 03, 2019	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins | Environment Testing

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NATA # 1261 Site # 18217

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Murarrie QLD 4172
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NATA # 1261 Site # 20794

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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: Environmental Site Assessments P/L
Address: 2 Homestead Crt
Highton
VIC 3216

Project Name: 31-49 MULALUKA RD

Order No.:
Report #: 669381
Phone:
Fax:

Received: Aug 2, 2019 4:13 PM
Due: Aug 9, 2019
Priority: 5 Day
Contact Name: - Seton Lillas (cc All

Eurofins Analytical Services Manager : Cindi Guo

Sample Detail						NEPM 1999 Metals : Metals M15	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	QC04	Aug 02, 2019		Soil	M19-Au03502	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples 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
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
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							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	115			80-120	Pass	
Barium	%	120			80-120	Pass	
Beryllium	%	108			80-120	Pass	
Boron	%	100			80-120	Pass	
Cadmium	%	117			80-120	Pass	
Chromium	%	117			80-120	Pass	
Cobalt	%	117			80-120	Pass	
Copper	%	114			80-120	Pass	
Lead	%	115			80-120	Pass	
Manganese	%	119			80-120	Pass	
Mercury	%	100			75-125	Pass	
Nickel	%	113			80-120	Pass	
Vanadium	%	115			80-120	Pass	
Zinc	%	114			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M19-Au03586	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M19-Au03571	NCP	%	91			75-125	Pass	
Barium	M19-Au03571	NCP	%	98			75-125	Pass	
Beryllium	M19-Au03571	NCP	%	97			75-125	Pass	
Boron	M19-Au03571	NCP	%	87			75-125	Pass	
Cadmium	M19-Au03571	NCP	%	112			75-125	Pass	
Chromium	M19-Au03571	NCP	%	107			75-125	Pass	
Cobalt	M19-Au03571	NCP	%	108			75-125	Pass	
Copper	M19-Au03571	NCP	%	108			75-125	Pass	
Lead	M19-Au03571	NCP	%	106			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese	M19-Au03571	NCP	%	101			75-125	Pass	
Mercury	M19-Au03571	NCP	%	100			70-130	Pass	
Nickel	M19-Au03571	NCP	%	106			75-125	Pass	
Vanadium	M19-Au03571	NCP	%	93			75-125	Pass	
Zinc	M19-Au03571	NCP	%	107			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M19-Au03585	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
% Moisture	M19-Au03466	NCP	%	15	16	6.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M19-Au03570	NCP	mg/kg	26	29	9.0	30%	Pass	
Barium	M19-Au03570	NCP	mg/kg	75	74	1.0	30%	Pass	
Beryllium	M19-Au03570	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M19-Au03570	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	M19-Au03570	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M19-Au03570	NCP	mg/kg	22	22	2.0	30%	Pass	
Cobalt	M19-Au03570	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	M19-Au03570	NCP	mg/kg	10	11	4.0	30%	Pass	
Lead	M19-Au03570	NCP	mg/kg	110	94	15	30%	Pass	
Manganese	M19-Au03570	NCP	mg/kg	74	75	2.0	30%	Pass	
Mercury	M19-Au03570	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M19-Au03570	NCP	mg/kg	13	13	1.0	30%	Pass	
Vanadium	M19-Au03570	NCP	mg/kg	54	64	16	30%	Pass	
Zinc	M19-Au03570	NCP	mg/kg	140	160	14	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Cindi Guo	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Julie Kay	Senior Analyst-Inorganic (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.