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DETAILED SITE INVESTIGATION

110-112 MOUNT VERNON ROAD, MOUNT VERNON NSW

PREPARED FOR: Graham Mann

REFERENCE: REP-19-7579-A1

DATE: 17th March 20202

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EXECUTIVE SUMMARY

EnviroTech Pty. Ltd. was engaged by Mr. Graham Mann of PW Design Pty Ltd to conduct a Detailed Site Investigation at 110-112 Mount Vernon Road, Mount Vernon NSW 2178 (hereafter referred to as the site). The investigation is part of a development application for a proposed childcare centre.

The total area of the site is approximately 10,250 m^2. A site inspection was carried out on Tuesday 26th March 2019 which involved a visual assessment of the entire the site and surrounding areas as well as the acquisition of representative soil samples. Details of the findings are presented within the body of this report, as well as an assessment of significance with regards to the findings of the investigation.

The site has remained unchanged between the period of the initial report, dated 8th April 2019, to the date of this revised report, dated 17th March 2020, in accordance to aerial imagery via www.maps.au.nearmap.com with the exception of minor truck movements on site to store wooden crates on site within the north eastern portion of the site. It appears that these crates hold construction material in anticipation for the future proposed site development. No other environmental issues on site between this period warrants further investigation.

This report was completed in accordance with the *Guidelines for Consultants Reporting on Contaminated Sites, NSW EPA, September 2000*.

Based on the data and evidence collected during the site inspection and site history review, the findings of the Detailed Site Investigation are as follows:

- On Tuesday 26th March 2019, a site inspection was conducted by Envirotech consultant Jack Hinchliffe;
- At the time of inspection, the site consisted of a fenced off unoccupied and empty property. The majority of the site was comprised of disused market gardens;
- At the north-eastern and southern portions of site were the footprint remains of sheds and a residential house that were previously demolished. Stockpiles were present at the southern portion of site;
- The following area of concern were identified:
    - Previous historical site use as a market garden has the potential for OC/OP Pesticides to be impacting soils onsite;
    - Previously existing residential building and sheds originally constructed in an era to have comprised potentially hazardous building materials and incorrectly demolished;
    - Potentially unvalidated stockpiles onsite comprised of unknown building materials;
    - The underlying soils onsite have the potential to be comprised of unknown fill material.
- The site was first developed before 1955;
- The site is not listed by the EPA;
- Based on the available information, a targeted and stratified sampling plan was considered most appropriate to provide sufficient characterisation data. A total of twenty-one (21) test pits were nominated across the area of investigation (Figure 3);

- Samples were analysed for Heavy Metals, Phenols, TRH, BTEX, PAH, Hydrocarbons, OC/OP Pesticides & Asbestos by ALS Environmental Division;
- Soil chemical concentrations were below the thresholds of the adopted human health and ecological assessment criteria for residential land use as specified under the NEPM (2013);

All soil samples collected and tested (26th March 2019) were reported by the laboratory to have concentrations below the adopted site assessment criteria for HIL A, land use as per the NEPM, 2013, except for the following samples:

- **TP6/ASB1 (0-0.5m): Chrysotile Asbestos & Amosite Asbestos presence**
  - BONDED (Three pieces of asbestos cement sheeting approx. 50 x 40 x 5mm)
- **TP7/ASB2 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
  - BONDED (Three pieces of asbestos cement sheeting approx. 60 x 50 x 5mm)
- **TP8/ASB3 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
  - BONDED (One piece of asbestos cement sheeting approx. 80 x 30 x 5mm)
- **TP19/ASB6 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
  - BONDED (Two larger pieces of asbestos cement sheeting approx. 80 x 40 x 5mm and one smaller piece of asbestos cement sheeting approx. 5 x 4 x 3mm)

As soil samples indicate the *presence of BONDED Asbestos*, within four (4) sampling locations, it is recommended that a suitably trained and qualified professional is engaged to prepare the following:

- Additional **Delineation Sampling** at and around the potentially asbestos hotspot areas of TP6/ASB1, TP7/ASB2, TP8/ASB3 and TP19/ASB6 to further characterise these potential areas of concern and to determine the lateral and vertical extent of the asbestos contamination according regulatory guidelines and site criteria.
- A **Visual Inspection** is to be undertaken of these areas by a SafeWork NSW Licensed Approved Asbestos Assessor to ensure no visible asbestos containing materials (ACM) are identified on surface soils and provide an Asbestos Clearance Certificate for the potential areas.

Also, to further characterise the site, the additional sampling is required:

- Additional **Stockpile Sampling** to further characterise the stockpiled soils within the southern portion of the site. If the stockpiles have been removed, then the stockpile footprint areas will be sampled to further characterise underlying soils.

Details of the required additional works will be recommended within in the amended Envirotech RAP (REP: 19-7963-A1).

Subject to the above, it is considered that the site can be remediated and made suitable for the intended proposed residential development, pending on the following Delineation Sampling, Visual Inspection and subsequent Remedial and Validation Works, if required.

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1. INTRODUCTION

1.1 Background

EnviroTech Pty. Ltd. was engaged by Graham Mann to conduct a Detailed Site Investigation at 110-112 Mount Vernon Road, Mount Vernon NSW 2178 (hereafter referred to as the site). The investigation is part of a development application for a proposed childcare centre.

The total area of the site is approximately 10,250 m^2. A site inspection was carried out on Tuesday 26th March 2019 which involved a visual assessment of the entire the site and surrounding areas as well as the acquisition of representative soil samples. Details of the findings are presented within the body of this report, as well as an assessment of significance with regards to the findings of the investigation.

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This report was completed in accordance with the *Guidelines for Consultants Reporting on Contaminated Sites, NSW EPA, September 2000*.

1.2 Objectives

The objectives of this DSI were to:

1. Identify past and present potentially contaminating activities;
2. Identify potential contaminants of concern;
3. Provide a preliminary assessment of the condition of the site and potential for contamination; and
4. Assess the need for further investigation.

1.3 Scope of Works

The scope of works included the following:

1. Acquisition and review of available data comprising;

    - Cadastre & Topography
    - Aerial Imagery
    - EPA Contaminated Land
    - EPA Records of Notice
    - National Waste
    - Groundwater Bores
    - Geology & Soils
    - Planning Zones

2. A review of past and current site uses;
3. A review of past and current adjacent site uses;
4. A site inspection;
5. *Supplementary* soil sampling and analysis; and
6. Reporting in accordance with the associated legislations and guidelines.

1.4 Legislative Requirements

The legislative framework for the report is based on guidelines that have been set out by the NSW Environmental Protection Agency (EPA) formerly the Office of Environment and Heritage (OEH) in the form of the following Acts/Regulations:

- *Protection of the Environment Operations Act* (1997);
- *Protection of the Environment Operations Regulation* (2008);
- *Contaminated Land Management Act* (1998).

In addition, the following guidelines and technical documents have been reviewed and applied where applicable:

- *Contaminated Land Management - Guidelines for the NSW Site Auditor Scheme (3rd Edition, 2017).*
- *State Environmental Planning Policy No.55 (SEPP55) – Remediation of Land (2018)*
- *NSW EPA Guidelines for Consultants Reporting on Contaminated Sites (2011).*
- *NSW EPA Sampling Design Guidelines (1995).*
- *NSW EPA Waste Classification Guidelines Part 1: Classifying Waste (2014).*
- *NSW EPA Guidelines for Assessing Former Orchards and Market Gardens (2005)*
- *Guidelines on the Investigation Levels for Soil and Groundwater, National Environmental Protection Measure 1999, 2013 Amendment (NEPC, 2013).*
- *Australian Standard AS 4482.1 Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.*
- *Australian Standard AS 4482.2 Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances.*
- *CRC CARE Technical Report No. 39: Risk-based remediation and management guidance for benzo(a)pyrene (2017).*
- *Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008 (NSW DECCW, 2009).*
- *Guidelines for the Assessment and Management of Groundwater Contamination (NSW DEC, 2007).*
- *Guidelines for the Assessment, Remediation & Management of Asbestos - Contaminated Sites (WA DOH, 2009).*
- *"Technical Report on Synthetic Mineral Fibres' in Technical Report on Synthetic Mineral Fibres and Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibres" (National Occupational Health and Safety Commission, 1990);*

1.5 Context of report

This report is to be read in its entirety and should not be review in individual section to provide any level of information independently. Each section of the report relates to the rest of the document and as such is to be read in conjunction, including its appendices and attachments.

2. SITE IDENTIFICATION

The study site is 110-112 Mount Vernon Road, Mount Vernon NSW 2178 (Lot 4 DP865818) (Figure 1). It can be identified as a trapezoidal allotment north of Mount Vernon Road. Figure 2 shows an aerial photograph of the site and the surrounding land.

Table 1: Site Identification.

Street Address	110-112 Mount Vernon Road, Mount Vernon
Lot and DP Number	Lot 4 DP865818
Approx. Site Area	10,250 m^2
Local Government Area	Penrith City Council
Zoning	E4 – Environmental Living
LGA Legislation	Penrith Local Environmental Plan 2010

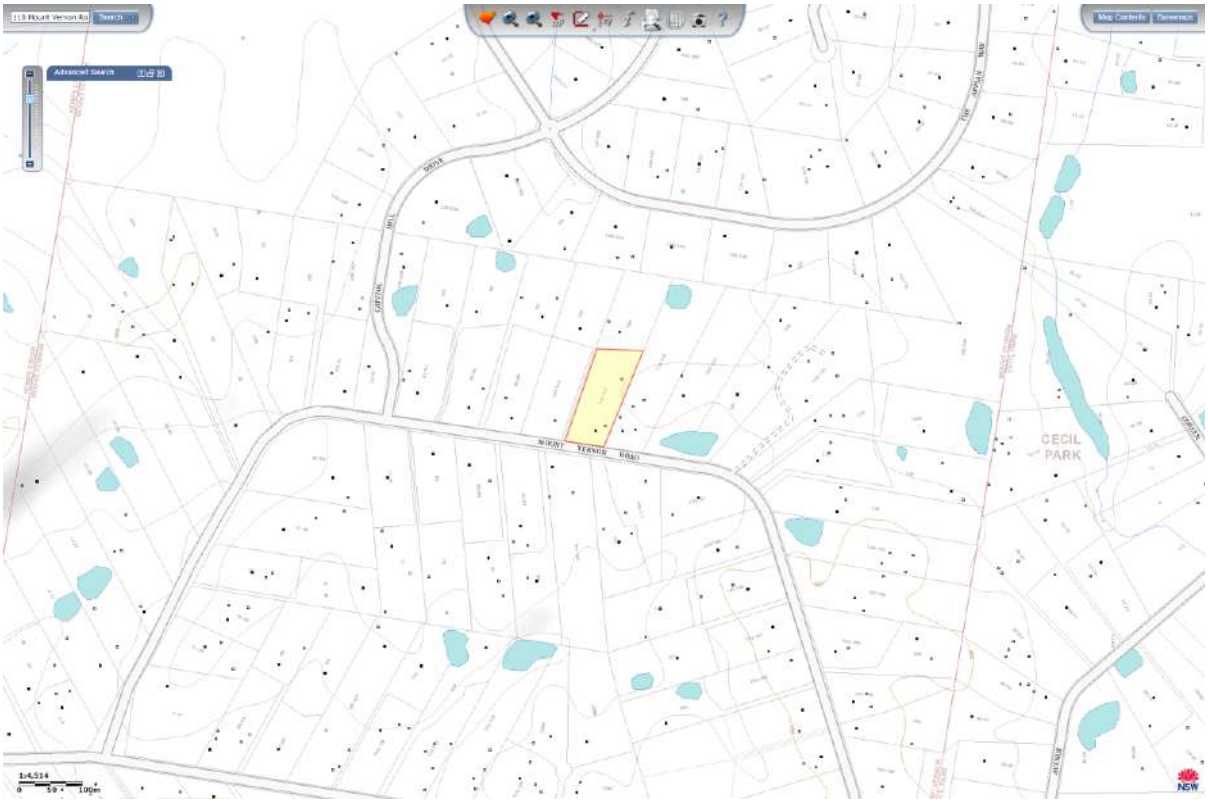


Figure 1: Site location map (NSW Spatial Information Exchange).

3. AREA OF INVESTIGATION

The investigation is part of a development application for a proposed childcare centre. The entire site was accessible and was investigated, including the proposed development area within the southern half of the site.

Figure 2: Aerial photograph of the site and surrounding land (NSW Spatial Information Exchange).

4. SITE DESCRIPTION

4.1 Site Inspection

On Tuesday 26th March 2019, a site inspection was conducted by Envirotech consultant Jack Hinchliffe. Field work was carried out in accordance with the methodology described in AS 4482.1 – 2005 and the NEPM (2013). At the time of inspection, the site consisted of a fenced off unoccupied and empty property. The majority of the site was comprised of disused market gardens. At the north-eastern and southern portions of site were the footprint remains of sheds and a residential house that were previously demolished. Stockpiles were present at the southern portion of site.

4.2 Surrounding Land Use

The site is located within a rural residential setting and bordered by:

- Rural residential allotments surrounding the site in all directions and
- Current Market Gardens surrounding the site to the east, west and south.

4.3 Topography

Gently undulating rises on Wianamatta Shale with local relief 10–30 m and slopes generally >5% but occasionally up to 10%. Crests and ridges are broad (200–600 m) and rounded with convex upper slopes grading into concave lower slopes. Outcrops of shale do not occur naturally on the surface. They may occur, however, where soils have been removed.

4.4 Geology and Soils

The department of environment soil map shows the site is within a Blacktown Soil Landscape characterised by gently undulating rises on Wianamatta Group shales. Local relief to 30 m, slopes usually >5%. Broad rounded crests and ridges with gently inclined slopes. Cleared Eucalypt woodland and tall open-forest (dry schlerophyll forest). Soils generally consist of friable brownish black loam transitioning to moderately to light grey plastic mottled clay.

4.5 Surface Water Hydrology

No groundwater or distinct overland flow paths were noted during the investigation. Stormwater is expected to infiltrate into soils or sheet south into the stormwater drainage system at Mount Vernon Road.

4.6 Hydrogeology

A search of the State Department of Primary Industries Groundwater map showed no groundwater works within 500m of the site.

4.7 Acid Sulphate Soils

The NSW Planning Portal shows the site within the boundary of being within Class 5 Acid Sulfate Soils Risk. Therefore, acid sulfate soils are not typically found in Class 5 areas and areas classified as Class 5 are located within 500 metres on adjacent class 1, 2, 3 or 4 land.

According to Atlas of Australian Acid Sulfate Soils, Appendix E, Lotsearch (page 144), the site is within an Extremely Low (1-5%) area of probability for the occurrence of acid sulfate soils, therefore a preliminary hydrology study in accordance with the ASSMAC Assessment Guidelines 1998 was not undertaken as part of this investigation. Also, as the proposed development will not alter the water table level of the zone during earthworks & construction, further assessment or action was not required.

5. CONCEPTUAL SITE MODEL (CSM)

5.1 Areas of Concern

- Previous historical site use as a market garden has the potential for OC/OP Pesticides to be impacting soils onsite
- Previously existing residential building and sheds originally constructed in an era to have comprised potentially hazardous building materials and incorrectly demolished
- Potentially unvalidated stockpiles onsite comprised of unknown building materials and
- The underlying soils onsite have the potential to be comprised of unknown fill material.

Table 2 identifies the main Areas of Environmental Concern (AECs), and their associated Contaminants of Concern (COCs), using the information gathered through this assessment and qualitative judgement based on consultant experience.

Table 2: Areas of Environmental Concern *(*Derived from AS 4482.1-2005 and consultant experience).*

AEC	Potentially Contaminating Activity	Contaminants of Concern	Likelihood of Contamination**
Historical market garden site usage	Potential Pesticides impacting soils.	• OC/OP Pesticides	Possible.
Previously existing residential buildings and sheds	Originally constructed in an era to contain hazardous building materials and incorrectly demolished.	• Asbestos and • Heavy Metals.	Possible.
Stockpiles of soil and building material onsite.	Stockpiles containing unknown materials.	• Asbestos • Heavy Metals • Hydrocarbons and • OC/OP Pesticides.	Possible.
Underlying soils potentially comprised of fill material.	Potentially contaminated fill material.	• Asbestos • Heavy Metals • Hydrocarbons and • OC/OP Pesticides.	Possible.

5.2 Human Receptors and Sensitive Environments

On-site Human Receptors & Sensitive Environments:

- Construction workers during the excavation / construction process
- Future occupants of the site including Childcare staff and children
- Native vegetation within the site.

Off-site Human Receptors & Sensitive Environments:

- Surrounding rural residential properties
- Ropes Creek 1km northeast of the site
- Adjacent neighbouring dam 80m east of the site

5.3 Potential for Migration and Exposure of Contaminants

Site history information and onsite inspection observations indicated that due to the unsealed and open space condition of the site there may be a potential for contaminants to provide exposure risks to humans and native vegetation within the site.

Exposure routes of contaminants could potentially be through direct dermal contact with exposed underlying soils (Heavy Metals, TPH and PAHs) or airborne dust (Asbestos) and vapour (Phenols and VOCs). These exposure risks will potentially be most likely, and potentially at its highest risk during any earthworks or construction phases within the site.

There is also a potential for these contaminates to be present within stockpiled soils and underlying soils and have the ability to migrate vertically (dispersed up into the atmosphere, or infiltrate down into the groundwater), uptake by vegetation and/or migrate horizontally (through stormwater runoff pathways) from the proposed development, that will likely collect into the Mount Vernon stormwater system.

6. SITE RECORDS

A search of 110-112 Mount Vernon Road, Mount Vernon NSW 2178 on the following records was undertaken by Jack Hinchliffe. A full list of recorded sites within a 1 km radius is provided within (Appendix A).

6.1 List of NSW Contaminated Sites - Notified to the EPA

- No records in buffer.

6.2 List of NSW Contaminated Sites - Record of Notices

- No records in buffer.

6.3 National Waste Management Site Database

- No records in buffer.

6.4 List of Current EPA Licensed Activities

- No records in buffer.

6.5 Delicensed Activities still regulated by the EPA

- No records in buffer.

6.6 Former Licensed Activities under the POEO Act 1997 now surrendered

- Licence # 4653. Luhrman Environment Management PTY LTD – Location: Waterways Through NSW – Other Activities / Non-Scheduled Activity - Application of Herbicides – Distance: 79m.
- Licence # 4838. Robert Orchard LTD – Location: Various Waterways Throughout NSW – Sydney 2000 – Other Activities / Non-Scheduled Activity - Application of Herbicides – Distance: 79m;
- Licence # 5150. Fairfield City Council – Location: Waterways of Fairfield City Council, Fairfield NSW 2165 – Other Activities / Non-Scheduled Activity - Application of Herbicides – Distance: 79m; and
- Licence # 6630. Sydney Weed and Pest Management Pty Ltd – Location: Waterways throughout NSW, Pest Management Pty Ltd – Other Activities / Non-Scheduled Activity - Application of Herbicides – Distance: 79m.

6.7 Historical Business Directories Premise Match

- No records in buffer.

6.8 Historical Business Directories Road Match

- No records in buffer.

6.9 Section 10.7 Certificate

- A search of the section 10.7 certificate has not been undertaken. A review of the certificate with regards to Matters arising under the Contaminated Land Management Act 1997 and the Contaminated Land Management Amendment Act 2008 should be undertaken concurrently with the review of this report.

7. SITE HISTORY

7.1 Aerial Photographs

A review of aerial photographs provided by Lotsearch (Appendix A) was undertaken. The results of which are summarized in Table 3.

Table 3: Findings of the historical photograph review.

Year	Description
1955	• Low resolution black and white photo; • Site appears to be an empty land. • No residential building in any direction of site. • Surrounding area is all empty land.
1961	• Low resolution black and white photo; • Shed present at north-eastern portion of site. • A dam is present along the western boundary of site. • Roads now bisect the site to access areas surrounding the site. • six dams look to surround the property in the north, north-west, and east direction.
1965	• Low resolution black and white photo; • A market garden along the western boundary and along the northern boundary. • Buildings to the south-west and west of site have been constructed.
1970	• Low resolution black and white photo; • Majority of site is now comprised of market gardens. • Residential buildings surround the east, south and west of site. • A few outbuildings have been constructed on site at the north-eastern area of site.
1982	• Moderate resolution colour photo; • Building at the front of property has been constructed. • More residential dwellings have been constructed around the site. • Sheds at north-eastern portion of site have been demolished and replaced by a new development. • Site appears to be no longer utilised as a market garden. • Site appears to be connected to property north of site.
1991	• Moderate resolution colour photo; • Commercial planting equipment looks to be installed to the property in the west direction. • Land to the north is still unoccupied • No major changes to the site.
2004	• High resolution colour photo;

	• Empty land in the north has been used with the construction of residential buildings. • Commercial equipment in the west has been removed and subdivided with a residential building being constructed on it. • Property directly behind the site in the north has been reconstructed. • Site has been separated from northern property.
2009	• High resolution colour photo; • Site is once again utilised as a market garden at northern half of site. • Property to the south west landscape has been altered.

7.2 Information Gaps

A site history has been established using the various sources as outlined above. However, the following information gaps have been identified:

1. Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer 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;
2. Inferences have been drawn based on 'point in time' aerial photographs;
3. No information pertaining to the site pre-1955 was available; and

Regarding the information available, it is considered that the quality of the information is consistent the industry standard and that the information is of high integrity with respect to the historical use of the site overall.

8. SOIL SAMPLING AND ANALYSIS

8.1 Data Quality Objectives

Data quality objectives were established for the site characterisation works, following the decision-making procedures outlined in NEPC (2013):

1. Define the problem
2. Identify the decision
3. Identify inputs to the decision
4. Define the study boundaries
5. Develop a decision rule
6. Specify limits on decision errors and
7. Optimise the design for obtaining data.

8.2 Define the Problem

The underlying soils onsite have the potential to be impacted by previous historical land use as a market garden and the potential incorrect demolition of a previously existing residential building and sheds originally constructed in an era to have comprised potentially hazardous building materials. As well as the current potentially unvalidated stockpiles onsite comprised of unknown building materials and underlying soils onsite being comprised of unknown and potentially contaminated fill material.

8.3 Identify the Decision

Based on the decision-making process for assessing urban redevelopment sites, the following decisions must be made:

1. Are there any unacceptable health risks to future onsite receptors?
2. Are there any unacceptable ecological risks posed by the site?
3. Are there any aesthetic issues at the site?
4. Is there any evidence of, or potential for, migration of contaminants from the site?
5. Is a site management strategy required?

8.4 Identify Inputs to the Decision

The following inputs were used to allow the assessment of the decisions:

1. Historical information
2. Observations made during site investigations
3. Soil analytical data from samples collected on site
4. Adopted site assessment criteria and
5. Data quality indicators.

8.5 Define the Study Boundaries

The study site is 110-112 Mount Vernon Road, Mount Vernon NSW 2178 (Lot 4 DP865818) (Figure 1). It can be identified as an irregularly shaped rectangular allotment.

8.6 Develop a Decision Rule

Soil analytical data were assessed against National Environmental Protection Measure (NEPM) criteria as identified in Section 8. Statistical analysis of the data will be undertaken if necessary. The following statistical criteria shall be adopted:

1. The upper 95% confidence limit on the average concentration for each analyte (calculated for samples collected from consistent soil horizons, stratigraphy or material types) must be below the adopted criterion;
2. No single analyte shall exceed 250% of the adopted criterion; and
3. The standard deviation of the results must be below 50 % of the criterion.

The acceptable limits for laboratory QA/QC parameters are shown in the table below and are based upon the laboratory reported acceptable limits and those stated within the NEPM 2013 Schedule B3 Guideline & AS 4482.1-2005.

Type of QC Sample	Control Limit
FIELD	
Rinsate Blanks	Analytes <LOR
Intra-Laboratory Duplicates	RPD's < 30 - 50%
Inter-Laboratory Duplicates	RPD's < 30 - 50%
Trip Blanks	Volatiles <LOR
Trip Spike Recovery	>70%
LABORATORY	
Method Blanks	< Laboratory LOR
Matrix Spike	Recovery targets: • Metals: 70% to 130% • Organics: 60% to 140%
Laboratory Duplicate	RPD's <30%
Laboratory Control Samples	Recovery targets: 70% to 130%
Surrogate Spike	Recovery targets: 60% to 140%

The following conditions should be adopted:

- If the control limits are exceeded, then an assessment of the significance of the results should be carried out;
- If major non-conformances from the laboratory or field data are identified, then further sampling and laboratory analysis may be required to provide an adequate sample set for data reliance;

- If the results of the DQI assessment indicate that the data set is reliable, then the data set will be deemed to be acceptable for the purposes of the validation works; and
- If the measured concentrations of soil, groundwater and soil vapour samples analysed meet their respective validation criteria, then no additional remediation is required.

8.7 Specify Limits of Decision Errors

The usual null hypothesis for remediation of contamination is that the land has unacceptable risk from residual contamination, and this hypothesis is able to be accepted at a 95% confidence level, giving a 5% risk of a Type I error (site is deemed suitable when it is not).

An assessment of the likelihood of a decision error will be made based on:

- The acceptable limits for inter/intra laboratory duplicate sample comparisons as specified in Step 5 of the DQOs; and
- The acceptable limits for laboratory QA/QC parameters are based upon the laboratory reported acceptable limits and those stated within the NEPM 2013 Schedule B3 Guideline & AS 4482.1-2005.

If the concentration of a particular contaminant of concern exceeds its remediation/validation criteria, then a further assessment is required to address the significance of the result. Statistical analysis (arithmetic mean) based on 95% UCL may be used to assess the significance of the data provided the following conditions are met:

- the 95%ucl of the arithmetic mean must be less than the criterion;
- the standard deviation of the data set is less than 50% of the relevant threshold level; and
- no individual sample result should be greater than 250% of the relevant threshold level.

8.8 Optimize Design for Obtaining Data

Based on the available information, a targeted sampling plan was considered most appropriate to provide sufficient characterisation data. An initial total of twenty-one (21) test pits were nominated across the area of investigation (Figure 3) analysed for Asbestos, Heavy Metals, Hydrocarbons and OC/OP Pesticides.

The optimum design for obtaining data in order to achieve the Data Quality Objectives is as follows:

- Only NATA-accredited environmental testing laboratories will be commissioned to analyse soil samples and will implement a quality control plan conforming to the NEPM (Assessment of Site Contamination) Measure Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils;
- Assessment of the Data Quality Indicators to determine if the field procedures and laboratory analytical results are reliable; and
- Field sampling works will be carried out by an experienced and qualified Environmental Scientist in accordance with Envirotech protocols, based on National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 Schedules B1, B2, B4, B6 & B9 and other NSW EPA endorsed guidelines.

8.9 Soil Sample Methodology

Soil samples were collected on Tuesday 26th March 2018 via test pitting. Samples were collected from approximately 0 - 500 mm depth using a simple mattock. No Groundwater was encountered in soil profile samples. Asbestos grab samples were taken by carefully removing soil within test pits. The depth of sampling across the site was limited to the top 500mm of soils, to ensure adequate coverage of the average depths of fill material across the entire site.

During the collection of soil samples, any features such as seepage, discoloration, staining, odours, or other physical indicators of contamination were noted. All site work was undertaken by Jack Hinchliffe, Environmental Scientist of Envirotech. Soil Samples were transferred directly from the test pits into laboratory supplied 250 mL sample jars sealed with Teflon lids. Asbestos samples were collected in asbestos sample bags and zip locked. The samples were stored in a chilled esky and transferred to ALS Environmental Division under stringent chain of custody (COC) procedures.

The decontamination of non-dedicated sampling equipment was achieved by washing with phosphate-free detergent and tap water, followed by a final rinse with distilled water. Decontamination was conducted after the collection of samples at each sample location. A clean pair of disposable gloves was used when handling each sample. The hand augers were decontaminated between sampling locations by physically removing soil material between boreholes, washing the augers with Decon 90 and rinsing them with water.

8.10 Laboratory Analysis

The laboratory used for the analysis of all samples was ALS Environmental located at 277-289 Woodpark Road, Smithfield NSW Australia. The laboratory is NATA accredited for the selected analyses. The completed analysis schedule is summarised in Table 4 below providing a diverse range of analytes:

Table 4: Analytical Schedule.

Sample ID	Location	Analytes
TP1-21	Top 500mm of potential fill material around the area of investigation (Figure 3).	• Heavy Metals • Hydrocarbons • OC/OPs
ASB1-6	Top 500mm within the footprints of demolished house and sheds onsite (Figure 3).	• Asbestos

Figure 3: Site sampling plan showing location of the twenty-one (21) test pits (yellow) with the concurrent asbestos sampling (blue). (enhanced image Appendix B).

Table 5: Sampling locations collected 26.03.2019

Borehole Number	Soil Description	Sample Depth (m)	Latitude	Longitude
TP1	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.8611493949	150.812207381
TP2	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.861606426	150.811976711
TP3	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.861552972	150.811845283
TP4	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.861479472	150.811618636
TP5	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.861611994	150.811546217
TP6	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.861677699	150.812039743
TP7	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.96180688	150.811992805
TP8	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.861913789	150.811945866
TP9	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.861937175	150.811834554
TP10	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.861811335	150.811687033
TP11	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.8618613	150.811476479

TP12	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.862084174	150.811888198
TP13	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.862129833	150.811573039
TP14	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.862078606	150.811398695
TP15	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.862230059	150.811267267
TP16	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.862316922	150.811585109
TP17	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.862521829	150.811637412
TP18	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.862634304	150.811547558
TP19	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.862624282	150.811328958
TP20	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.862496215	150.811189483
TP21	FILL: LOAM; mid brown to dark brown loam to clay loam with inclusions of rock, gravels and vegetation matter followed by: NATURAL; LIGHT CLAY; mottled brown at depth (500mm)	0.5	-33.86273453	150.81156231

9. SITE ASSESSMENT CRITERIA

Concentrations of contaminants in soil samples were compared against the National Environmental Protection Council (2013) site assessment criteria presented below and summarised in Table 5:

1. *Health Investigation Levels (HIL) for Soil Contaminants – NEPM HIL A; Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.*
2. *Soil Health Screening Levels (HSL) for Vapour Intrusion – Residential A & B;*
3. *NEPM 2013 Management Limits for TRH Fractions F1-F4 in Soil - Residential, Parkland and Public Open Space (Fine Grained Soils).*
4. *Health Screening Levels for Asbestos Contamination in Soil – Commercial/Industrial, Guidelines for the Assessment, Remediation and Management Asbestos-Contaminated sites in Western Australia*
5. *CCME: Soil Quality Guidelines for the Protection of Environmental and Human Health Agricultural, Residential/Parkland, Commercial and Industrial*
6. *Assessment levels for Soil, Sediment and Water – Department of Environment and Conservation 2010*
7. *Interim Ecological Soil Screening Level – United States Environmental Protection Agency 2005*

Table 5: Adopted Human Health Based Soil Criteria and Hydrocarbon Management Limits (all units in mg/kg)

	Limit of Reporting	Health Screening Levels	Environmental Screening Levels	Management Limits
METALS AND INORGANICS				
Arsenic	5.0	100	100	-
Cadmium	1.0	20	-	-
Chromium	2.0	100	-	-
Copper	5.0	6,000	-	-
Nickel	2.0	400	-	-
Lead	5.0	300	-	-
Zinc	5.0	7,400	-	-
Mercury	0.1	40	-	-
PAH				
BaP (TEQ)	0.5	3	0.7	-
Total PAH	0.5	300		-
BTEX				
Benzene	0.2	0.6	65	-
Toluene	0.5	390	105	-
Total Xylenes	0.5	95	45	-
Naphthalene	1	4	170	-

PHENOLS				
Phenol	0.5	3,000	-	-
Pentachlorophenol	2.0	100	-	-
Cresols	0.5	400	-	-
TRH				
F1 C6 – C10	10	230	180	800
F2 > C10 – C16	50	180	120	1,000
F3 > C16 – C34	100	-	1300	3,500
F4 > C34 – C40	50	-	5600	10,000
ASBESTOS				
Bonded ACM	0.01%		0.01%	
Friable ACM	0.001%		0.001%	
Visible ACM			No visible ACM	
OC AND OP PESTICIDES				
DDT+DDE+DDD	0.05	240	-	
Aldrin and dieldrin	0.05	6	-	
Chlordane	0.05	50	-	
Endosulfan	0.05	270	-	
Endrin	0.05	10	-	
Heptachlor	0.05	6	-	
HCB	0.05	10	-	
Methoxychlor	0.05	300	-	
Mirex	0.05	10	-	
Toxaphene	0.05	20	-	

10. QUALITY ASSURANCE / QUALITY CONTROL

10.1 Site Procedures

The following field quality assurance and quality control measures were implemented:

1. All sample jars and sample bags were clearly labelled prior to site visit;
2. All soil samples were collected by hand (after shallow excavation using a clean mattock);
3. Disposable gloves were worn throughout the process and changed between the collection of each soil sample;
4. All sampled jars and bags were immediately placed in an ice-block chilled esky;
5. All samples were clearly labelled and sealed for couriering;
6. The ALS Environmental chain-of-custody form was completed and emailed to the lab as well as a hard copy placed with the samples;
7. All samples were kept in the office of Envirotech Pty Ltd until collected by courier; and
8. Ice-blocks were interchanged prior to couriering.

10.2 Laboratory

The following is an extract from the quote for service provided by ALS Environmental Division.

"ALS has a comprehensive QA/QC program. Our QA/QC procedures are designed to provide reliable and defensible analytical results. Our analytical services are based on internal QCS3 schedule, which includes Laboratory Control Samples (LCS), Method Blanks (MB), Matrix Spikes (MS), Laboratory Duplicates (Dups) and Surrogates (for target organics) where applicable, at frequencies at or above that detailed in the 1999 NEPM guidelines.

The basis of the QCS3 Schedule is the 'analytical lot' (process analytical batch) of samples. Generally, the laboratory processes samples of similar matrices in groups called 'Lots'. 'Lots' are made up of 20 samples that may consist of several discrete batches and may be independent of project and / or client. The selection of samples for QC purposes will be biased towards the larger batches within the process lot" ...

The following summarizes the frequency that QC samples are processed:

1. 5% Method Blanks (MB) –1 analyzed within each process lot of 20 samples.
2. 10% Laboratory Duplicates (Dups) –2 analyzed within each process lot of 20 samples.
3. 5% Laboratory Control Samples (LCS) –1 analyzed within each process lot of 20 samples.
4. 5% Matrix Spikes (MS) – 1 analyzed within each process lot of 20 samples (except for dioxins).
5. Surrogate Spikes on all 'target' organics analyses.

10.3 QA/QC Results

10.3.1 Site

1. All soil samples arrived at ALS Environmental within specified holding times;
2. All soil samples arrived at ALS Environmental within specified temperature requirements;
3. No potential OHS incidents were recorded on site;
4. No quality assurance incidents (such as cross contamination or similar) were recorded.
5. The RPDs for all analytes (for the sampling set 26th March 2019) were within their respective control limits. Therefore, the data set is considered to be adequately precise.

10.3.2 Lab

ALS Environmental Division provided a Quality Control Report and Interpretive Quality Control Report (Appendix C) Those Quality Control Reports contain the following information:

1. A Laboratory Duplicate (DUP) Report - referring to a randomly selected intra-laboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. For all matrices, no Duplicate outliers occurred.
2. A Method Blank (MB) Report - referring 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. For all matrices, no Method Blank outliers occurred.
3. Laboratory Control Spike (LCS) Report - referring 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. For all matrices, no Laboratory Control outliers occurred.
4. A Matrix Spike (MS) Report – referring to an intra-laboratory 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. For all matrices, no Matrix Spike outliers occurred.
5. An Analysis Holding Time Compliance Report - No Analysis Holding Time outliers exist.
6. A Frequency of Quality Control Samples Report - No Quality Control Frequency Outliers exist.

10.4 QA/QC Conclusions

The field sampling and handling procedures across the site produced QA/QC results which indicate that the soil data collected is of acceptable quality and suitable for use in site characterisation.

The NATA certified laboratory reports indicate that the laboratory was generally achieving levels of performance within its recommended control limits during the period when the samples from this program were analyzed.

On this basis of the results and the laboratory QA/QC program, the soil data is of an acceptable quality upon which to draw conclusions regarding the environmental condition of the site.

11. RESULTS

11.2 Soil Laboratory Results

Detailed laboratory reports and chain of custody documentation are provided in Appendix C. Laboratory results are summarized in Tables 6 and 7 and discussed in the following sections in relation to the adopted assessment criteria. The results were as follows:

1. Heavy Metals: All samples were reported by the laboratory to have concentrations **BELOW** the adopted site assessment criteria.
2. TRH: All samples were reported by the laboratory to have concentrations **BELOW** the adopted site assessment criteria.
3. BTEX: All samples were reported by the laboratory to have concentrations **BELOW** the adopted site assessment criteria.
4. PAH: All samples were reported by the laboratory to have concentrations **BELOW** the adopted site assessment criteria.
5. OC/OP Pesticides: All samples were reported by the laboratory to have concentrations **BELOW** the adopted site assessment criteria.
6. Phenols: All samples were reported by the laboratory to have concentrations **BELOW** the adopted site assessment criteria.
7. Asbestos: Asbestos was **PRESENT** in four (4) of the six (6) samples in the form of ACM:
    - **TP6/ASB1 (0-0.5m): Chrysotile Asbestos & Amosite Asbestos presence**
        i. BONDED (Three pieces of asbestos cement sheeting approx. 50 x 40 x 5mm)
    - **TP7/ASB2 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
        i. BONDED (Three pieces of asbestos cement sheeting approx. 60 x 50 x 5mm)
    - **TP8/ASB3 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
        i. BONDED (One piece of asbestos cement sheeting approx. 80 x 30 x 5mm)
    - **TP19/ASB6 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
        i. BONDED (Two larger pieces of asbestos cement sheeting approx. 80 x 40 x 5mm and one smaller piece of asbestos cement sheeting approx. 5 x 4 x 3mm)

Table 6: Schedule of Laboratory Testing

TABLE A
SCHEDULE OF LABORATORY TESTING

Analyte / Analyte Group / Sample	Depth (m)	TYPE	SAMPLING DATE	DUPLICATE	MET-8	TPH & BTEX	PAH	OCP	PCB	PHENOLS	ASBESTOS
TP1	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP2	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP3	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP4	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP5	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP6	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	✔
TP7	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	✔
TP8	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	✔
TP9	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP10	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP11	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP12	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP13	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP14	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP15	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP16	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP17	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	✔
TP18	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	✔
TP19	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	✔
TP20	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	
TP21	0 - 0.5	F	26.03.2019		✔	✔	✔	✔	✔	✔	

Notes
MET-8: arsenic, cadmium, chromium, copper, lead, mercury,
OCP : Organochlorine Pesticides
PCB : Polychlorinated Biphenyls
PAH: Polycyclic Aromatic Hydrocarbons
TPH: Total Petroleum Hydrcarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Xylene
F,T,N: Fill, Topsoil, Natural

**Please note: No duplicate, split, rinsate, trip blank or field blank samples were collected during the initial site inspection on 26th March 2019. No explanation can be provided as all staff members associated with the works during the initial site inspection are no longer with the company. However due to non-exceedances of all samples against their site assessment criteria, it is presumed that RPDs for the majority of analysts would had been within their respective control limits.*

***Please note: No rinsate samples was collected during the site inspection on 26th March 2019, as all samples were presumed to be collected by hand using nitrite disposable gloves and placed directly into the sampling containers. New gloves were presumed to be used between each sampling depth and sampling location.*

Table 7: Summary of Test Results – Sub Tables B-E

TABLE B

HEAVY METALS TEST RESULTS FOR HILs & ESLs

Analyte / Sample Location	Date Sampled	Depth (m)	HEAVY METALS (mg/kg) ARSENIC	CADMIUM	CHROMIUM (VI)	COPPER	MERCURY	NICKEL	LEAD [g]	ZINC
TP1	26.03.2019	0 - 0.5	6	< 1	23	20	< 0.1	12	22	91
TP2	26.03.2019	0 - 0.5	< 5	< 1	18	27	< 0.1	8	14	46
TP3	26.03.2019	0 - 0.5	9	< 1	24	24	< 0.1	8	18	48
TP4	26.03.2019	0 - 0.5	7	< 1	21	22	< 0.1	12	19	64
TP5	26.03.2019	0 - 0.5	5	< 1	19	29	< 0.1	13	20	138
TP6	26.03.2019	0 - 0.5	< 5	< 1	18	33	< 0.1	16	19	124
TP7	26.03.2019	0 - 0.5	10	< 1	26	19	< 0.1	12	20	44
TP8	26.03.2019	0 - 0.5	8	< 1	17	17	< 0.1	12	16	136
TP9	26.03.2019	0 - 0.5	6	< 1	16	29	< 0.1	13	12	86
TP10	26.03.2019	0 - 0.5	8	< 1	19	16	< 0.1	11	28	145
TP11	26.03.2019	0 - 0.5	< 5	< 1	15	16	< 0.1	10	36	109
TP12	26.03.2019	0 - 0.5	6	< 1	15	17	< 0.1	10	35	96
TP13	26.03.2019	0 - 0.5	8	< 1	30	22	< 0.1	10	22	51
TP14	26.03.2019	0 - 0.5	8	< 1	18	19	< 0.1	10	15	45
TP15	26.03.2019	0 - 0.5	6	< 1	18	18	< 0.1	10	18	54
TP16	26.03.2019	0 - 0.5	19	< 1	21	47	0.1	13	61	449
TP17	26.03.2019	0 - 0.5	< 5	< 1	9	32	< 0.1	16	13	61
TP18	26.03.2019	0 - 0.5	6	< 1	18	12	< 0.1	6	14	28
TP19	26.03.2019	0 - 0.5	6	< 1	20	15	< 0.1	8	18	58
TP20	26.03.2019	0 - 0.5	6	< 1	21	15	< 0.1	12	20	45
TP21	26.03.2019	0 - 0.5	19	< 1	30	62	0.3	9	87	289
Practical Quantitation Limits (PQL)			5	1	2	5	0.1	2	5	5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)										
Health Investigation Levels (HIL) - Table 1A (1)										
HIL A [a]			100	20	100	6000	40[e] / 10[f]	400	300	7400
HIL B [b]			500	150	500	30,000	120[e] / 30[f]	1200	1200	60,000
HIL C [c]			300	90	300	17,000	80[e] / 13[f]	1200	600	30,000
HIL D [d]			3000	900	3600	240,000	730[e] / 180[f]	6000	1500	400,000
Ecological Investigation Levels (EIL) - Table 1B (5)										
Areas of ecological significance			40[h]							
Urban residential and public open space [i]			100[h]							
Commercial and industrial			160[h]							

Notes

a: Residential with garden/accessible soil (home grown poduce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.

b: Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high rise buildings and apartments.

c: Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate

d: Commercial/industrial, includes premises such as shops, offices, factories and industrial sites

e: Elemental mercury: HIL does not address elemental mercury. A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,

f: Methyl mercury: assessment of methyl mercury should only occur where there is evidence of its potential source. It may be associated with inorganic mercury and anaerobic microorganism activity in aquatic environments. In addition the reliability and quality of sampling/analysis should be

g: Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered. Site-specific bioavailability may be important and should be considered where appropriate.

h: Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.

i: Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

TABLE C1
TOTAL RECOVERABLE HYDROCARBONS (TRH), BTEX AND NAPHTHALENE TEST RESULTS FOR HSLs IN CLAY

Analyte / Sample Location	Date Sampled	Depth (m)	TRH (mg/kg) F1 [a]	TRH (mg/kg) F2 [b]	BTEX (mg/kg) BENZENE	BTEX (mg/kg) TOLUENE	BTEX (mg/kg) ETHYL BENZENE	BTEX (mg/kg) TOTAL XYLENES	PAH (mg/kg) NAPHTHALENE
TP1	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP2	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP3	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP4	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP5	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP6	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP7	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP8	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP9	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP10	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP11	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP12	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP13	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP14	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP15	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP16	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP17	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP18	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP19	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP20	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
TP21	26.03.2019	0 - 0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
Practical Quantitation Limits (PQL)			10	50	0.2	0.5	0.5	0.5	1
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)									
Health Screening Levels (HSL) - Table 1A (3)									
HSL A & HSL B: Low-high density residential									
Source depth - 0m to <1m			50	280	0.7	480	NL	110	5
Source depth - 1m to <2m			90	NL	1	NL	NL	310	NL
Source depth - 2m to <4m			150	NL	2	NL	NL	NL	NL
Source depth - 4m +			290	NL	3	NL	NL	NL	NL
HSL C: recreational / open space									
Source depth - 0m to <1m			NL	NL	NL	NL	NL	NL	NL
Source depth - 1m to <2m			NL	NL	NL	NL	NL	NL	NL
Source depth - 2m to <4m			NL	NL	NL	NL	NL	NL	NL
Source depth - 4m +			NL	NL	NL	NL	NL	NL	NL
HSL D: Commercial / Industrial									
Source depth - 0m to <1m			310	NL	4	NL	NL	NL	NL
Source depth - 1m to <2m			480	NL	6	NL	NL	NL	NL
Source depth - 2m to <4m			NL	NL	9	NL	NL	NL	NL
Source depth - 4m +			NL	NL	20	NL	NL	NL	NL

Notes a: To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.
b: To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.
NL: Not Limiting

TABLE C2
TOTAL RECOVERABLE HYDROCARBONS (TRH), BTEX AND BENZO(a)PYRENE TEST RESULTS
ESLs FOR COARSE GRAINED SOIL TEXTURE

Analyte / Sample Location	Date Sampled	Depth (m)	TRH (mg/kg) F1 (C_6-C_{10}) [a]	TRH (mg/kg) F2 (>C_{10}-C_{16}) [b]	TRH (mg/kg) F3 (C_{16}-C_{34})	TRH (mg/kg) F4 (C_{34}-C_{40})	BTEX (mg/kg) BENZENE	BTEX (mg/kg) TOLUENE	BTEX (mg/kg) ETHYL BENZENE	BTEX (mg/kg) TOTAL XYLENES	PAH (mg/kg) BENZO(a)PYRENE
TP1	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP2	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP3	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP4	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP5	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP6	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP7	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP8	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP9	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP10	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP11	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP12	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP13	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP14	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP15	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP16	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP17	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP18	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP19	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP20	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
TP21	26.03.2019	0 - 0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
Practical Quantitation Limits (PQL)			10	50	100	100	0.2	0.5	0.5	0.5	0.5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)											
Ecological Screening Levels (ESL) - Table 1B											
Areas of ecological significance			125*	25*	-	-	10	10	1.5	10	0.7
Urban residential and public open space			180*	120*	300	2800	50	85	70	105	0.7
Commercial and industrial			215*	170*	1700	3300	75	135	165	180	0.7

Notes
a: To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.
b: To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.
*: ESLs are of low reliability except where indicated by * which indicates that the ESL is of
"-": "-" indicates that insufficient data was available to derive a value.

TABLE C3
TOTAL RECOVERABLE HYDROCARBONS (TRH) TEST RESULTS
MANAGEMENT LIMITS FOR COARSE GRAINED SOIL TEXTURE

Analyte / Sample Location	Date Sampled	Depth (m)	TRH (mg/kg) F1 (C_6-C_{10}) [a]	F2 (>C_{10}-C_{16}) [a]	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{40})
TP1	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP2	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP3	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP4	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP5	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP6	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP7	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP8	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP9	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP10	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP11	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP12	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP13	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP14	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP15	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP16	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP17	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP18	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP19	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP20	26.03.2019	0 - 0.5	<10	<50	<100	<100
TP21	26.03.2019	0 - 0.5	<10	<50	<100	<100
Practical Quantitation Limits (PQL)			10	50	100	100
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)						
Management Limits - Table 1B (7)						
Residential parkland and public open space			700	1000	2500	10,000
Commercial and industrial			700	1000	3500	10,000

Notes
a: Separate management limits for BTEX and naphthalene are not available hence these should not be subtracted from the relevant fractions to obtain F1 and F2.
b: Management limits are applied after consideration of relevant ESLs and

TABLE D

POLYCYCLIC AROMATIC HYDROCARBONS (PAH), ORGANOCHLORINE PESTICIDES (OCP), POLYCHLORINATED BIPHENYLS (PCB), PHENOLS TEST RESULTS FOR HILs, EILs & ESLs

Analyte			PAH (mg/kg)				Organochlorine Pesticides (mg/kg)									Phenols (mg/kg)	
Sample Location	Date Sampled	Depth (m)	Carcinogenic PAHs (as BaP TEQ) [e]	TOTAL PAHs [f]	BENZO(a)PYRENE	NAPHTHALENE	DDT + DDE + DDD	ALDRIN & DIELDRIN	CHLORDANE	ENDOSULFAN	ENDRIN	HEPTACHLOR	HCB	METHOXYCHLOR	PCB [j]	PHENOL	PENTACHLOROPHENOL
TP1	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP2	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP3	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP4	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP5	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP6	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP7	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP8	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP9	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP10	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP11	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP12	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP13	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP14	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP15	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP16	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP17	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP18	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP19	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP20	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
TP21	26.03.2019	0 - 0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
Practical Quantitation Limits (PQL)			0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.1	0.5	2
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)																	
Health Investigation Levels (HIL) - Table 1A (1)																	
HIL A [a]			3	300			240	6	50	270	10	6	10	300	1	3000	100
HIL B [b]			4	400			600	10	90	400	20	10	15	500	1	45,000	130
HIL C [c]			3	300			400	10	70	340	20	10	10	400	1	40,000	120
HIL D [d]			40	4000			3600	45	530	2000	100	50	80	2500	7	240,000	660
Ecological Investigation Levels (EIL) - Table 1B																	
Areas of ecological significance						10 [g]	3 [g, k]										
Urban residential and public open space [h]						170 [g]	180 [g, k]										
Commercial and industrial						370 [g]	640 [g, k]										
Ecological Screening Levels (ESL) - Table 1B (6)																	
Areas of ecological significance					0.7 [i]												
Urban residential and public open space					0.7 [i]												
Commercial and industrial					0.7 [i]												

Notes

a: Residential with garden/accessible soil (home grown poduce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary

b: Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high rise buildings and apartments.

c: Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate.

d: Commercial/industrial, includes premises such as shops, offices, factories and industrial sites

e: Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by CCME 2008 (refer Schedule B7). The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF, given below, and summing these products.

PAH species	TEF	PAH species	TEF
Benzo(a)anthracen	0.1	Benzo(g,h,i)perylene	0.01
Benzo(a)pyrene	1	Chrysene	0.01
Benzo(b+j)fluoranthe	0.1	Dibenz(a,h)anthracene	1
Benzo(k)fluoranthe	0.1	Indeno(1,2,3-c,d)pyrene	0.1

Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk.

f: Total PAHs: HIL is based on the sum of the 16 PAHs most commonly reported for contaminated sites (WHO 1998). The application of the total PAH HIL should consider the presence of carcinogenic PAHs and naphthalene (the most volatile PAH). Carcinogenic PAHs reported in the total PAHs should meet the B(a)P TEQ HIL. Naphthalene reported in the total PAHs should meet the relevant HSL.

g: Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination should be used.

h: Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

i: For coarse and fine grained texture soils.

j: PCBs: HIL relates to non-dioxin-like PCBs only. Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCBs (including dioxin-like PCBs) should be undertaken.

k: For DDT only.

TABLE E
ASBESTOS TEST RESULTS

Analyte / Sample Location	Date Sampled	Depth (m)	Field Observations*	Laboratory Results Asbestos Type Present / Absent	Laboratory Results Asbestos %w/w
ASB1	26.03.2019	0 - 0.5	Fibre-cement fragment observed	**Chrysotile Asbestos + Amosite Asbestos present**	NT
ASB2	26.03.2019	0 - 0.5	Fibre-cement fragment observed	**Chrysotile Asbestos + Amosite Asbestos + Crocidolite Asbestos present**	NT
ASB3	26.03.2019	0 - 0.5	Fibre-cement fragment observed	**Chrysotile Asbestos + Amosite Asbestos + Crocidolite Asbestos present**	NT
ASB4	26.03.2019	0 - 0.5	No fibre-cement observed	No Asbestos detected	NT
ASB5	26.03.2019	0 - 0.5	No fibre-cement observed	No Asbestos detected	NT
ASB6	26.03.2019	0 - 0.5	Fibre-cement fragment observed	**Chrysotile Asbestos + Amosite Asbestos + Crocidolite Asbestos present**	NT

WA Guidelines for the Assessment, Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 **National Environment Protection (Assessment of Site Contamination) Measure 2013 Schedule B1**	
%w/w asbestos for FA and AF	0.001%
%w/w asbestos for ACM - Residential use, childcare centres, preschools etc.	0.01%
%w/w asbestos for ACM - Residential, minimal soil access (fully sealed surfaces)	0.04%
%w/w asbestos for ACM - Parks, public open spaces, playing fields etc.	0.02%
%w/w asbestos for ACM - Commercial / Industrial	0.05%

Note:
ACM = Asbestos Containing Materials >7mm x 7mm (visible by eye)
FA = Friable and Fibrous Asbestos Materials >7mm x 7mm (visible by eye)
AF = Asbestos Fines <7mm x 7mm ACM including free fibres (visible by microscope only)
* Field Observations: All fibro- cement fragments observed are assumed to contain Asbestos until otherwise tested and recorded as such.
NT = Not Tested

12. DISCUSSION

12.1 Soil Laboratory Results

All soil samples collected and tested (26th March 2019) were reported by the laboratory to have concentrations below the adopted site assessment criteria for HIL A, land use as per the NEPM, 2013, except for the following samples:

- **TP6/ASB1 (0-0.5m): Chrysotile Asbestos & Amosite Asbestos presence**
  - BONDED (Three pieces of asbestos cement sheeting approx. 50 x 40 x 5mm)
- **TP7/ASB2 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
  - BONDED (Three pieces of asbestos cement sheeting approx. 60 x 50 x 5mm)
- **TP8/ASB3 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
  - BONDED (One piece of asbestos cement sheeting approx. 80 x 30 x 5mm)
- **TP19/ASB6 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
  - BONDED (Two larger pieces of asbestos cement sheeting approx. 80 x 40 x 5mm and one smaller piece of asbestos cement sheeting approx. 5 x 4 x 3mm)

The asbestos detected are in the form of **BONDED ACM** materials – fragments of asbestos cement sheeting identified in the soil sample sampled between 0-500mm. It is anticipated that the source of the ACM was associated with the demolition of previous building structures within the vicinity of where the samples were collected. Also as indicated, the samples ASB1, ASB2, ASB3 and ASB6 were collected between 0-500mm depth, however from previous site inspections and experience the likelihood depth of the ACM is within the topsoil layers 0-100mm, as no indication of previous or historical backfilling of the site within these areas was noted from historical aerial photographs (Lotsearch or Nearmaps).

Please note that the asbestos samples were only tested for absence/presence, however a %w/w analysis is required to characterise the site as per regulatory guidelines and site assessment criteria, therefore it is recommended that additional sampling of these potential hotspot areas are required to justify the suitability of the site for the proposed development and land use.

Additionally, the stockpiled material within the southern portion of the site requires further characterisation to determine their suitability status. If the stockpiles have been removed then sampling of the stockpile footprint areas will be undertaken.

12.2 Potential Risks to Onsite Receptors

Human exposure to the potential contaminants identified is currently considered *Low* as:

- The site is privately owned
- The site is not publicly accessible
- The soils throughout site are currently exposed as grassland
- Asbestos Containing Materials are in the form of BONDED fragments pieces

- The majority of surface soils containing ACM fragment contaminants are confined to isolated areas within the site, and not widespread.

Human exposure to the potential contaminants identified would increase to Moderate-*High* following the commencement of any further earthworks and development exposing underlying soils and disturbance of overlying fragments of ACM.

12.3 Potential for Migration of Contaminants

The potential for migration is currently considered *Low* as the ACM contaminants are located within top-soils however may migrate downgradient due to further and continued heavy episodes of rainfall.

Migration potential for the ACM contaminants identified would increase to *Moderate-High* following the disruption of the top-soils and underlying soils and subsequent dust formation and stormwater runoff as a result of any potential excavations and construction.

Migration potential for the possible contaminants identified within the stockpile areas would increase to *Moderate-High* following the excavation of the stockpiles and subsequent dust formation, into adjacent site locations, as a result of excavation practices.

12.4 Conceptual Site Model

The refined Conceptual Site Model (CSM) is presented in the table below:

Potential Source	Potential Receptor	Potential Exposure Pathway	Complete Linkage	Risk	Justification
Asbestos in soils within TP6/ASB1, TP7/ASB2, TP8/ASB3 and TP19/ASB6 sampling location vicinity	Site users, maintenance workers, general public & surrounding residents	Inhalation	No, as long as the overlying soils is adequately maintained, and no excavation works that would expose underlying contaminated soils.	Low	Potential impacted soils with asbestos is currently from 0-500mm BGL.
Stockpiles of material (or footprint areas) within southern portion of the site	Site users, maintenance workers, general public & surrounding residents	Inhalation, dermal contact, ingestion	No, as long as the stockpiled soils and materials are adequately maintained, and no excavation works that would expose underlying contaminated soils.	Low	Potential impacted soils

12.5 Recommendations

As soil samples indicate the *presence of BONDED Asbestos*, within four (4) sampling locations, it is recommended that a suitably trained and qualified professional is engaged to prepare the following:

- Additional **Delineation Sampling** at and around the potentially asbestos hotspot areas of TP6/ASB1, TP7/ASB2, TP8/ASB3 and TP19/ASB6 to further characterise these potential areas of concern and to determine the lateral and vertical extent of the asbestos contamination according regulatory guidelines and site criteria.
- A **Visual Inspection** is to be undertaken of these areas by a SafeWork NSW Licensed Approved Asbestos Assessor to ensure no visible asbestos containing materials (ACM) are identified on surface soils and provide an Asbestos Clearance Certificate for the potential areas.

Also, to further characterise the site, the additional sampling is required:

- Additional **Stockpile Sampling** to further characterise the stockpiled soils within the southern portion of the site. If the stockpiles have been removed, then the stockpile footprint areas will be sampled to further characterise underlying soils.

Subject to the above, it is considered that the site can be remediated and made suitable for the intended proposed residential development, pending on the following Delineation Sampling, Visual Inspection and subsequent Remedial and Validation Works, if required.

13. CONCLUSIONS

Based on the data and evidence collected during the site inspection and site history review, the findings of the Detailed Site Investigation are as follows:

- On Tuesday 26th March 2019, a site inspection was conducted by Envirotech consultant Jack Hinchliffe;
- At the time of inspection, the site consisted of a fenced off unoccupied and empty property. The majority of the site was comprised of disused market gardens;
- At the north-eastern and southern portions of site were the footprint remains of sheds and a residential house that were previously demolished. Stockpiles were present at the southern portion of site;
- The following area of concern were identified:
    - Previous historical site use as a market garden has the potential for OC/OP Pesticides to be impacting soils onsite;
    - Previously existing residential building and sheds originally constructed in an era to have comprised potentially hazardous building materials and incorrectly demolished;
    - Potentially unvalidated stockpiles onsite comprised of unknown building materials;
    - The underlying soils onsite have the potential to be comprised of unknown fill material.
- The site was first developed before 1955;
- The site is not listed by the EPA;
- Based on the available information, a targeted and stratified sampling plan was considered most appropriate to provide sufficient characterisation data. A total of twenty-one (21) test pits were nominated across the area of investigation (Figure 3);
- Samples were analysed for Heavy Metals, Phenols, TRH, BTEX, PAH, Hydrocarbons, OC/OP Pesticides & Asbestos by ALS Environmental Division;
- Soil chemical concentrations were below the thresholds of the adopted human health and ecological assessment criteria for residential land use as specified under the NEPM (2013);

All soil samples collected and tested (26th March 2019) were reported by the laboratory to have concentrations below the adopted site assessment criteria for HIL A, land use as per the NEPM, 2013, except for the following samples:

- **TP6/ASB1 (0-0.5m): Chrysotile Asbestos & Amosite Asbestos presence**
    - BONDED (Three pieces of asbestos cement sheeting approx. 50 x 40 x 5mm)
- **TP7/ASB2 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
    - BONDED (Three pieces of asbestos cement sheeting approx. 60 x 50 x 5mm)
- **TP8/ASB3 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
    - BONDED (One piece of asbestos cement sheeting approx. 80 x 30 x 5mm)
- **TP19/ASB6 (0-0.5m): Chrysotile Asbestos, Amosite Asbestos & Crocidolite Asbestos presence**
    - BONDED (Two larger pieces of asbestos cement sheeting approx. 80 x 40 x 5mm and one smaller piece of asbestos cement sheeting approx. 5 x 4 x 3mm)

As soil samples indicate the *presence of BONDED Asbestos*, within four (4) sampling locations, it is recommended that a suitably trained and qualified professional is engaged to prepare the following:

- Additional **Delineation Sampling** at and around the potentially asbestos hotspot areas of TP6/ASB1, TP7/ASB2, TP8/ASB3 and TP19/ASB6 to further characterise these potential areas of concern and to determine the lateral and vertical extent of the asbestos contamination according regulatory guidelines and site criteria.
- A **Visual Inspection** is to be undertaken of these areas by a SafeWork NSW Licensed Approved Asbestos Assessor to ensure no visible asbestos containing materials (ACM) are identified on surface soils and provide an Asbestos Clearance Certificate for the potential areas.

Also, to further characterise the site, the additional sampling is required:

- Additional **Stockpile Sampling** to further characterise the stockpiled soils within the southern portion of the site. If the stockpiles have been removed, then the stockpile footprint areas will be sampled to further characterise underlying soils.

Details of the required additional works will be recommended within in the amended Envirotech RAP (REP: 19-7963-A1).

Subject to the above, it is considered that the site can be remediated and made suitable for the intended proposed residential development, pending on the following Delineation Sampling, Visual Inspection and subsequent Remedial and Validation Works, if required.

14. LIMITATIONS STATEMENT

EnviroTech Pty. Ltd. Pty. Ltd. has undertaken the following report in accordance with the scope of works set out between EnviroTech Pty. Ltd. and the client. EnviroTech Pty. Ltd. derived the data in this report primarily from the site and soil assessment conducted on the date of site inspection. The impacts of future events may require future investigation of the site and subsequent data analysis, together with a re-evaluation of the conclusions and recommendations of this report.

In preparing this report, EnviroTech Pty. Ltd has relied upon, and assumed accurate, certain site information provided by the client and other persons. Except as otherwise stated in the report, we have not attempted to verify the accuracy or completeness of any such information. EnviroTech Pty. Ltd. accepts no liability or responsibility whatsoever for or in respect to any use or reliance upon this report by any third party.

The information contained within this report have been prepared exclusively for the client. Envirotech have prepared the report to address the risk associated with scale of the works. The report has been prepared with a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia. No other warranty, expressed or implied, is made or intended. This report is to be read in its entirety including attachments and appendices and should not read in individual sections.

A third party should not rely upon the information prior to making an assessment that the scope of work conducted meets their specific needs. Envirotech cannot be held liable for third party reliance on this document.

Envirotech's professional opinions are based upon its professional judgment, experience, training and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and/or opinions. Envirotech Pty Ltd has limited its investigation to the scope agreed upon with its client.

15. REFERENCES AND LEGISLATION

- Protection of the Environment Operations Act (1997);
- Protection of the Environment Operations Regulation (2008);
- Contaminated Land Management Act (1998).
- Contaminated Land Management - Guidelines for the NSW Site Auditor Scheme (3rd Edition, 2017).
- State Environmental Planning Policy No.55 (SEPP55) – Remediation of Land (2018)
- NSW EPA Guidelines for Consultants Reporting on Contaminated Sites (2011).
- NSW EPA Sampling Design Guidelines (1995).
- NSW EPA Waste Classification Guidelines Part 1: Classifying Waste (2014).
- NSW EPA Guidelines for Assessing Former Orchards and Market Gardens (2005)
- Guidelines on the Investigation Levels for Soil and Groundwater, National Environmental Protection Measure 1999, 2013 Amendment (NEPC, 2013).
- Australian Standard AS 4482.1 Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.
- Australian Standard AS 4482.2 Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances.
- CRC CARE Technical Report No. 39: Risk-based remediation and management guidance for benzo(a)pyrene (2017).
- Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008 (NSW DECCW, 2009).
- Guidelines for the Assessment and Management of Groundwater Contamination (NSW DEC, 2007).
- Guidelines for the Assessment, Remediation & Management of Asbestos - Contaminated Sites (WA DOH, 2009).
- NSW Spatial Information Exchange (http://maps.six.nsw.gov.au/)
- Sutherland Shire Maps (https://www.sutherlandshire.nsw.gov.au/Development/Shire-Maps).

APPENDIX A: LOT SEARCH

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 27 Mar 2019 13:23:13

Reference: LS005574 EP

Address: 110-112 Mount Vernon Road, Mount Vernon, NSW 2178

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 code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise match	Georeferenced to the site location / premise or part of site
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

Dataset Listing

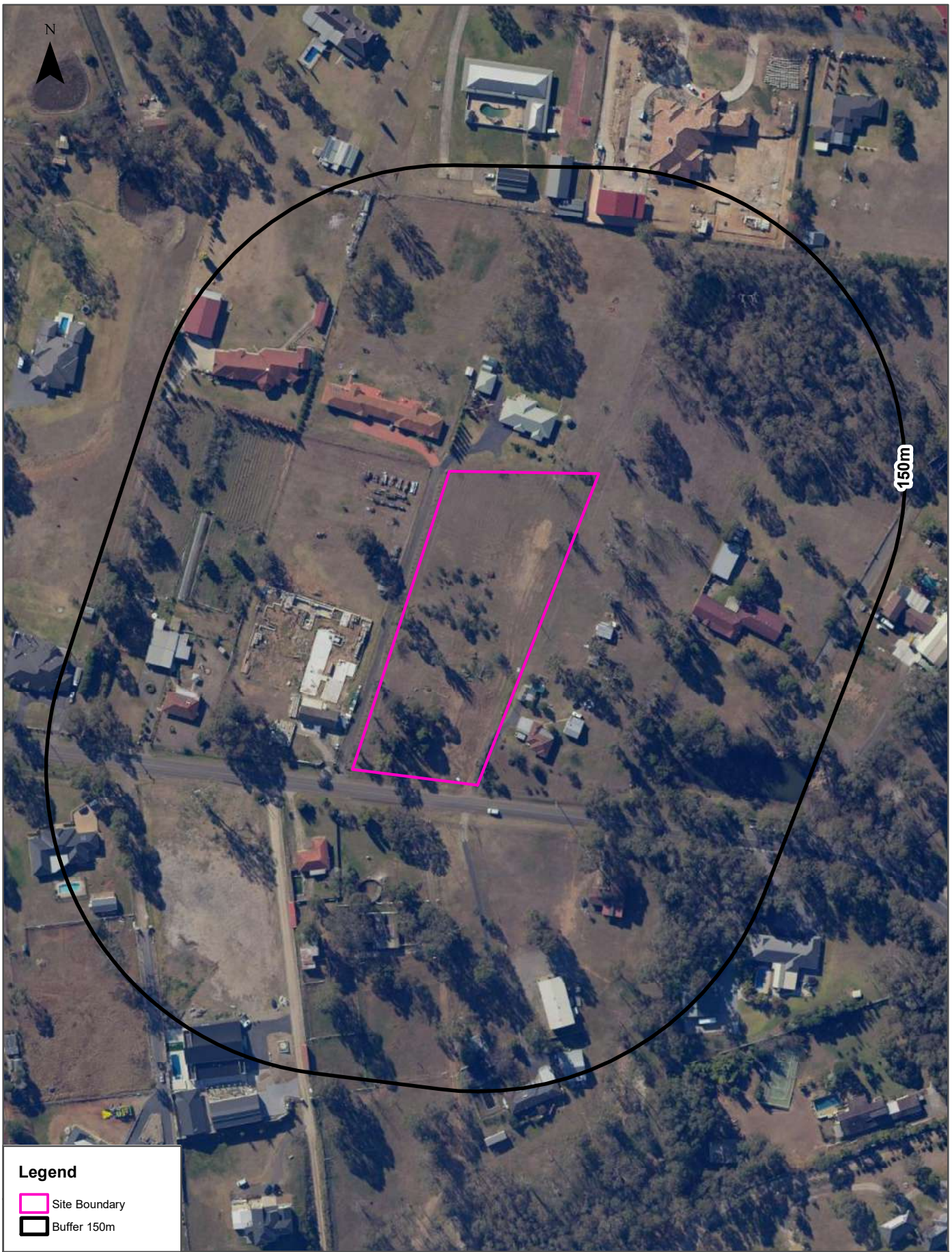
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Finance, Services & Innovation	27/03/2019	27/03/2019	Daily	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	11/01/2019	11/01/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	14/03/2019	20/02/2019	Monthly	1000	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	11/03/2019	11/03/2019	Monthly	1000	0	0	0
Former Gasworks	Environment Protection Authority	04/03/2019	11/10/2017	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	05/02/2019	07/03/2017	Quarterly	1000	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	04/03/2019	04/03/2019	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program	Department of Defence	14/03/2019	14/03/2019	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	11/03/2019	16/11/2018	Monthly	2000	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	13/12/2018	13/12/2018	Annually	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	26/03/2019	26/03/2019	Monthly	1000	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	26/03/2019	26/03/2019	Monthly	1000	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	26/03/2019	26/03/2019	Monthly	1000	0	4	4
UPSS Environmentally Sensitive Zones	Environment Protection Authority	14/04/2015	12/01/2010	As required	1000	0	0	1
UBD Business to Business Directory 1991 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business to Business Directory 1991 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business to Business Directory 1986 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business to Business Directory 1986 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1982 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1982 (Road & Area Matches)	Hardie Grant			Not required	150	-	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 1961 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1961 (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
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500	0	0	0
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500	-	0	0
Points of Interest	NSW Department of Finance, Services & Innovation	11/01/2019	11/01/2019	Quarterly	1000	0	0	2

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Tanks (Areas)	NSW Department of Finance, Services & Innovation	11/01/2019	11/01/2019	Quarterly	1000	0	0	0
Tanks (Points)	NSW Department of Finance, Services & Innovation	11/01/2019	11/01/2019	Quarterly	1000	0	0	0
Major Easements	NSW Department of Finance, Services & Innovation	11/01/2019	11/01/2019	Quarterly	1000	0	0	5
State Forest	NSW Department of Finance, Services & Innovation	18/01/2018	18/01/2018	As required	1000	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	16/01/2019	14/11/2018	Annually	1000	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	1	1	1
Botany Groundwater Management Zones	NSW Department of Primary Industries	15/03/2018	01/10/2005	As required	1000	0	0	0
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	0	0	8
Geological Units 1:100,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	1	-	2
Geological Structures 1:100,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	0	-	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	0	0	0
Soil Landscapes	NSW Office of Environment & Heritage	12/08/2014		None planned	1000	1	-	3
Atlas of Australian Soils	CSIRO	19/05/2017	17/02/2011	As required	1000	1	1	2
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning and Environment	19/03/2019	09/11/2018	Weekly	500	0		
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	1	1	2
Dryland Salinity Potential of Western Sydney	NSW Office of Environment & Heritage	12/05/2017	01/01/2002	None planned	1000	1	1	3
Mining Subsidence Districts	NSW Department of Finance, Services & Innovation	13/07/2017	01/07/2017	As required	1000	0	0	0
SEPP State Significant Precincts	NSW Department of Planning and Environment	19/03/2019	04/07/2104	Weekly	1000	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning and Environment	19/03/2019	08/02/2019	Weekly	1000	1	1	3
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
State Heritage Register - Curtilages	NSW Office of Environment & Heritage	16/01/2019	09/11/2018	Quarterly	1000	0	0	0
Environmental Planning Instrument Heritage	NSW Department of Planning and Environment	19/03/2019	18/01/2019	Weekly	1000	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	26/02/2019	01/11/2018	Quarterly	1000	0	0	2
Remnant Vegetation of the Cumberland Plain	NSW Office of Environment & Heritage	07/10/2014	04/08/2011	Unknown	1000	2	2	6
Ramsar Wetlands of Australia	Commonwealth of Australia Department of the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	2
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	2
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	27/03/2019	27/03/2019	Weekly	10000	-	-	-

Aerial Imagery 2018

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Contaminated Land & Waste Management Facilities

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

List of NSW contaminated sites notified to EPA

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

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist (m)	Direction
N/A	No records in buffer								

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

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land & Waste Management Facilities

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

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

Contaminated Land Records of Notice Data Source: Environment Protection Authority

Former Gasworks

Former Gasworks within the dataset buffer:

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

Former Gasworks Data Source: Environment Protection Authority

National Waste Management Site Database

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

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

Waste Management Facilities Data Source: Geoscience Australia

PFAS Investigation Sites

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

EPA PFAS Investigation Program

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

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

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation & Management Program

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

Property 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

EPA Other Sites with Contamination Issues

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

EPA Other Sites with Contamination Issues

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

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

Sites within the dataset buffer:

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

EPA Other Sites with Contamination Issues: Environment Protection Authority

EPA Activities

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Licensed Activities under the POEO Act 1997

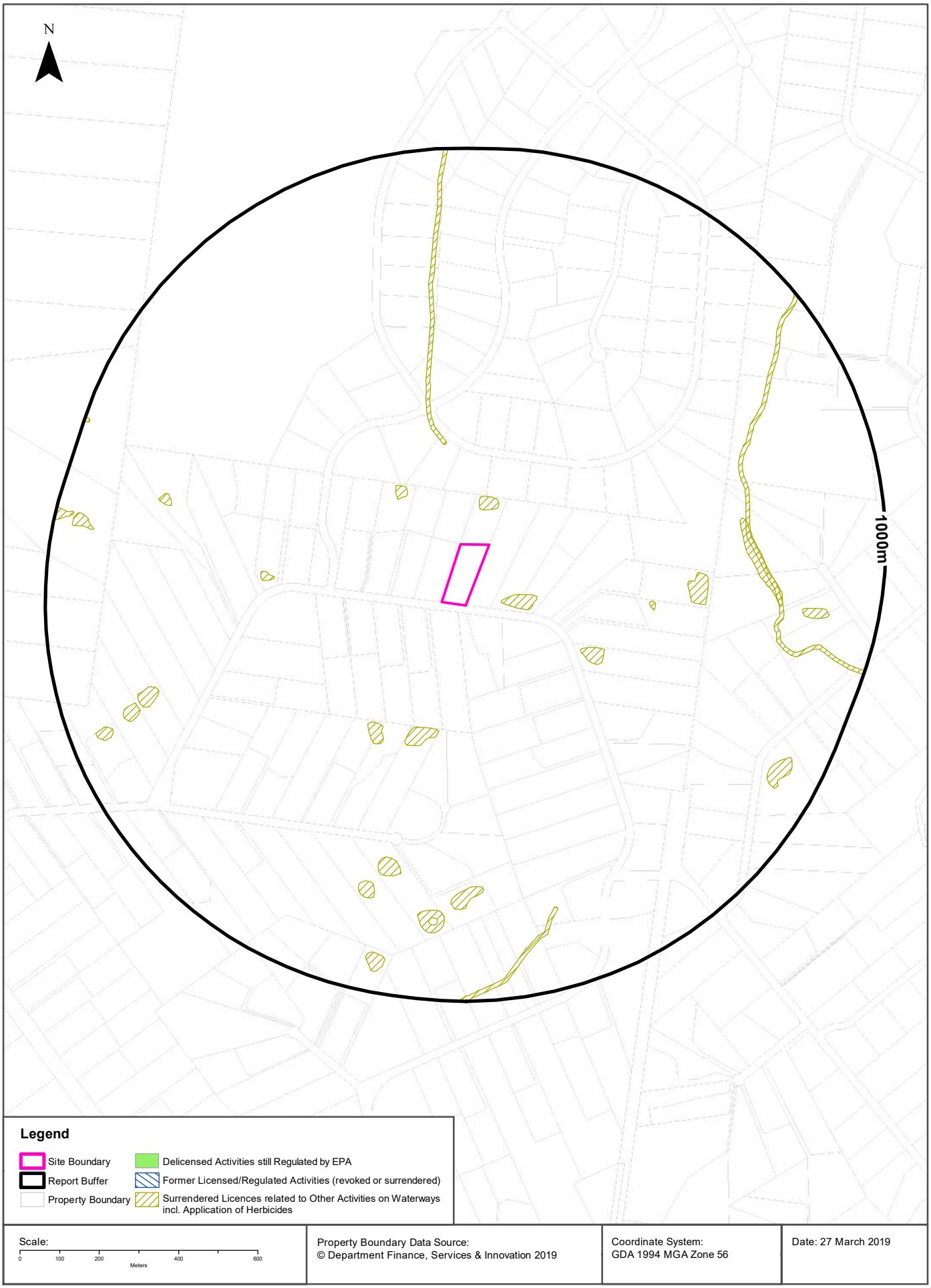
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

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

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



EPA Activities

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Delicensed Activities still regulated by the EPA

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

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

Delicensed Activities Data Source: Environment Protection Authority

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

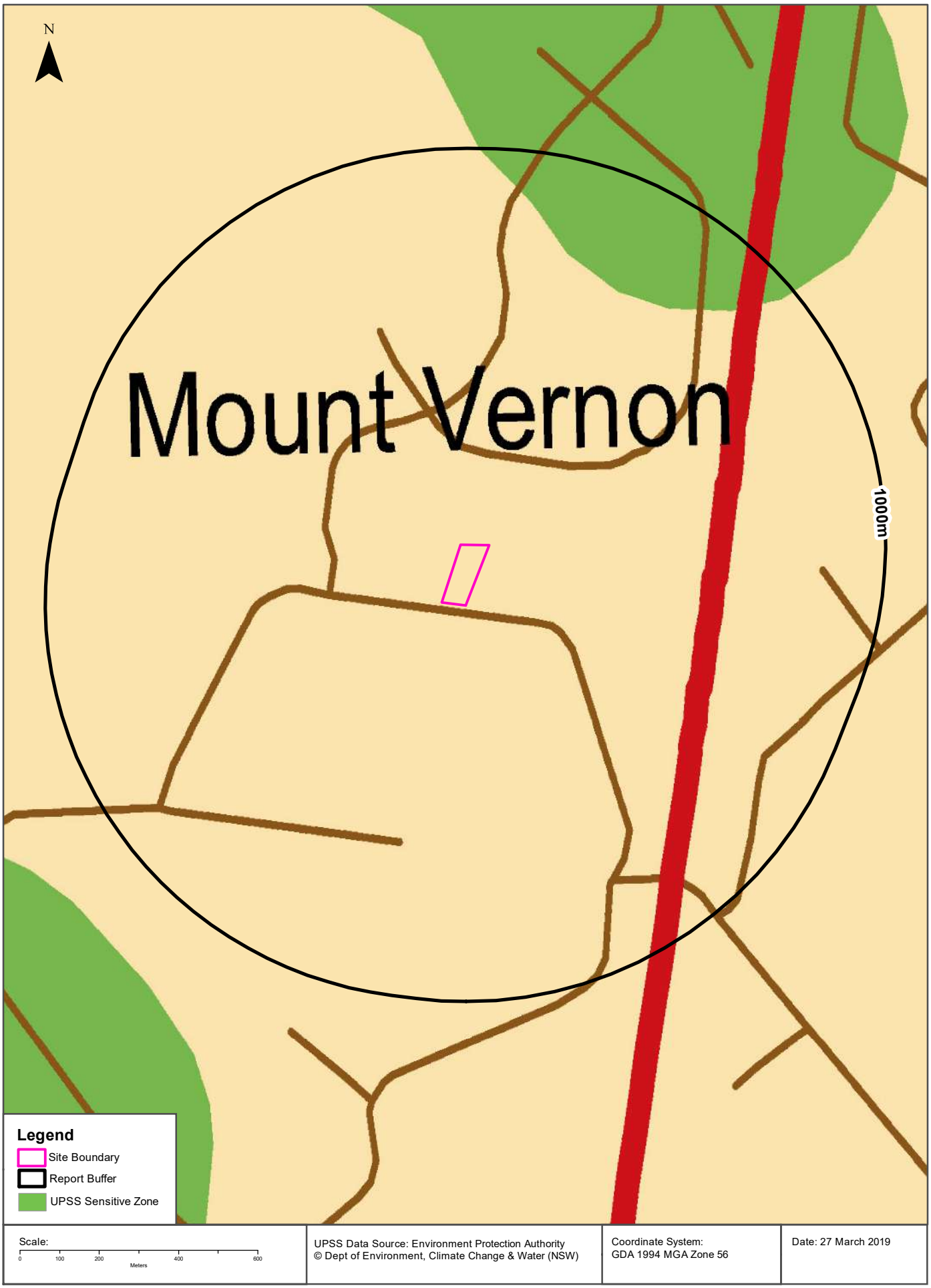
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	79m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	79m	-
5150	FAIRFIELD CITY COUNCIL	WATERWAYS OF FAIRFIELD CITY COUNCIL - FAIRFIELD NSW 2165	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	79m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	79m	-

Former Licensed Activities Data Source: Environment Protection Authority

UPSS Sensitive Zones

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Historical Business Directories

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

1991 Business to Business Directory Records Premise or Road Intersection Matches

Records from the 1991 UBD Business to 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

1991 Business to Business Directory Records Road or Area Matches

Records from the 1991 UBD Business to 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

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

1986 Business to Business Directory Records Premise or Road Intersection Matches

Records from the 1986 UBD Business to 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

1986 Business to Business Directory Records Road or Area Matches

Records from the 1986 UBD Business to 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

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

1982 Business Directory Records
Premise or Road Intersection Matches

Records from the 1982 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

1982 Business Directory Records
Road or Area Matches

Records from the 1982 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

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

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

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

1961 Business Directory Records
Premise or Road Intersection Matches

Records from the 1961 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

1961 Business Directory Records
Road or Area Matches

Records from the 1961 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

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

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

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches (1948-1993)

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

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

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 Universal Business Directories (UBD) - Licensed from Hardie Grant

Dry Cleaners, Motor Garages & Service Stations Road or Area Matches (1948-1993)

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

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

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 Universal Business Directories (UBD) - Licensed from Hardie Grant

Aerial Imagery 2009

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

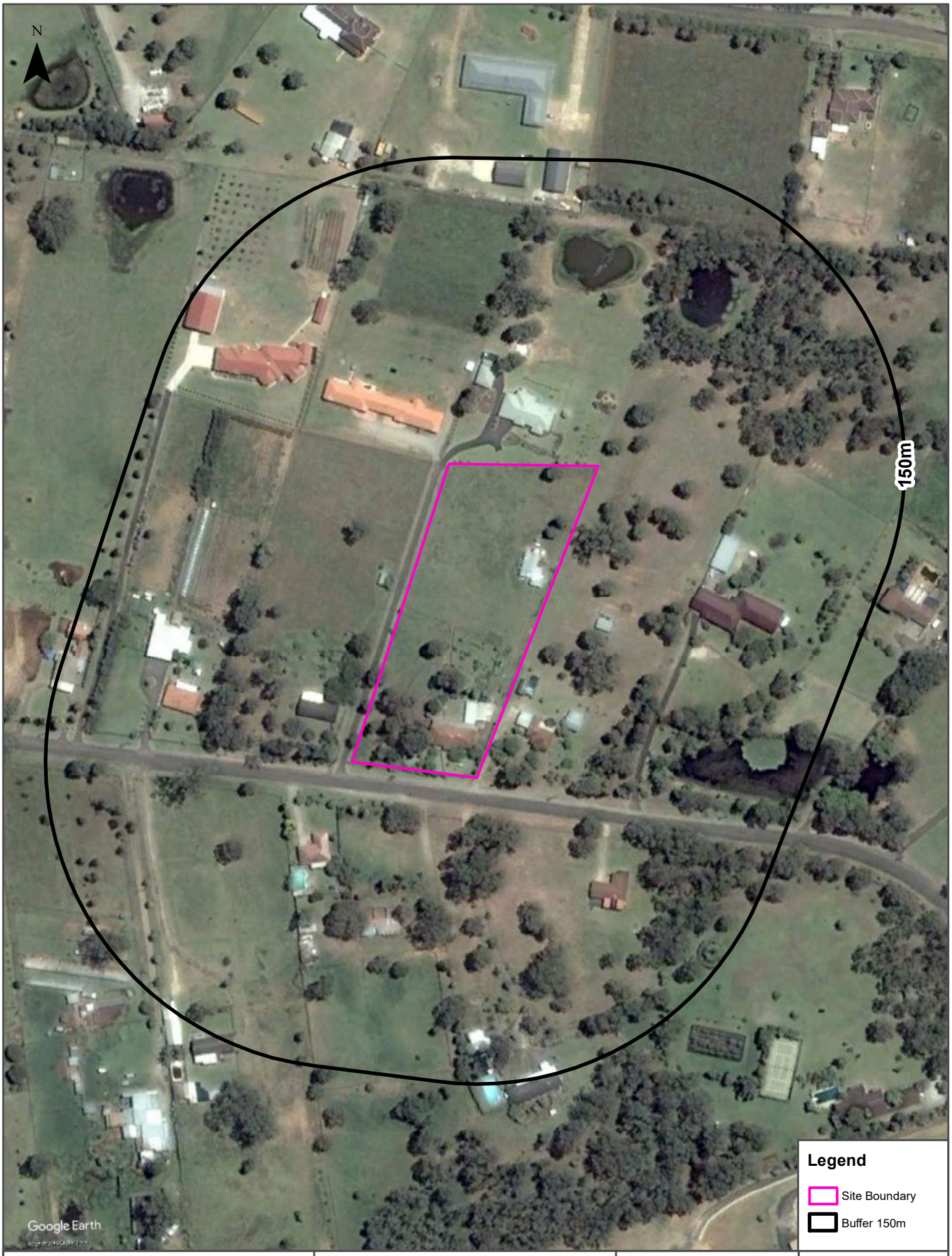
Data Source Aerial Imagery: © 2019 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System: GDA 1994 MGA Zone 56

Date: 26 March 2019

Aerial Imagery 2004

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



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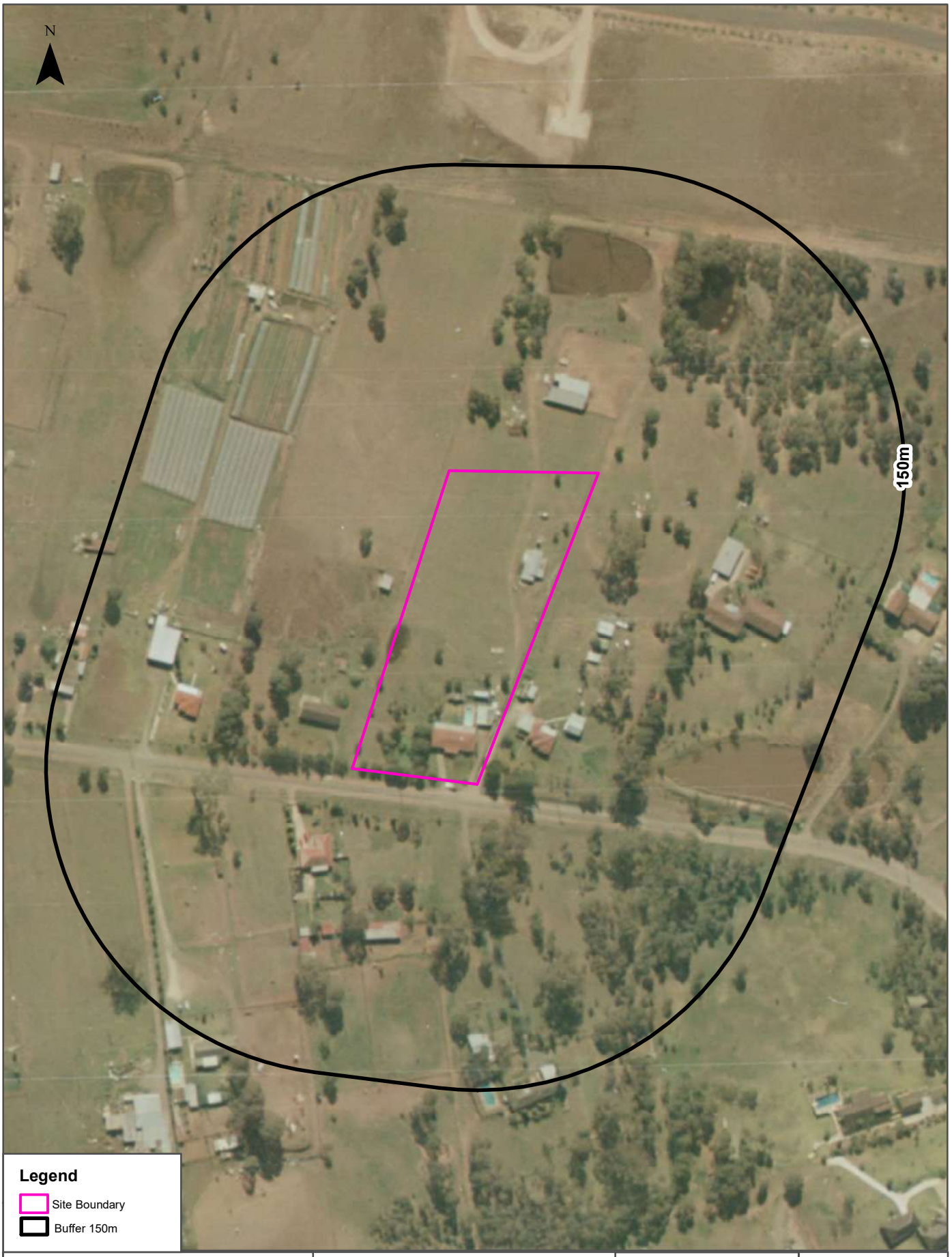
Coordinate System: GDA 1994 MGA Zone 56

Date: 26 March 2019

Aerial Imagery 1991

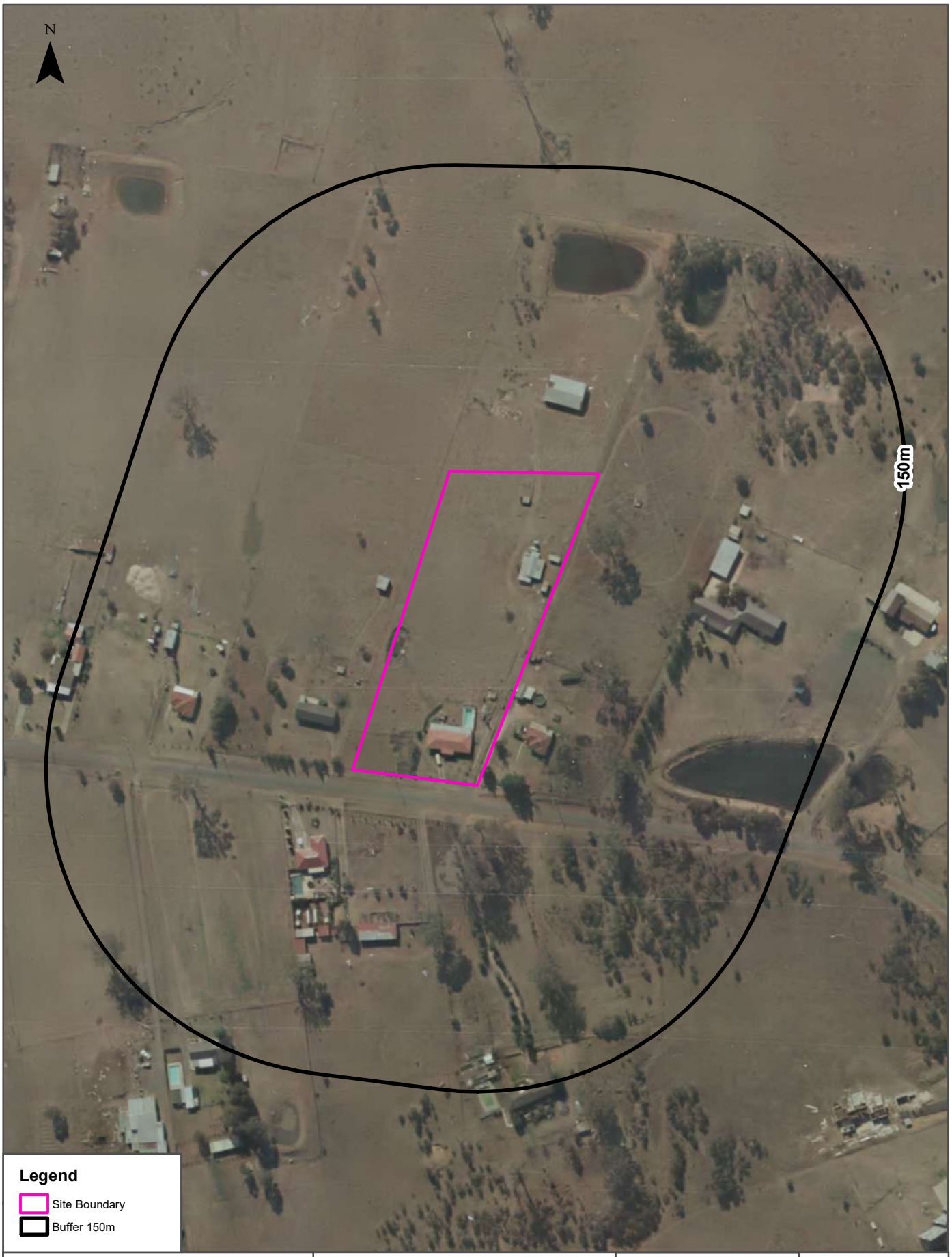
110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Scale: 0 25 50 100 Metres	Data Sources: Aerial Imagery © Department of Finance, Services & Innovation	Coordinate System: GDA 1994 MGA Zone 56	Date: 27 March 2019

Aerial Imagery 1982

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Aerial Imagery 1970

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Data Sources: Aerial Imagery © Department of Finance, Services & Innovation

Coordinate System: GDA 1994 MGA Zone 56

Date: 27 March 2019

Aerial Imagery 1965

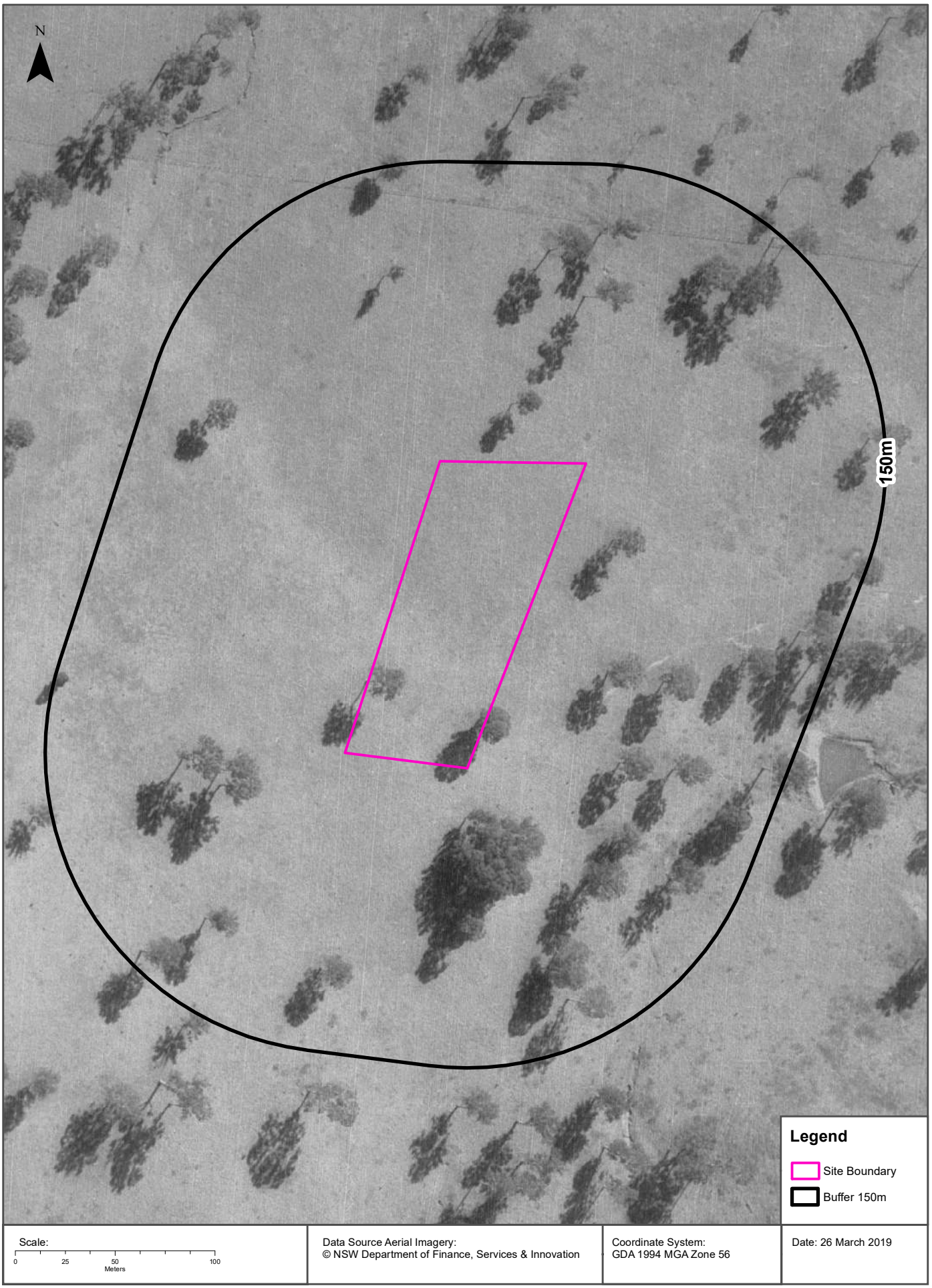
110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Aerial Imagery 1961

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

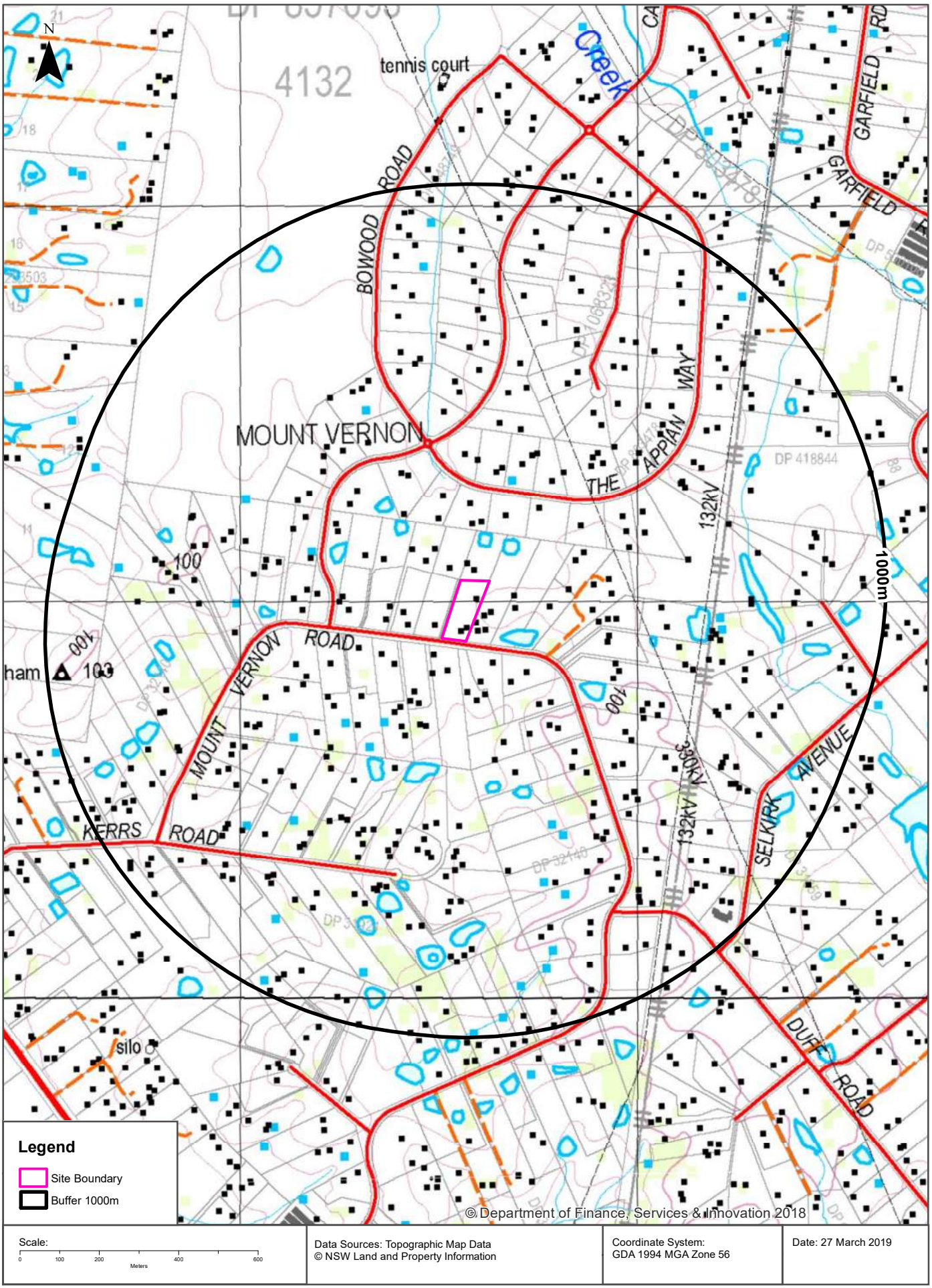
Aerial Imagery 1955

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



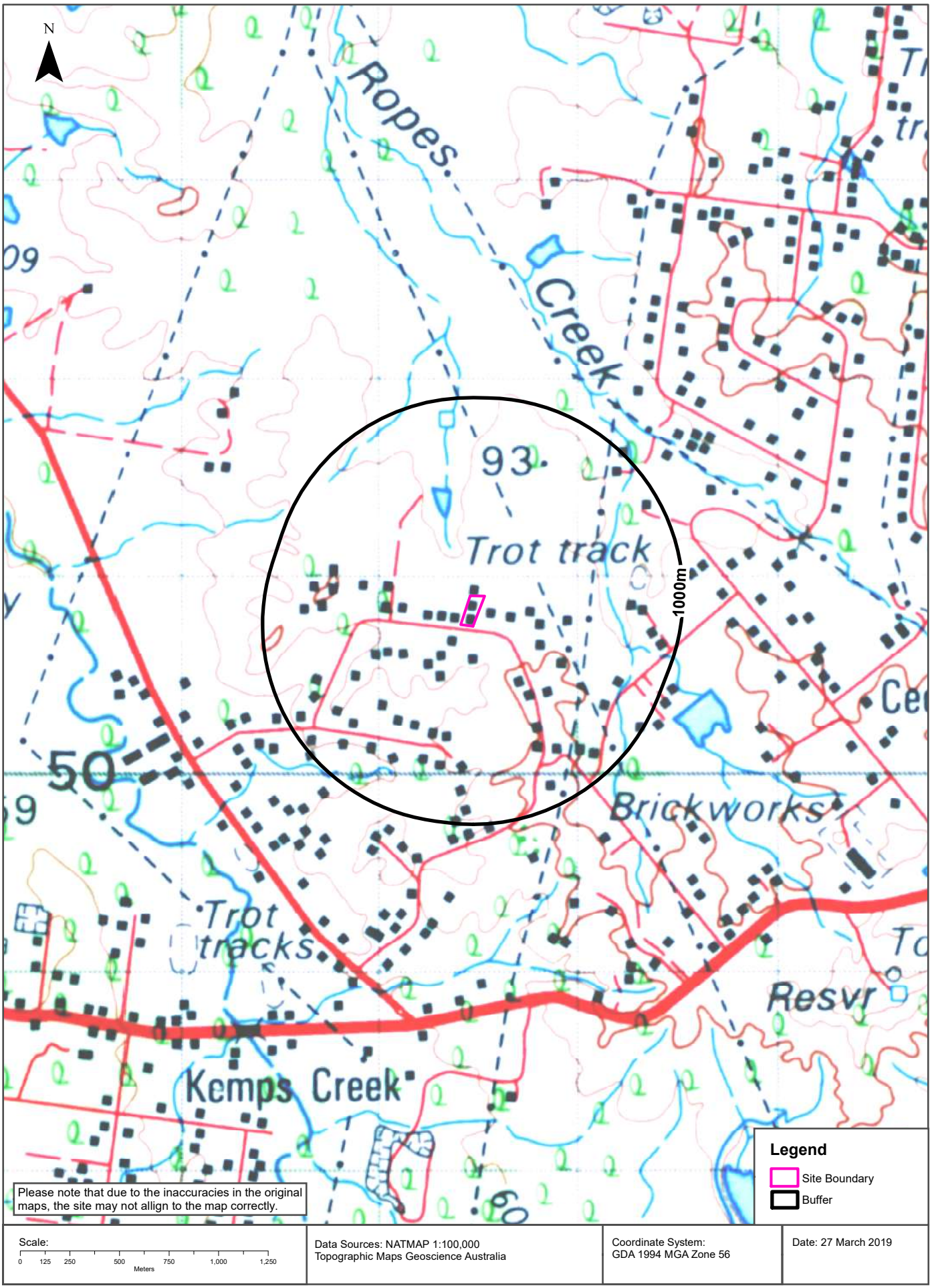
Topographic Map 2015

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



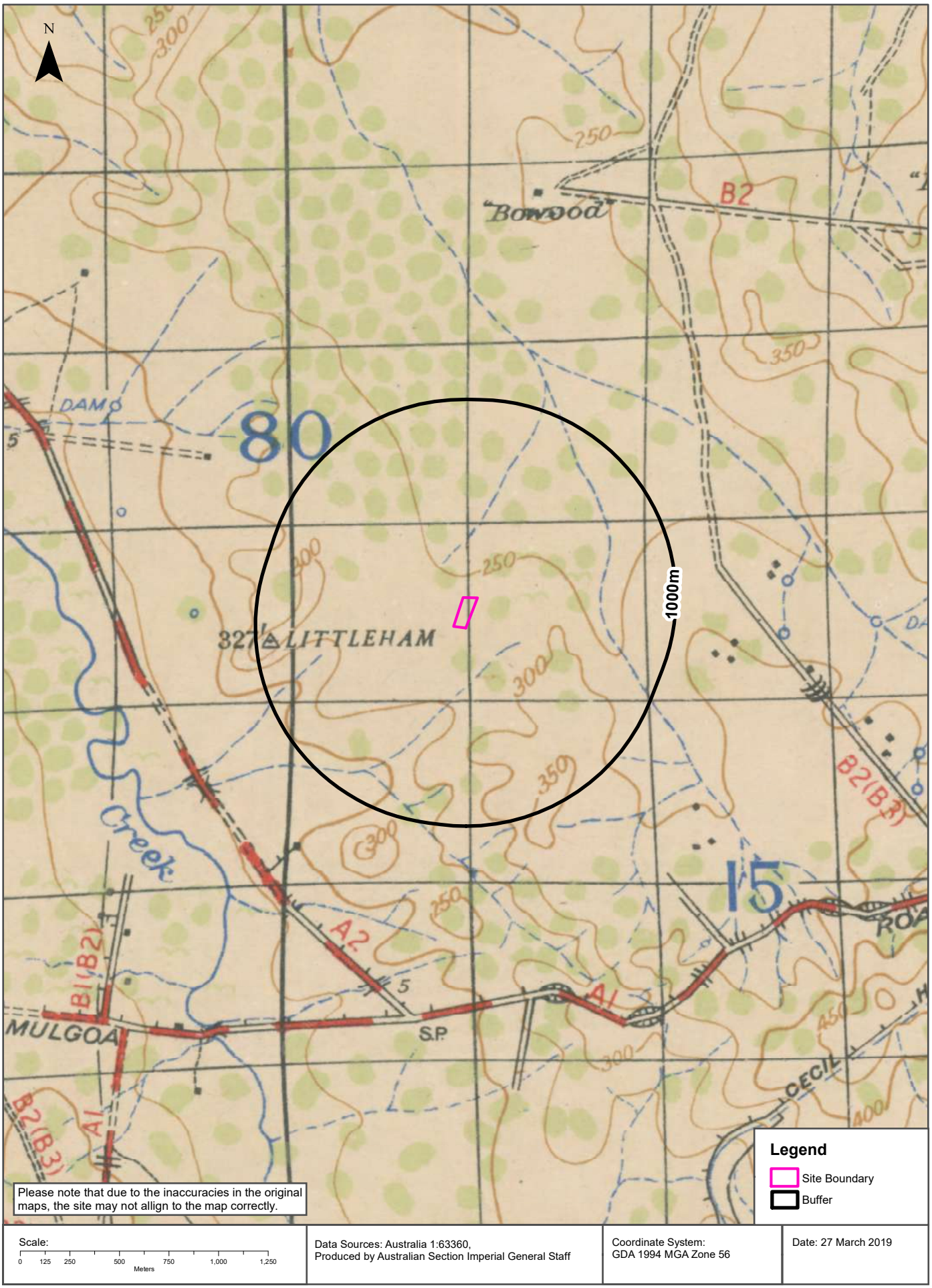
Historical Map 1975

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Historical Map c.1942

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Scale: 0 125 250 500 750 1,000 1,250 Meters

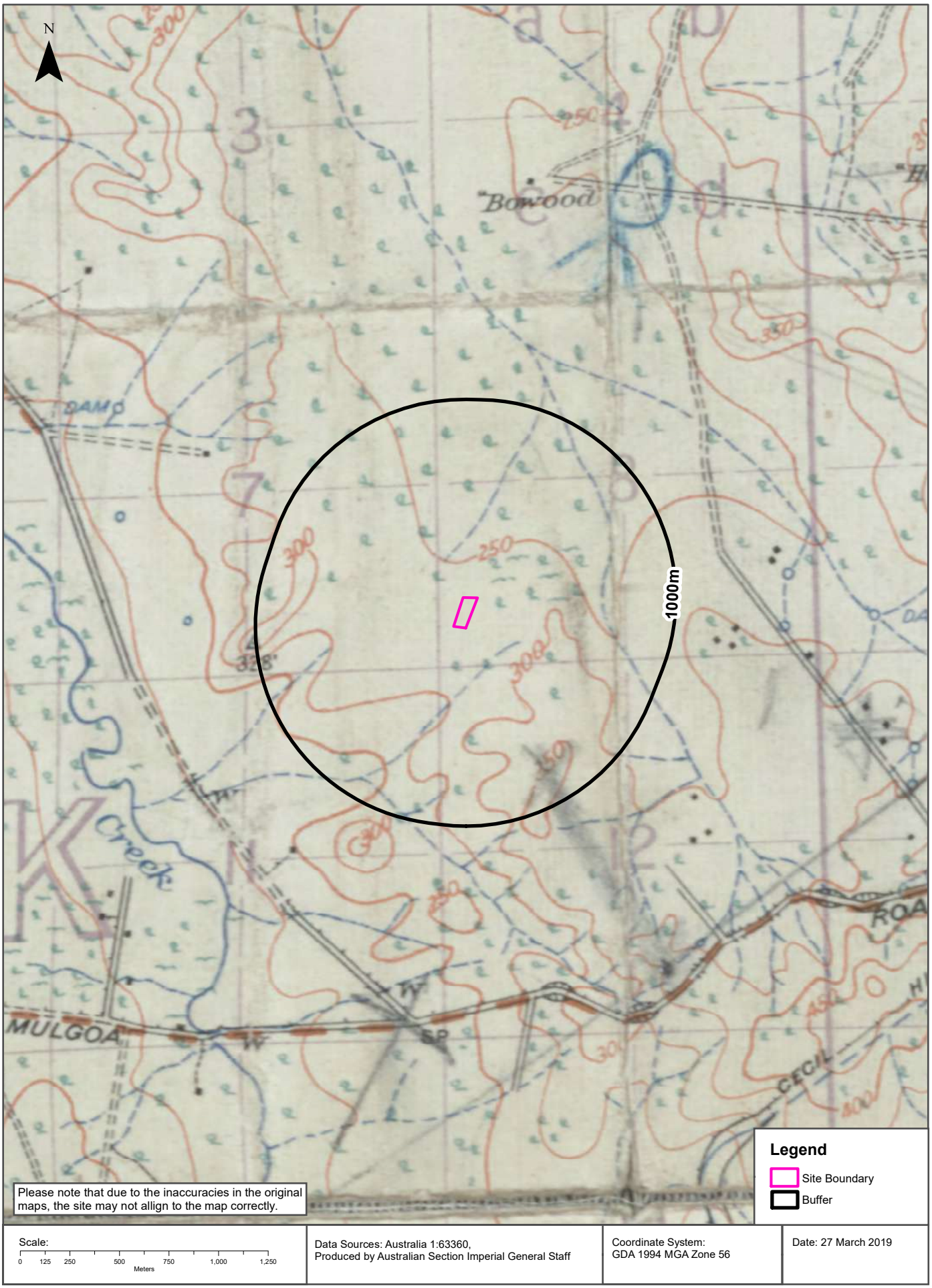
Data Sources: Australia 1:63360, Produced by Australian Section Imperial General Staff

Coordinate System: GDA 1994 MGA Zone 56

Date: 27 March 2019

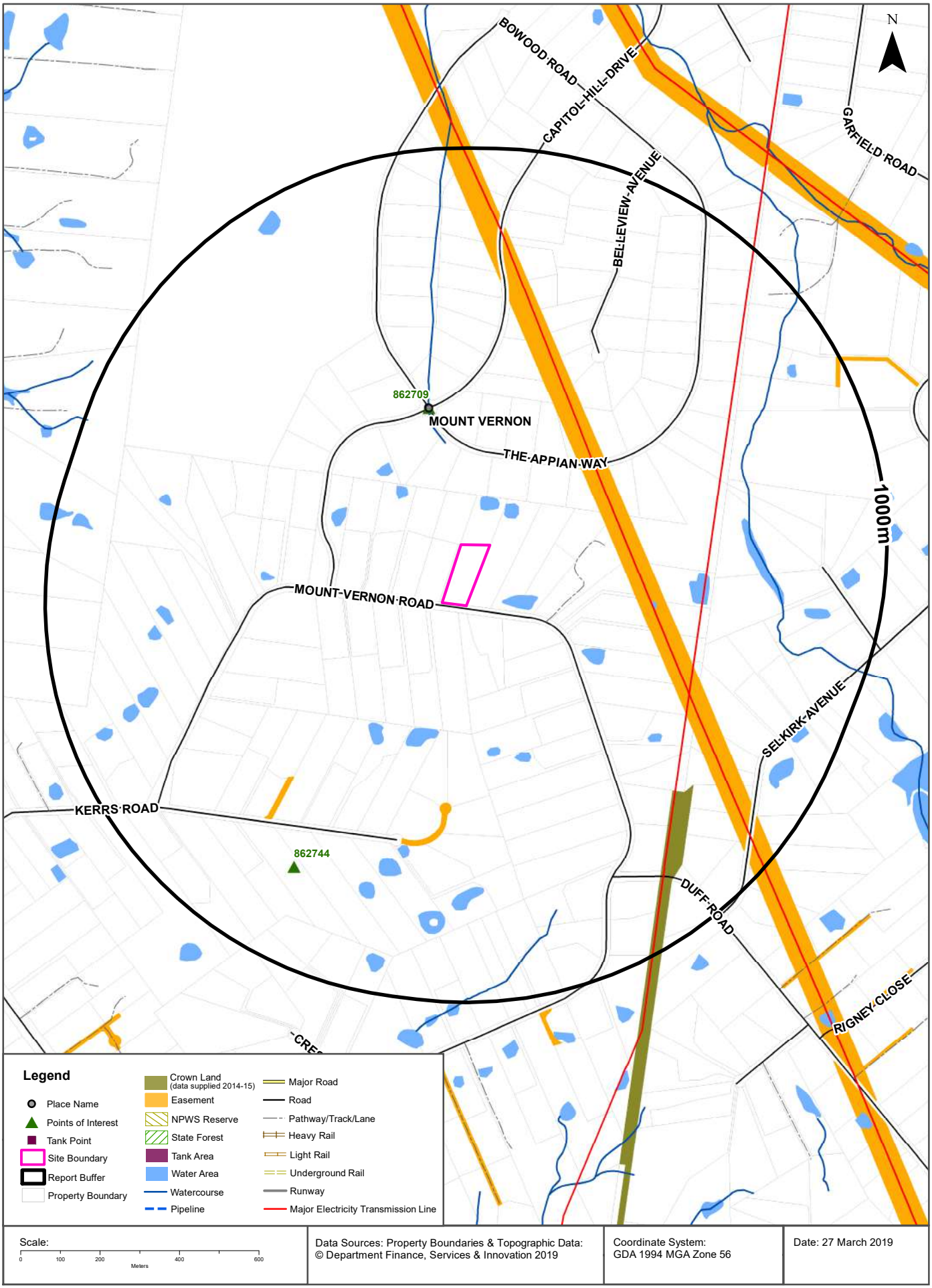
Historical Map c.1929

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Topographic Features

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Topographic Features

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
862709	Suburb	MOUNT VERNON	353m	North
862744	Child Care Centre	DO RE MI PRE-SCHOOL	764m	South West

Topographic Features

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Tanks (Areas)

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

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

Tanks (Points)

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

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

Major Easements

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120116055	Primary	Undefined		289m	North East
120110120	Primary	Undefined		501m	South
120110603	Primary	Undefined		577m	South West
120111578	Primary	Undefined		672m	North
120121083	Primary	Undefined		959m	North East

Topographic Features

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

State Forest

What State Forest exist within the dataset buffer?

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

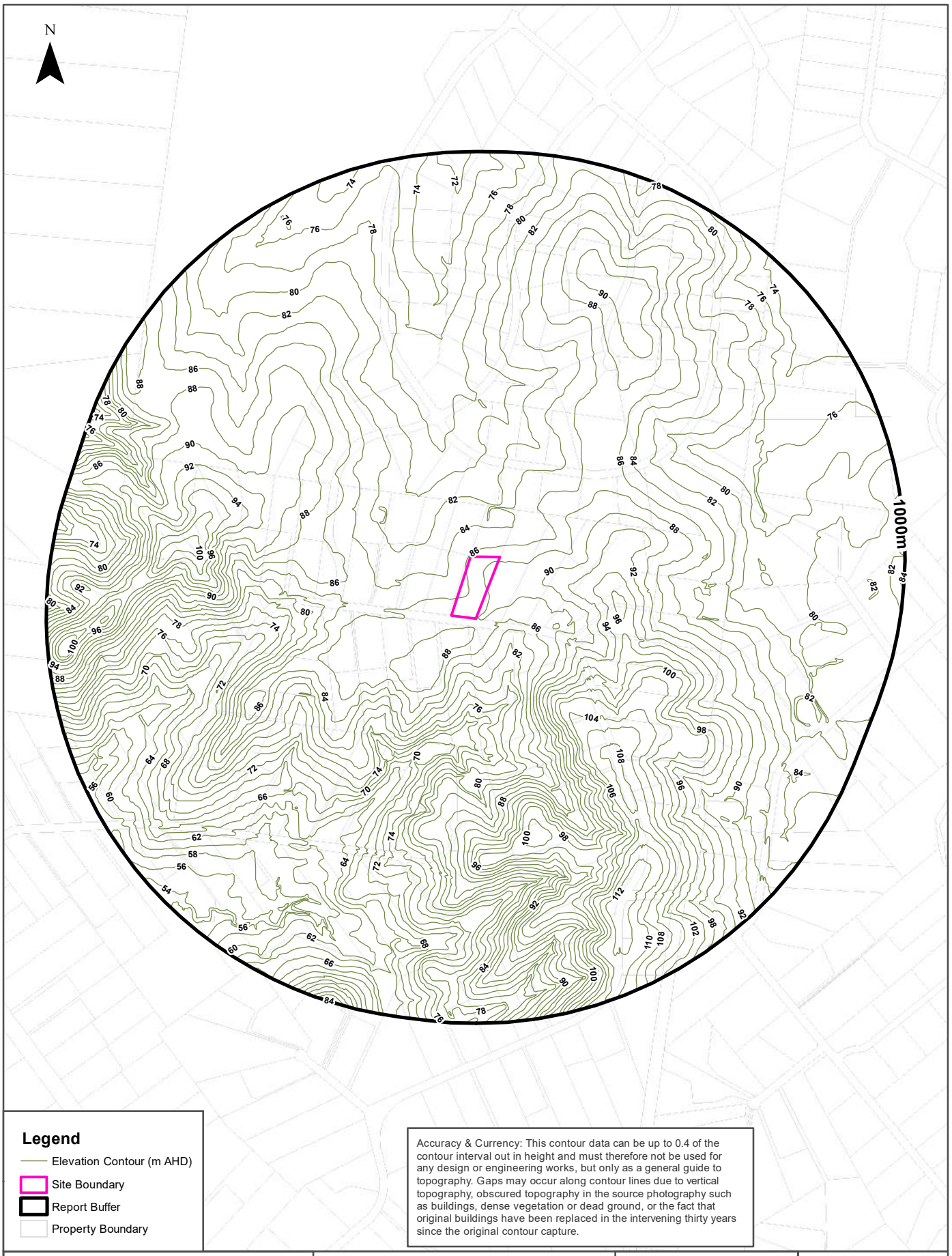
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

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

Elevation Contours (m AHD)

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Hydrogeology & Groundwater

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Hydrogeology

Description of aquifers on-site:

Description
Porous, extensive aquifers of low to moderate productivity

Description of aquifers within the dataset buffer:

Description
Porous, extensive aquifers of low to moderate productivity

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

Botany Groundwater Management Zones

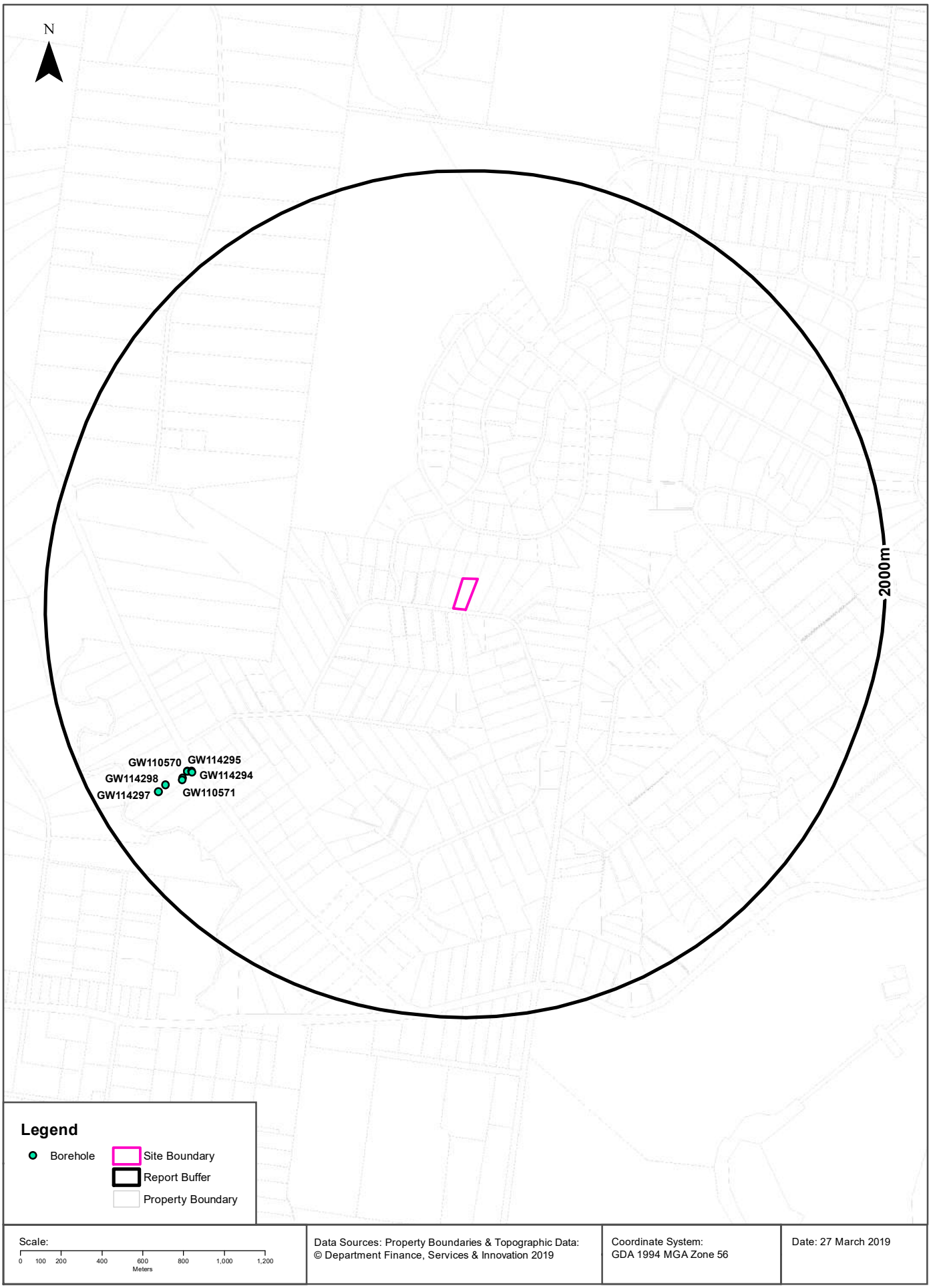
Groundwater management zones relating to the Botany Sand Beds aquifer within the dataset buffer:

Management Zone No.	Restriction	Distance	Direction
N/A	No records in buffer		

Botany Groundwater Management Zones Data Source : NSW Department of Primary Industries

Groundwater Boreholes

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Hydrogeology & Groundwater

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW114294	10BL604605	Bore	Private	Monitoring Bore	Monitoring Bore		28/04/2011	6.00	6.00					1511m	South West
GW110569	10BL603558	Bore	Private	Monitoring Bore	Monitoring Bore		25/08/2009	6.00	12.00		4.40			1511m	South West
GW114295	10BL604605	Bore	Private	Monitoring Bore	Monitoring Bore		28/04/2011	6.00	6.00					1529m	South West
GW110570	10BL603558	Bore	Private	Monitoring Bore	Monitoring Bore		25/08/2009	12.00	6.00		4.40			1530m	South West
GW114296	10BL604605	Bore	Private	Monitoring Bore	Monitoring Bore		28/04/2011	6.00	6.00					1565m	South West
GW110571	10BL603558	Bore	Private	Monitoring Bore	Monitoring Bore		25/08/2009	12.00	6.00		4.40			1573m	South West
GW114298	10BL604605	Bore	Private	Monitoring Bore	Monitoring Bore		28/04/2011	7.00	7.00					1654m	South West
GW114297	10BL604605	Bore	Private	Monitoring Bore	Monitoring Bore		28/04/2011	8.00	8.00					1702m	South West

Hydrogeology & Groundwater

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

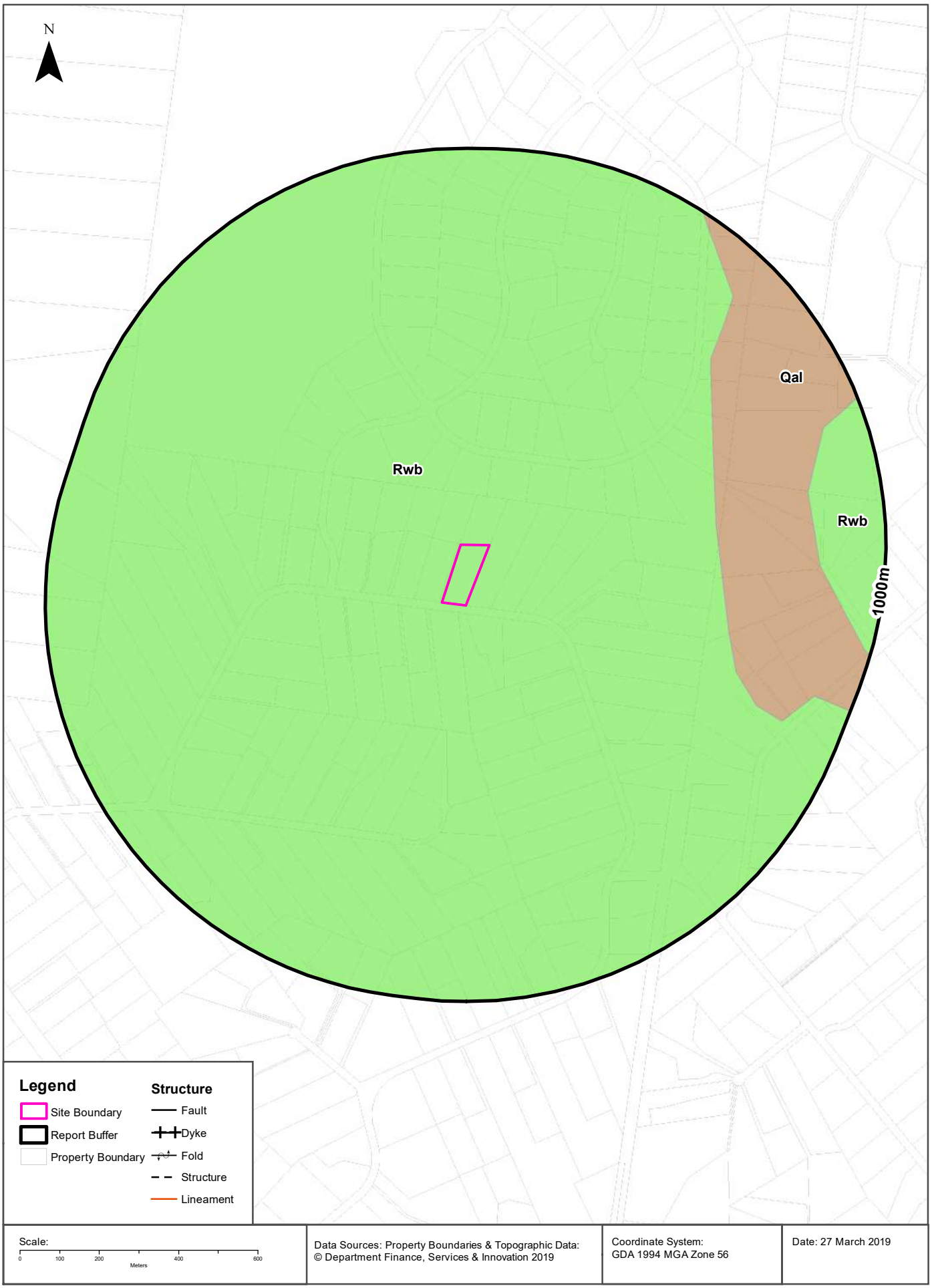
Driller's Logs

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

Groundwater No	Drillers Log	Distance	Direction
GW110569	0.00m-1.00m FILL, SILTY CLAY BROWN 1.00m-6.00m CLAY SILTY, BROWN	1511m	South West
GW110570	0.00m-1.00m FILL,SILTY CLAY,BROWN 1.00m-6.00m CLAY SILTY,BROWN	1530m	South West
GW110571	0.00m-1.00m FILL,SILTY CLAY,BROWN 1.00m-6.00m CLAY SILTY,BROWN	1573m	South West

Geology 1:100,000

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Geology

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Rwb7	Shale, carbonaceous claystone,claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff	Bringelly Shale	Wianamatta Group (undifferentiated)		Middle Triassic		Penrith	1:100,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Qal	Fine-grained sand, silt and clay				Quaternary		Penrith	1:100,000
Rwb	Shale, carbonaceous claystone,claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff	Bringelly Shale	Wianamatta Group (undifferentiated)		Middle Triassic		Penrith	1:100,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

Naturally Occurring Asbestos Potential

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

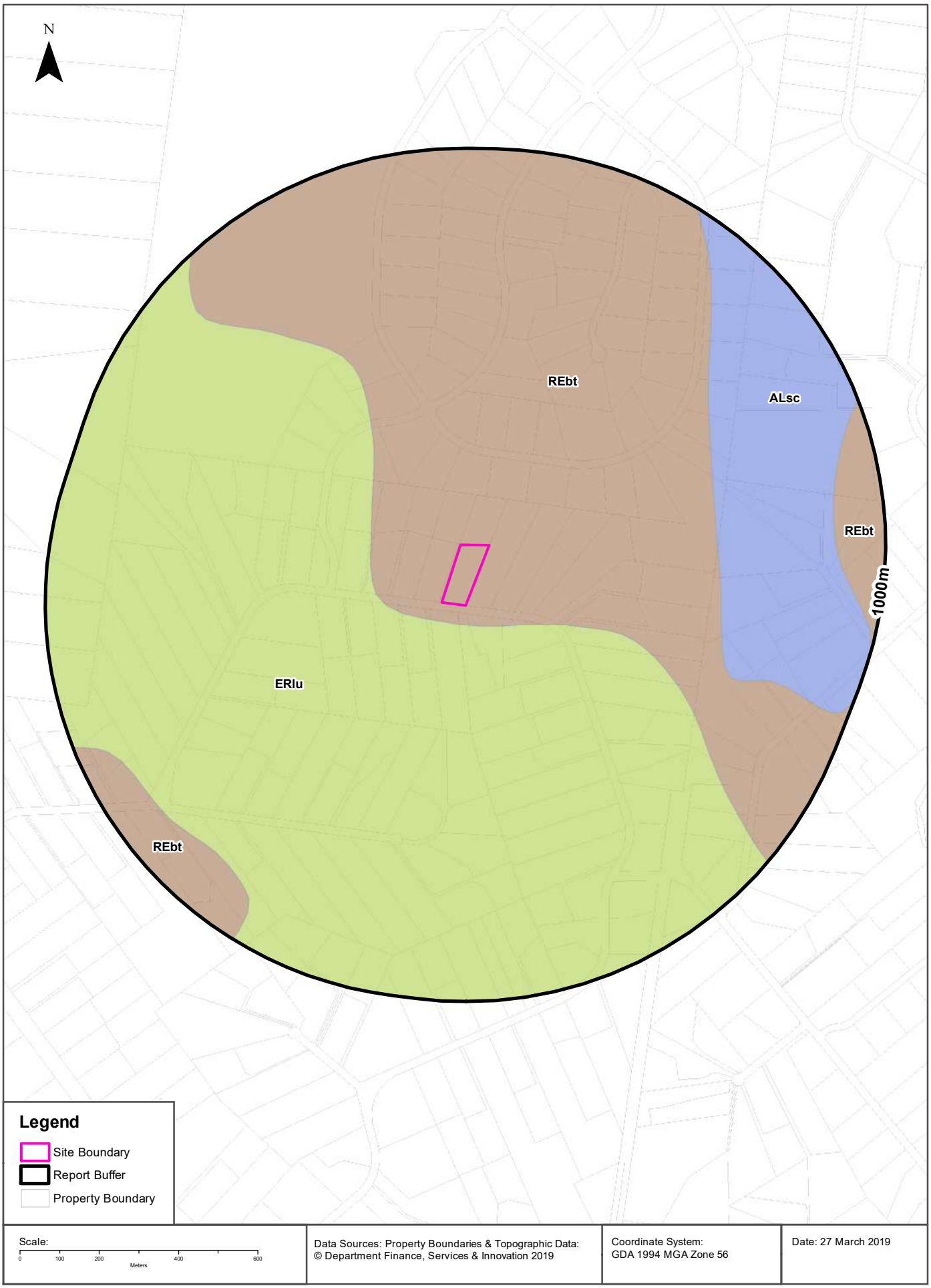
Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

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

Soil Landscapes

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Soils

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Soil Landscapes

What are the onsite Soil Landscapes?

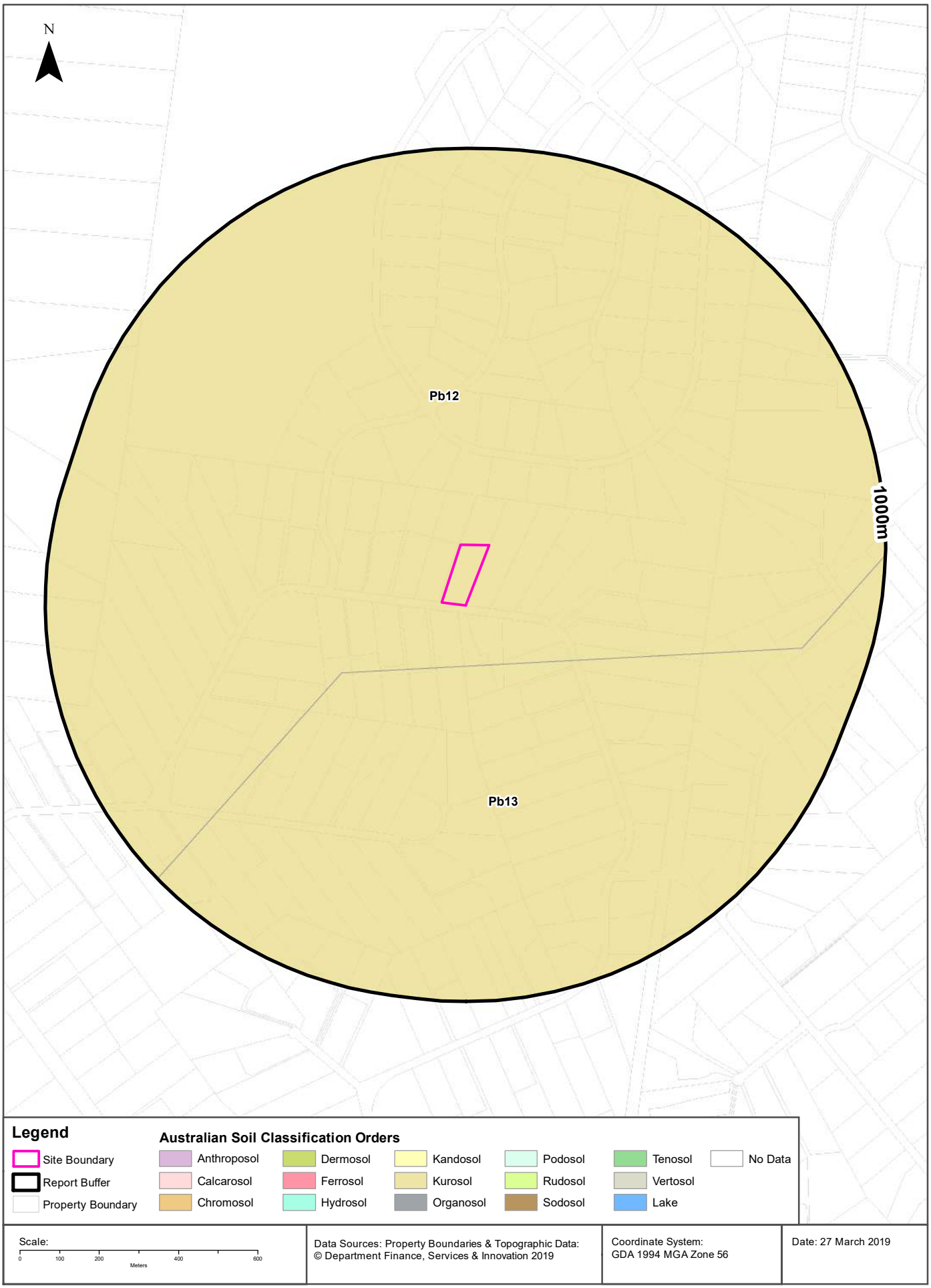
Soil Code	Name	Group	Process	Map Sheet	Scale
REbt	BLACKTOWN		RESIDUAL	Penrith	1:100,000

What are the Soil Landscapes within the dataset buffer?

Soil Code	Name	Group	Process	Map Sheet	Scale
ALsc	SOUTH CREEK		ALLUVIAL	Penrith	1:100,000
ERlu	LUDDENHAM		EROSIONAL	Penrith	1:100,000
REbt	BLACKTOWN		RESIDUAL	Penrith	1:100,000

Atlas of Australian Soils

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Soils

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance
Pb12	Kurosol	Gently rolling to rounded hilly country with some steep slopes and broad valleys: chief soils are hard acidic red soils (Dr2.21) with hard neutral and acidic yellow mottled soils (Dy3.42 and Dy3.41) on lower slopes and in valleys. Associated are small areas of various soils including (Gn3.54) on some ridges, (Dr3.31) on some slopes; (Dr2.23) in saddles and some mid-slope positions, and some low- lying swampy areas of (Uf6) soils and (Uc1.2) soils with peaty surfaces. Small areas of other soils such as (Db1.2) are likely throughout.	0m
Pb13	Kurosol	Ridge and valley country of gently undulating ridge tops and steep side slopes often with slumping, also rounded hilly to steep hilly areas and relatively narrow valleys: chief soils are hard acidic red soils (Dr2.21) with hard acidic yellow mottled soils (Dy3.41); in places some ironstone gravels occur in both these soils. Associated are hard neutral and alkaline red soils (Dr2.22 and Dr2.23) in saddles and some mid-slope positions; (Dy3.42 and Dy3.43) soils, usually in depressions; and small areas of undescribed soils in wet soaks and valley areas. Small areas of other soils are likely throughout.	154m

Acid Sulfate Soils

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Environmental Planning Instrument - Acid Sulfate Soils

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

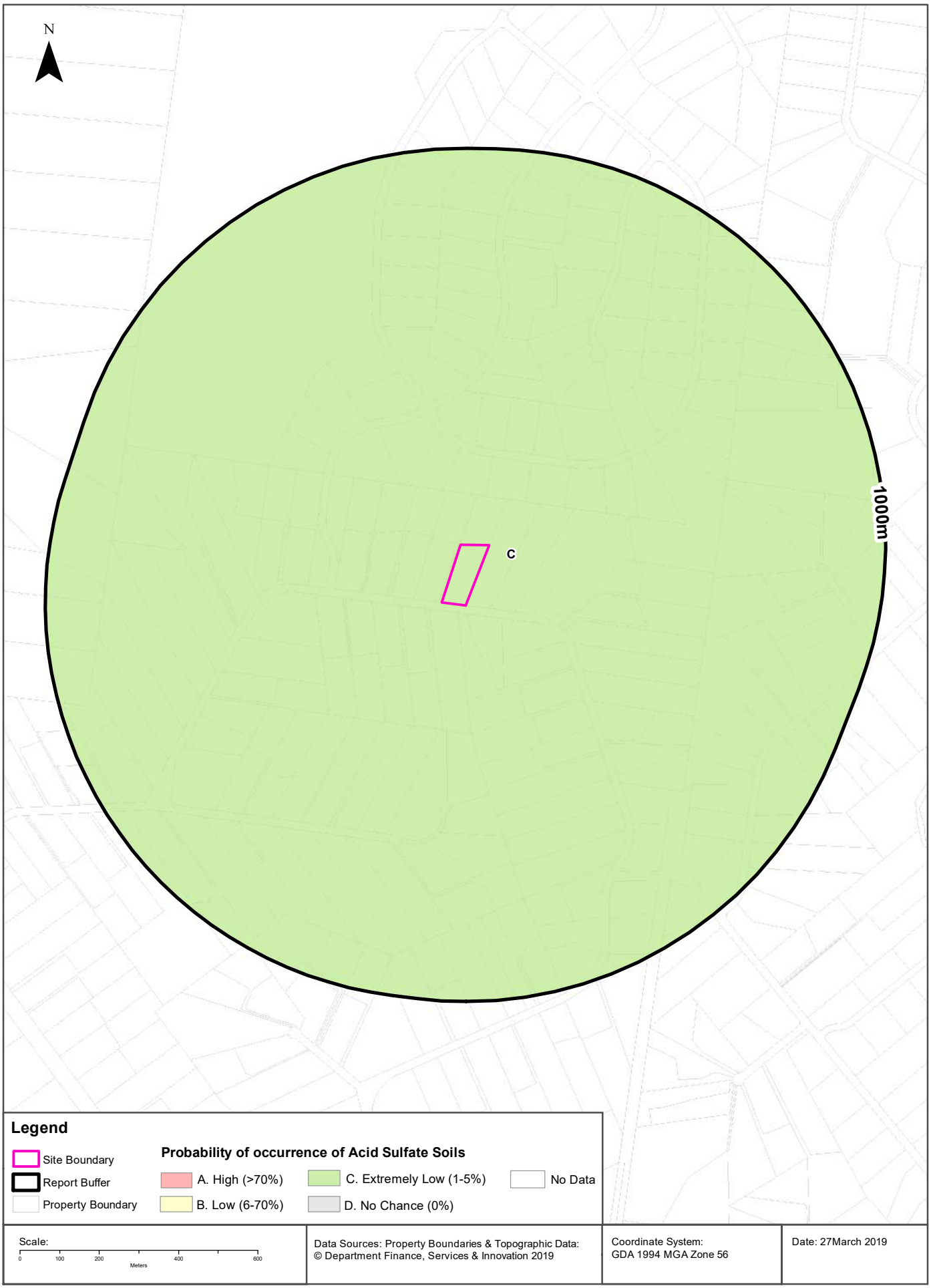
Soil Class	Description	EPI Name
N/A		

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

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Acid Sulfate Soils

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

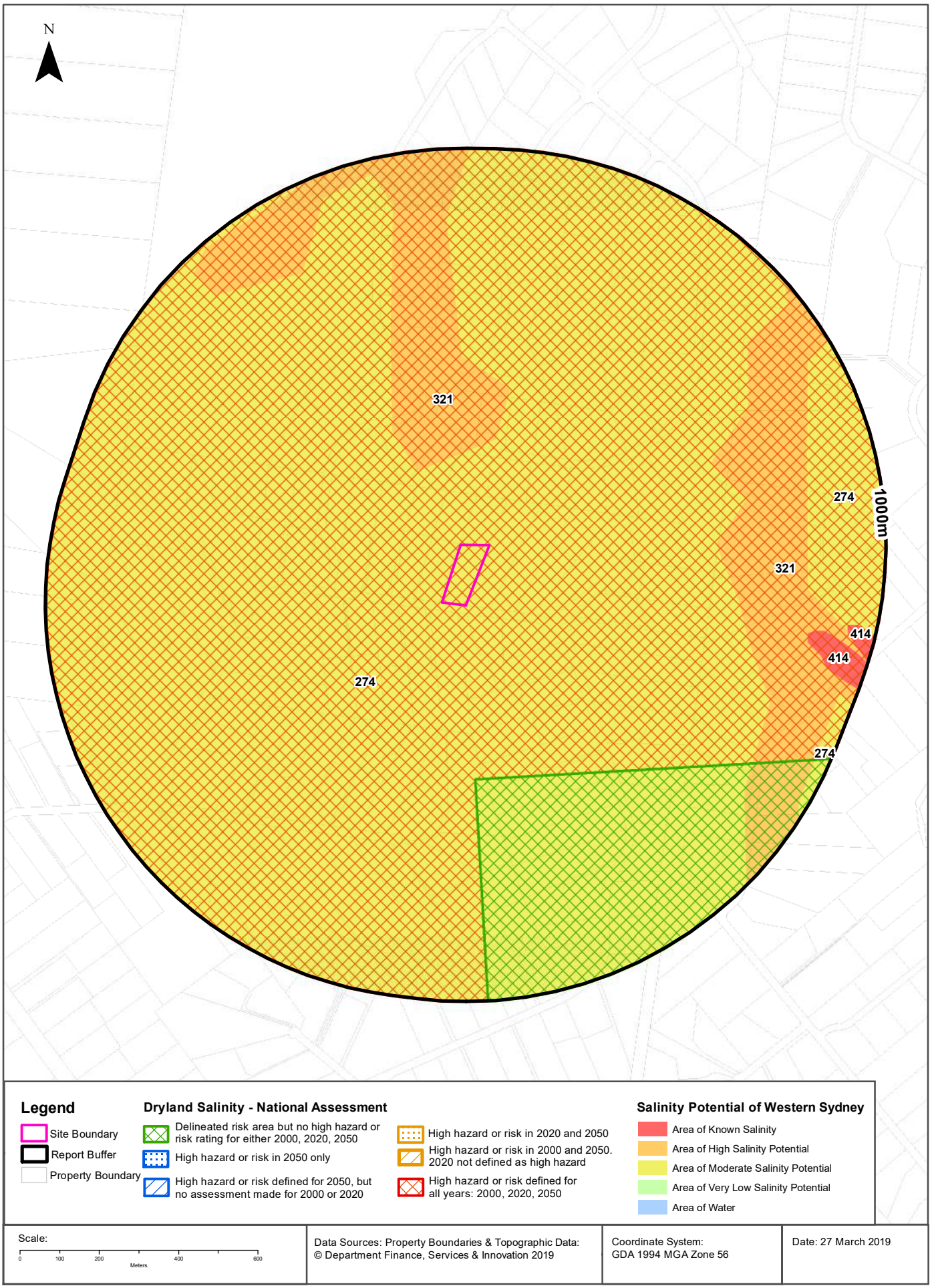
Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m

Dryland Salinity

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Dryland Salinity

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

Yes

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

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	0m	Onsite
Delineated risk area but no high hazard or risk rating	Delineated risk area but no high hazard or risk rating	Delineated risk area but no high hazard or risk rating	439m	South East

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

Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

Feature Id	Classification	Description	Distance	Direction
274	MODERATE	Area of Moderate Salinity Potential	0m	Onsite
321	HIGH	Area of High Salinity Potential	213m	North
414	SALT	Area of Known Salinity	833m	East

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

Mining Subsidence Districts

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

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

State Environmental Planning Policy

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

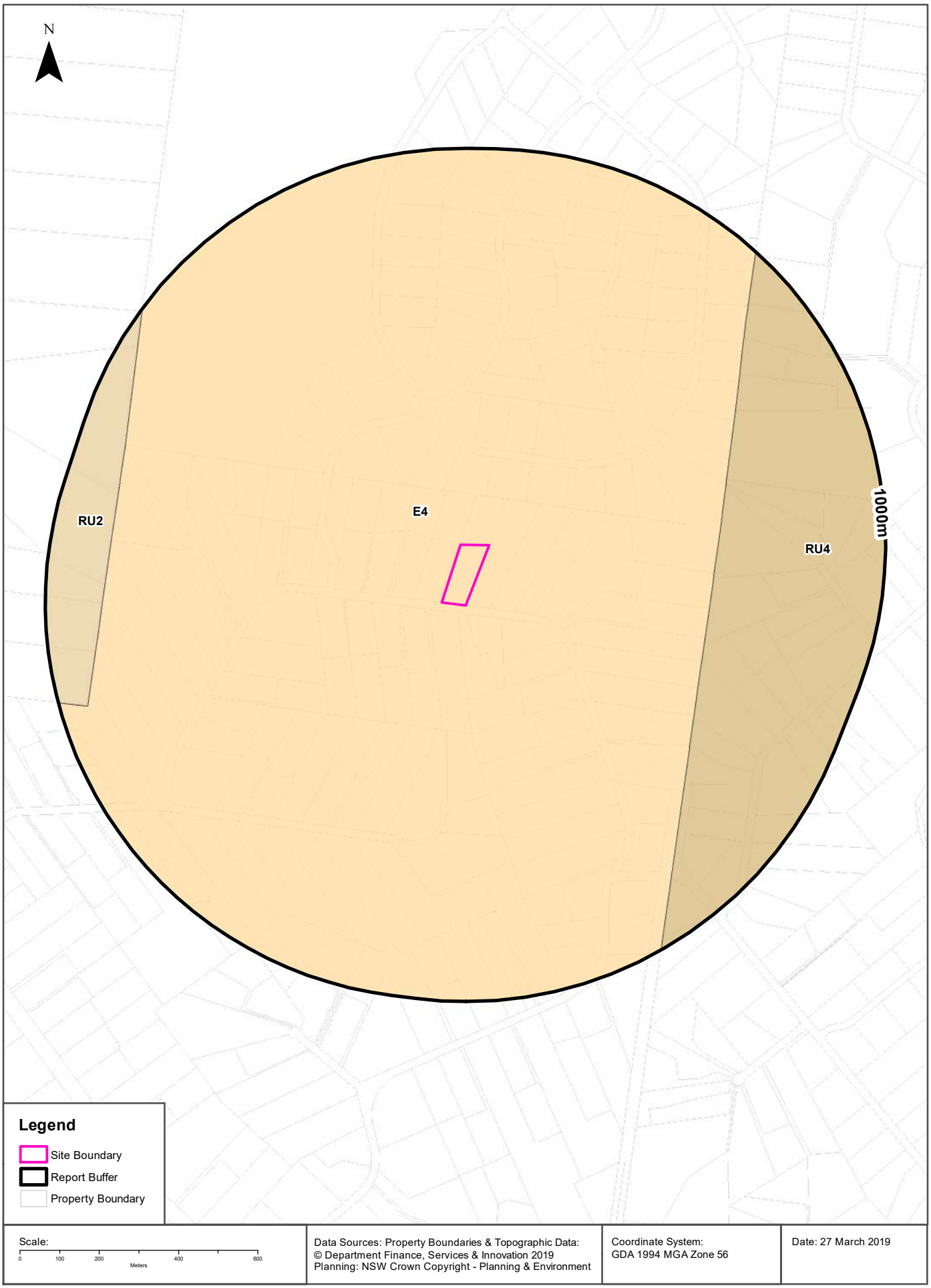
State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

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

EPI Planning Zones

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Environmental Planning Instrument

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
E4	Environmental Living		Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	22/06/2018		0m	Onsite
RU4	Primary Production Small Lots		Fairfield Local Environmental Plan 2013	17/05/2013	31/05/2013	26/10/2018		571m	South East
RU2	Rural Landscape		Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	22/06/2018		848m	North West

Heritage

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Commonwealth Heritage List

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

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

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

National Heritage List

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

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

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

State Heritage Register - Curtilages

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

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

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

Environmental Planning Instrument - Heritage

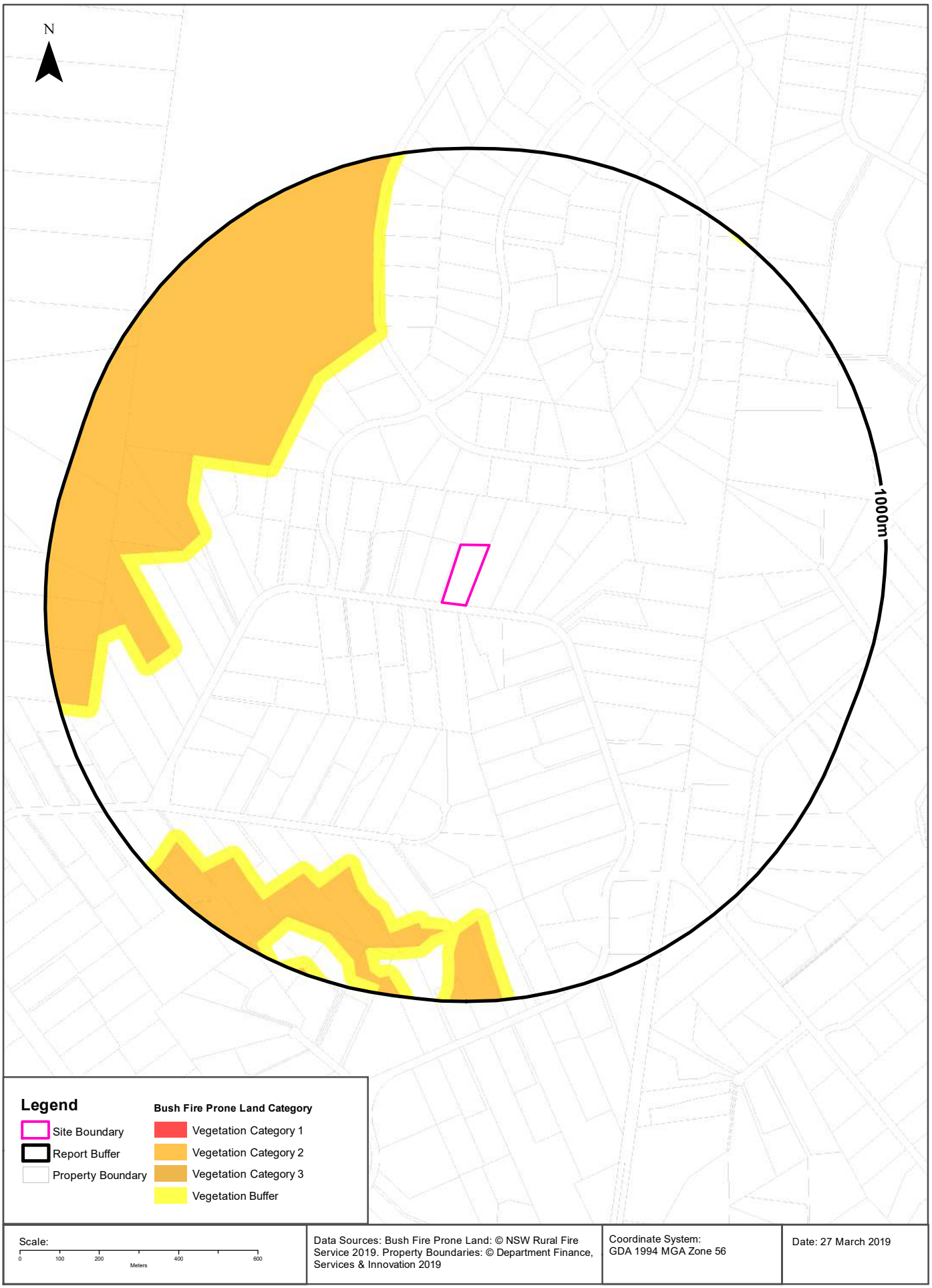
What are the EPI Heritage Items located within the dataset buffer?

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

Heritage Data Source: NSW Crown Copyright - Planning & Environment

Natural Hazards - Bush Fire Prone Land

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Natural Hazards

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

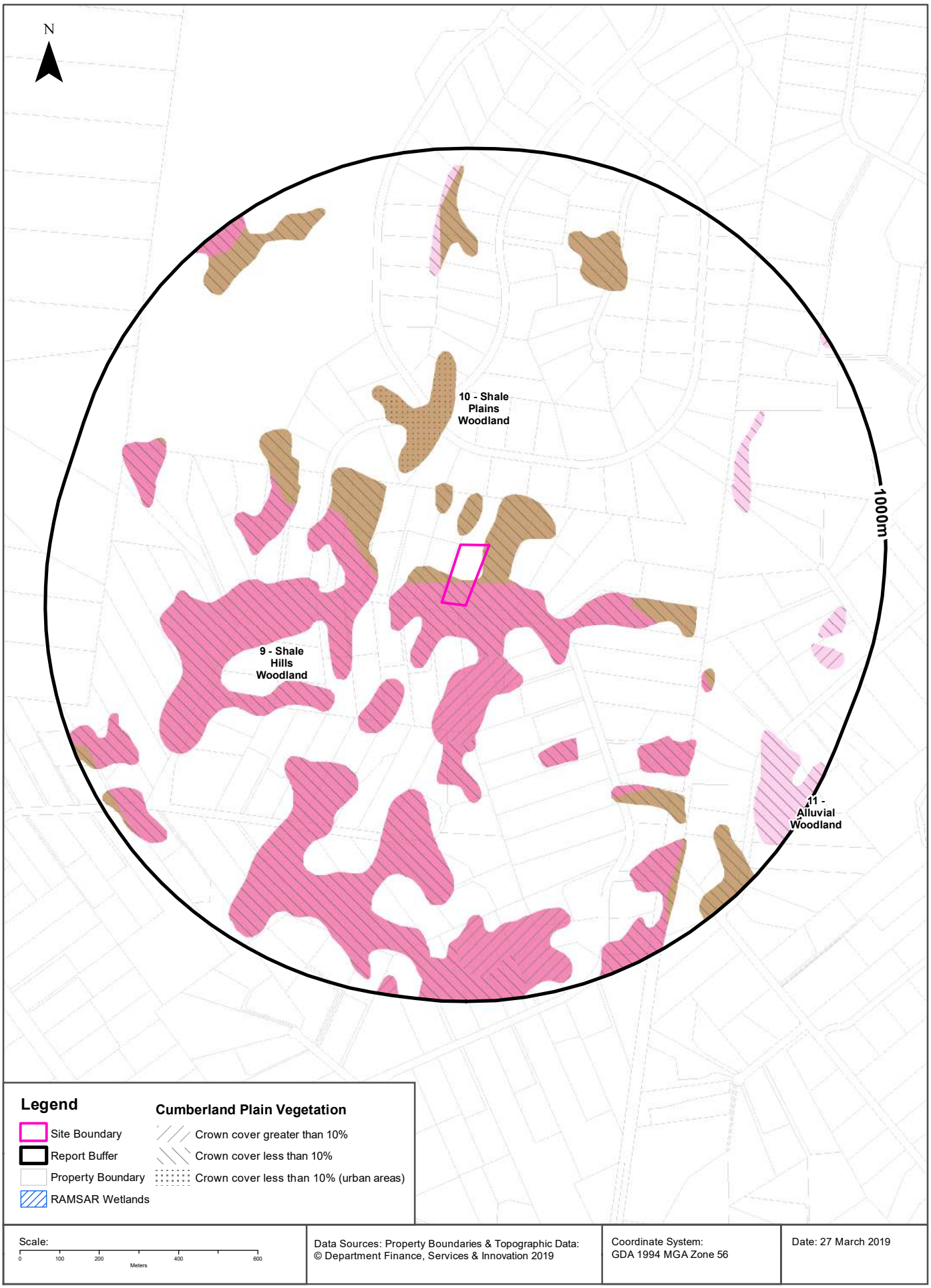
Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
Vegetation Buffer	491m	South West
Vegetation Category 2	521m	West

Ecological Constraints - Remnant Vegetation of the Cumberland Plain

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Ecological Constraints

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Remnant Vegetation of the Cumberland Plain

What remnant vegetation of the Cumberland Plain exists within the dataset buffer?

Description	Crown Cover	Distance	Direction
10 - Shale Plains Woodland	Crown cover less than 10%	0m	Onsite
9 - Shale Hills Woodland	Crown cover less than 10%	0m	Onsite
9 - Shale Hills Woodland	Crown cover greater than 10%	135m	South
10 - Shale Plains Woodland	Crown cover less than 10% (urban areas)	222m	North
11 - Alluvial Woodland	Crown cover less than 10%	625m	East
11 - Alluvial Woodland	Crown cover greater than 10%	850m	East

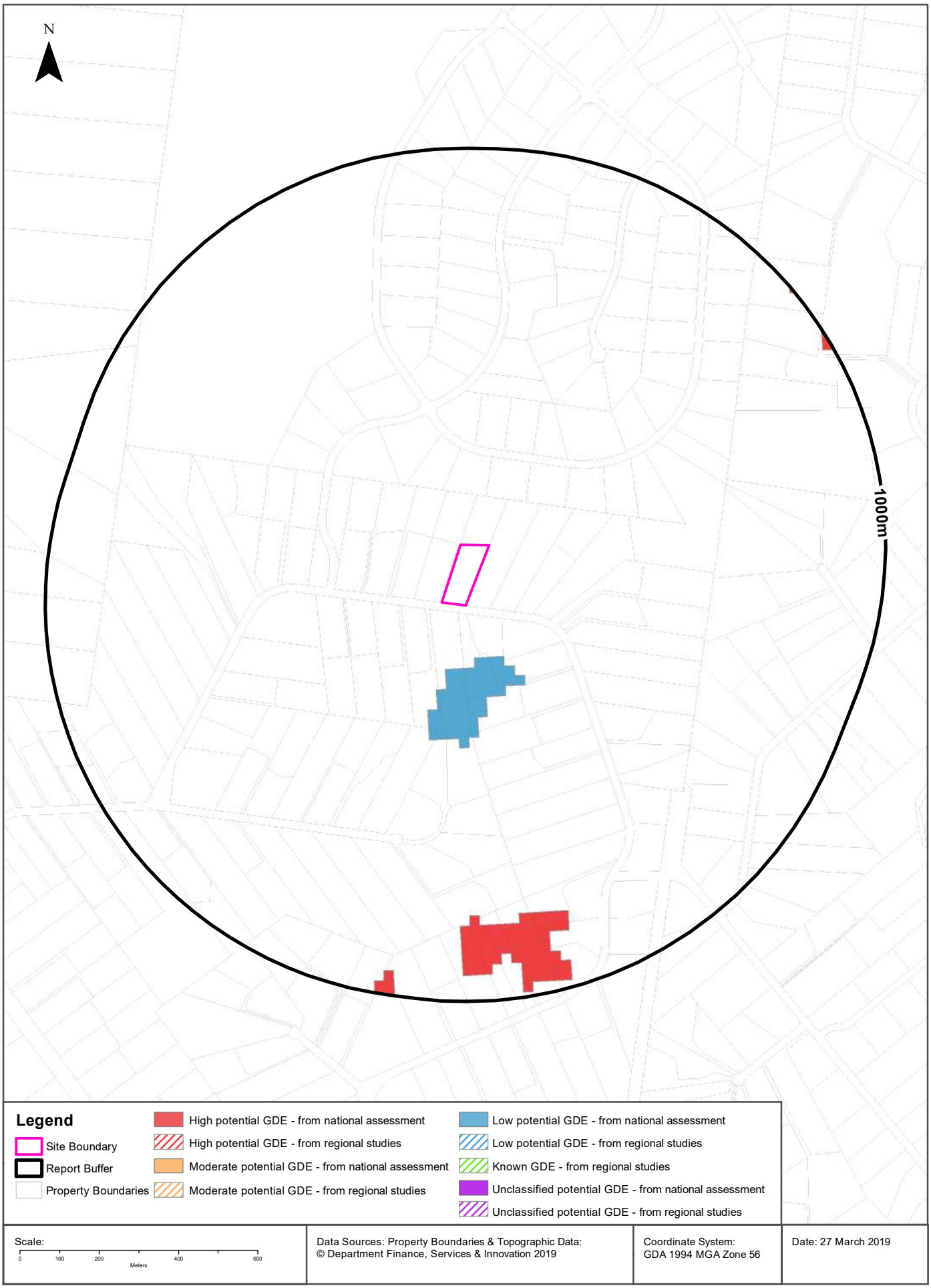
Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

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

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Ecological Constraints

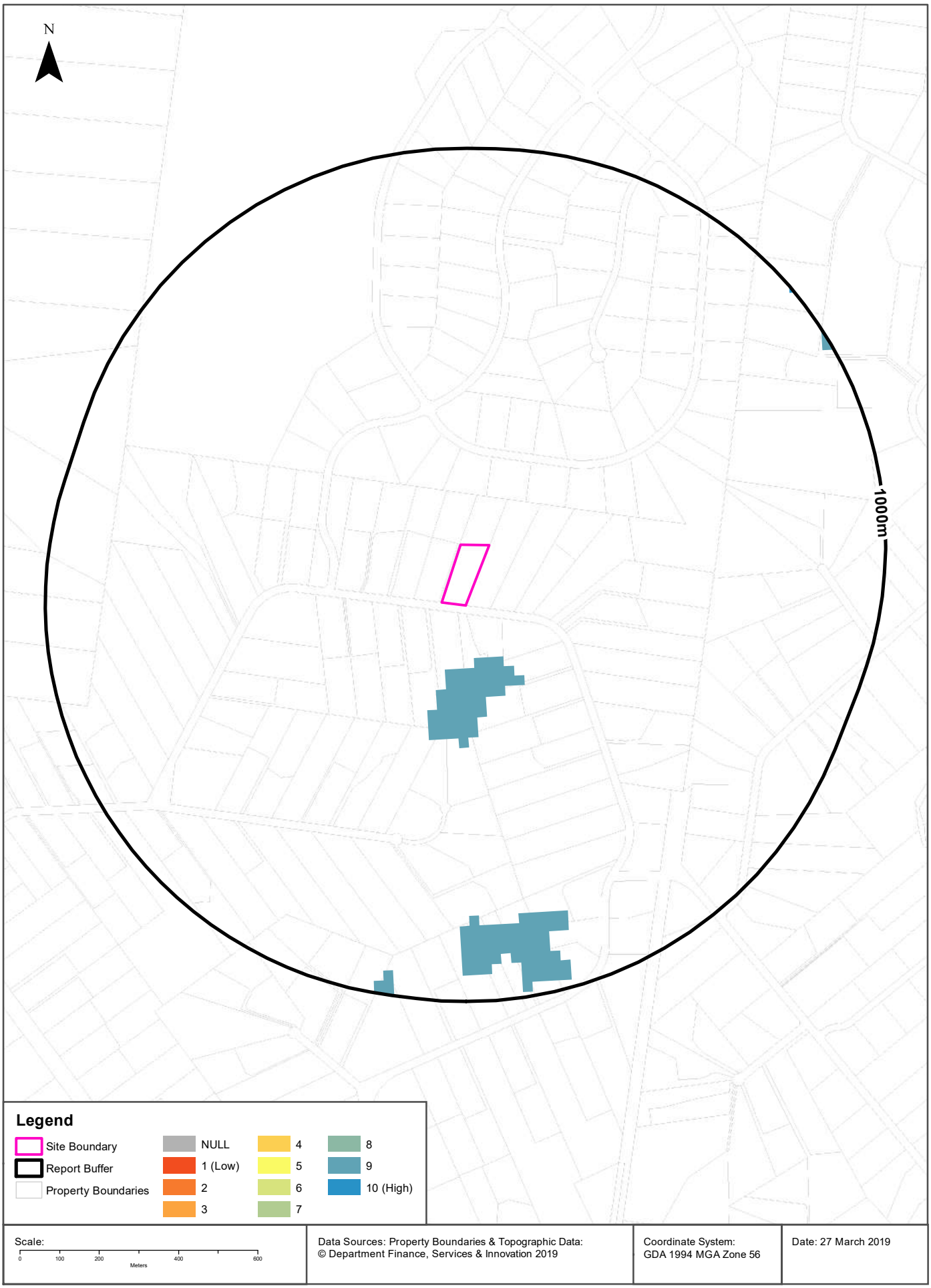
110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	Low potential GDE - from national assessment	Undulating to low hilly country, mainly on shale.	Vegetation	Consolidated sedimentary	133m
Terrestrial	High potential GDE - from national assessment	Undulating to low hilly country, mainly on shale.	Vegetation	Consolidated sedimentary	782m

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

110-112 Mount Vernon Road, Mount Vernon, NSW 2178



Ecological Constraints

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	9	Undulating to low hilly country, mainly on shale.	Vegetation	Consolidated sedimentary	133m
Terrestrial	10	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	988m

Ecological Constraints

110-112 Mount Vernon Road, Mount Vernon, NSW 2178

NSW BioNet Atlas

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardea ibis	Cattle Egret	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Merops ornatus	Rainbow Bee-eater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Plegadis falcinellus	Glossy Ibis	Not Listed	Not Sensitive	Not Listed	CAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Gastropoda	Meridolum corneovirens	Cumberland Plain Land Snail	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bentwing-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Mormopterus norfolkensis	Eastern Freetail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia pubescens	Downy Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Argyrotegium nitidulum	Shining Cudweed	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Cynanchum elegans	White-flowered Wax Plant	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Dillwynia tenuifolia		Endangered Population, Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Dillwynia tenuifolia		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Grevillea juniperina subsp. juniperina	Juniper-leaved Grevillea	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Not Listed	Not Sensitive	Extinct	
Plantae	Flora	Macadamia integrifolia	Macadamia Nut	Not Listed	Not Sensitive	Vulnerable	
Plantae	Flora	Marsdenia viridiflora subsp. viridiflora	Native Pear	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Persoonia nutans	Nodding Geebung	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Pimelea spicata	Spiked Rice-flower	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Pterostylis saxicola	Sydney Plains Greenhood	Endangered	Category 2	Endangered	
Plantae	Flora	Pultenaea parviflora		Endangered	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Pultenaea pedunculata	Matted Bush-pea	Endangered	Not Sensitive	Not Listed	

Data does not include NSW category 1 sensitive species.

Data obtained 27/03/2019

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APPENDIX B: SAMPLING PLAN

LEGEND:
Site Boundary
Other Fences
Landform Element
Watercourses, Dams
Overland Flow Path
Surface Spray Sprinkler
Irrigation Pipework
Soil Borehole
Photo Location
Building Area
Land App. Area
Paved Area

envirotech
Environmental and Engineering Consultancy Services

Wastewater | Contamination | Geotechnical
Stormwater | Ecology | Occupational Hygiene
Bushfire | Acoustic & Noise

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E: info@envirotech.com.au
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T: 1300 888 324 | (02) 9896 1568

TITLE: 110-112 Mount Vernon Road Sampling Map

SHEET SIZE: A4

SCALE: NTS

CLIENT: Graham Mann

PROJECT: 110-112 Mount Vernon Road, Mount Vernon NSW (Penrith LGA)

SHEET: 1/1

DATE: 26/03/2019

PROJECT REF / DRAWING NUMBER: DWG-19-7579-A

APPENDIX C: ALS REPORTS

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1909468**	Page	: 1 of 29
Client	: **ENVIROTECH PTY. LTD.**	Laboratory	: Environmental Division Sydney
Contact	: SIMON DOBERER	Contact	: Customer Services ES
Address	: Level1/1/23 Rowood Rd, Prospect 2148	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: Mount Vermon Road, Mount Vermon	Date Samples Received	: 27-Mar-2019 14:35
Order number	: 757919	Date Analysis Commenced	: 29-Mar-2019
C-O-C number	: ----	Issue Date	: 04-Apr-2019 11:07
Sampler	: Jack Hinchliffe		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 27		
No. of samples analysed	: 27		

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
- Descriptive Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Raymond Commodore	Instrument Chemist	Sydney Inorganics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

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
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	TP1	TP2	TP3	TP4	TP5
			Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit	ES1909468-001	ES1909468-002	ES1909468-003	ES1909468-004	ES1909468-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	20.8	15.6	19.9	22.9	13.4
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	<5	9	7	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	23	18	24	21	19
Copper	7440-50-8	5	mg/kg	20	27	24	22	29
Lead	7439-92-1	5	mg/kg	22	14	18	19	20
Nickel	7440-02-0	2	mg/kg	12	8	8	12	13
Zinc	7440-66-6	5	mg/kg	91	46	48	64	138
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP1	TP2	TP3	TP4	TP5
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-001	ES1909468-002	ES1909468-003	ES1909468-004	ES1909468-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP1	TP2	TP3	TP4	TP5
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-001	ES1909468-002	ES1909468-003	ES1909468-004	ES1909468-005
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP1	TP2	TP3	TP4	TP5
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-001	ES1909468-002	ES1909468-003	ES1909468-004	ES1909468-005
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**80.0**	**74.2**	**80.6**	**73.3**	**71.4**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**81.2**	**75.5**	**100**	**104**	**95.7**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**77.0**	**68.4**	**75.3**	**77.7**	**74.9**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**95.9**	**89.4**	**95.1**	**90.8**	**89.0**
2-Chlorophenol-D4	93951-73-6	0.5	%		**100**	**102**	**97.6**	**95.0**	**103**
2.4.6-Tribromophenol	118-79-6	0.5	%		**102**	**96.9**	**92.3**	**90.7**	**97.8**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**102**	**94.5**	**93.5**	**94.6**	**103**
Anthracene-d10	1719-06-8	0.5	%		**101**	**104**	**105**	**104**	**104**
4-Terphenyl-d14	1718-51-0	0.5	%		**106**	**109**	**111**	**109**	**108**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**119**	**114**	**115**	**123**	**124**
Toluene-D8	2037-26-5	0.2	%		**89.4**	**86.0**	**85.8**	**88.1**	**89.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP1	TP2	TP3	TP4	TP5
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-001	ES1909468-002	ES1909468-003	ES1909468-004	ES1909468-005
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**82.3**	**80.5**	**74.5**	**82.4**	**78.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	TP6	TP7	TP8	TP9	TP10
			Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit	ES1909468-006	ES1909468-007	ES1909468-008	ES1909468-009	ES1909468-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	19.6	16.9	19.0	17.6	24.0
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	10	8	6	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	18	26	17	16	19
Copper	7440-50-8	5	mg/kg	33	19	17	29	16
Lead	7439-92-1	5	mg/kg	19	20	16	12	28
Nickel	7440-02-0	2	mg/kg	16	12	12	13	11
Zinc	7440-66-6	5	mg/kg	124	44	136	86	145
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP6	TP7	TP8	TP9	TP10
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-006	ES1909468-007	ES1909468-008	ES1909468-009	ES1909468-010
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP6	TP7	TP8	TP9	TP10
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-006	ES1909468-007	ES1909468-008	ES1909468-009	ES1909468-010
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP6	TP7	TP8	TP9	TP10
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-006	ES1909468-007	ES1909468-008	ES1909468-009	ES1909468-010
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**76.1**	**77.2**	**81.4**	**79.0**	**74.0**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**99.3**	**107**	**108**	**95.8**	**87.2**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**84.9**	**74.6**	**77.7**	**81.0**	**75.4**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**92.6**	**92.9**	**88.0**	**90.1**	**89.9**
2-Chlorophenol-D4	93951-73-6	0.5	%		**96.7**	**95.9**	**92.7**	**93.2**	**91.1**
2.4.6-Tribromophenol	118-79-6	0.5	%		**85.0**	**103**	**97.4**	**100**	**100**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**102**	**102**	**96.0**	**102**	**102**
Anthracene-d10	1719-06-8	0.5	%		**104**	**103**	**108**	**104**	**103**
4-Terphenyl-d14	1718-51-0	0.5	%		**108**	**107**	**101**	**109**	**108**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**120**	**133**	**129**	**124**	**113**
Toluene-D8	2037-26-5	0.2	%		**86.0**	**91.0**	**95.0**	**88.3**	**81.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP6	TP7	TP8	TP9	TP10
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-006	ES1909468-007	ES1909468-008	ES1909468-009	ES1909468-010
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**79.1**	**87.9**	**89.0**	**80.2**	**79.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	TP11	TP12	TP13	TP14	TP15
			Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit	ES1909468-011	ES1909468-012	ES1909468-013	ES1909468-014	ES1909468-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	28.9	24.0	18.7	18.3	19.2
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	6	8	8	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	15	15	30	18	18
Copper	7440-50-8	5	mg/kg	16	17	22	19	18
Lead	7439-92-1	5	mg/kg	36	35	22	15	18
Nickel	7440-02-0	2	mg/kg	10	10	10	10	10
Zinc	7440-66-6	5	mg/kg	109	96	51	45	54
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP11	TP12	TP13	TP14	TP15
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-011	ES1909468-012	ES1909468-013	ES1909468-014	ES1909468-015
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP11	TP12	TP13	TP14	TP15
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-011	ES1909468-012	ES1909468-013	ES1909468-014	ES1909468-015
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP11	TP12	TP13	TP14	TP15
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-011	ES1909468-012	ES1909468-013	ES1909468-014	ES1909468-015
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**74.8**	**77.9**	**71.4**	**78.6**	**72.4**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**87.9**	**85.6**	**88.3**	**96.8**	**82.5**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**66.2**	**77.7**	**92.2**	**77.3**	**66.0**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**89.2**	**90.0**	**86.0**	**91.0**	**86.6**
2-Chlorophenol-D4	93951-73-6	0.5	%		**92.3**	**93.3**	**98.5**	**93.7**	**88.8**
2.4.6-Tribromophenol	118-79-6	0.5	%		**96.8**	**98.4**	**95.0**	**99.5**	**92.4**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**101**	**95.2**	**95.6**	**96.2**	**92.5**
Anthracene-d10	1719-06-8	0.5	%		**101**	**104**	**105**	**107**	**104**
4-Terphenyl-d14	1718-51-0	0.5	%		**106**	**110**	**111**	**98.6**	**110**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**118**	**123**	**113**	**124**	**121**
Toluene-D8	2037-26-5	0.2	%		**85.0**	**95.5**	**81.3**	**81.8**	**86.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP11	TP12	TP13	TP14	TP15
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-011	ES1909468-012	ES1909468-013	ES1909468-014	ES1909468-015
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**83.4**	**89.0**	**79.8**	**75.3**	**79.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	TP16	TP17	TP18	TP19	TP20
			Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit	ES1909468-016	ES1909468-017	ES1909468-018	ES1909468-019	ES1909468-020
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	19.6	11.6	15.8	13.8	17.2
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	19	<5	6	6	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	21	9	18	20	21
Copper	7440-50-8	5	mg/kg	47	32	12	15	15
Lead	7439-92-1	5	mg/kg	61	13	14	18	20
Nickel	7440-02-0	2	mg/kg	13	16	6	8	12
Zinc	7440-66-6	5	mg/kg	449	61	28	58	45
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP16	TP17	TP18	TP19	TP20
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-016	ES1909468-017	ES1909468-018	ES1909468-019	ES1909468-020
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP16	TP17	TP18	TP19	TP20
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-016	ES1909468-017	ES1909468-018	ES1909468-019	ES1909468-020
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP16	TP17	TP18	TP19	TP20
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-016	ES1909468-017	ES1909468-018	ES1909468-019	ES1909468-020
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**75.0**	**76.0**	**75.8**	**73.0**	**74.9**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**90.9**	**109**	**87.4**	**91.1**	**89.0**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**89.9**	**90.1**	**80.3**	**86.2**	**90.2**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**83.2**	**84.1**	**86.1**	**82.0**	**91.4**
2-Chlorophenol-D4	93951-73-6	0.5	%		**87.4**	**93.2**	**90.3**	**86.0**	**96.0**
2.4.6-Tribromophenol	118-79-6	0.5	%		**83.2**	**96.1**	**96.0**	**88.2**	**90.7**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**94.1**	**96.1**	**95.9**	**102**	**94.1**
Anthracene-d10	1719-06-8	0.5	%		**103**	**106**	**107**	**103**	**107**
4-Terphenyl-d14	1718-51-0	0.5	%		**108**	**104**	**102**	**109**	**105**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**122**	**119**	**122**	**121**	**117**
Toluene-D8	2037-26-5	0.2	%		**80.1**	**90.2**	**84.8**	**79.8**	**77.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP16	TP17	TP18	TP19	TP20
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-016	ES1909468-017	ES1909468-018	ES1909468-019	ES1909468-020
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**75.5**	**82.9**	**78.9**	**75.8**	**75.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	TP21	ASB1	ASB2	ASB3	ASB4
			Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit	ES1909468-021	ES1909468-022	ES1909468-023	ES1909468-024	ES1909468-025
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	20.2	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	Yes	Yes	Yes	No
Asbestos (Trace)	1332-21-4	5	Fibres	----	No	No	No	No
Asbestos Type	1332-21-4	-	--	----	Ch + Am	Ch + Am + Cr	Ch + Am + Cr	-
Sample weight (dry)	----	0.01	g	----	210	421	314	313
APPROVED IDENTIFIER:	----	-	--	----	C.OWLER	C.OWLER	C.OWLER	C.OWLER
Synthetic Mineral Fibre	----	0.1	g/kg	----	No	No	No	No
Organic Fibre	----	0.1	g/kg	----	No	No	No	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	19	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	30	----	----	----	----
Copper	7440-50-8	5	mg/kg	62	----	----	----	----
Lead	7439-92-1	5	mg/kg	87	----	----	----	----
Nickel	7440-02-0	2	mg/kg	9	----	----	----	----
Zinc	7440-66-6	5	mg/kg	289	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.3	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP21	ASB1	ASB2	ASB3	ASB4
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-021	ES1909468-022	ES1909468-023	ES1909468-024	ES1909468-025
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)A: Phenolic Compounds									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP21	ASB1	ASB2	ASB3	ASB4
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-021	ES1909468-022	ES1909468-023	ES1909468-024	ES1909468-025
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
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	----	----	----	----
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									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP21	ASB1	ASB2	ASB3	ASB4
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-021	ES1909468-022	ES1909468-023	ES1909468-024	ES1909468-025
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
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	%		**73.3**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**87.6**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**63.4**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**90.1**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**104**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**77.1**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP21	ASB1	ASB2	ASB3	ASB4
				Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00	26-Mar-2019 00:00
Compound	CAS Number	LOR	Unit		ES1909468-021	ES1909468-022	ES1909468-023	ES1909468-024	ES1909468-025
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		102	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		101	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		109	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		94.6	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		101	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		110	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	ASB5	ASB6	----	----	----
			Client sampling date / time	26-Mar-2019 00:00	26-Mar-2019 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1909468-026	ES1909468-027	--------	--------	--------
				Result	Result	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**Yes**	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	----	----	----
Asbestos Type	1332-21-4	-	--	**-**	**Ch + Am + Cr**	----	----	----
Sample weight (dry)	----	0.01	g	**304**	**298**	----	----	----
APPROVED IDENTIFIER:	----	-	--	**C.OWLER**	**C.OWLER**	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	----	----	----
Organic Fibre	----	0.1	g/kg	**No**	**No**	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	ASB1 - 26-Mar-2019 00:00	Mid brown soil plus three pieces of asbestos cement sheeting approx 50 x 40 x 5mm.
EA200: Description	ASB2 - 26-Mar-2019 00:00	Mid brown soil plus three pieces of asbestos cement sheeting approx 60 x 50 x 5mm.
EA200: Description	ASB3 - 26-Mar-2019 00:00	Mid brown soil plus one piece of asbestos cement sheeting approx 80 x 30 x 5mm.
EA200: Description	ASB4 - 26-Mar-2019 00:00	Mid brown soil.
EA200: Description	ASB5 - 26-Mar-2019 00:00	Mid brown soil.
EA200: Description	ASB6 - 26-Mar-2019 00:00	Mid brown soil plus two larger pieces of asbestos cement sheeting approx 80 x 40 x 5mm and one smaller piece of asbestos cement sheeting approx 5 x 4 x 3mm.

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

2/4/19

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

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☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Envirotech PTY LTD	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date): (Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	FOR LABORATORY USE ONLY (Circle) Custody seal intact? Yes / No / N/A; Cooling agent present? Yes / No / N/A; Random Sample Temperature on Receipt: °C; Cash or comment:
OFFICE: Prospect		
PROJECT: Mount Vernon Road, MOUNT VERNON	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
ORDER NUMBER: 757919		
PROJECT MANAGER: Simon Doberer	CONTACT PH: 029898 1568	
SAMPLER: Jack Hinchliffe	SAMPLER MOBILE:	RELINQUISHED BY: Simon Doberer; DATE/TIME: 27/03/2019
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	RECEIVED BY: DATE/TIME: 27/3/19 1435
Email Reports to (will default to PM if no other addresses are listed): simon@envirotech.com.au		RELINQUISHED BY: DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed): accurateaccounts@bigpond.com		RECEIVED BY: DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).							Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S-19	Asbestos (presence/non)						Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	TP1	26-03-19	S		1	✓							
2	TP2	26-03-19	S		1	✓							
3	TP3	26-03-19	S		1	✓							
4	TP4	26-03-19	S		1	✓							
5	TP5	26-03-19	S		1	✓							
6	TP6	26-03-19	S		1	✓							
7	TP7	26-03-19	S		1	✓							
8	TP8	26-03-19	S		1	✓							
9	TP9	26-03-19	S		1	✓							
10	TP10	26-03-19	S		1	✓							
11	TP11	26-03-19	S		1	✓							
12	TP12	26-03-19	S		1	✓							
				TOTAL	40	20	20						

Subcon / Forward Lab / Split WO
Lab / Analysis: Asbestos → Newcastle
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No:
Attach By PO / Internal Sheet:

Environmental Division
Sydney
Work Order Reference
ES1909468

Telephone : + 61-2-8784 8555

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 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 = Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

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WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Envirotech PTY LTD	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☐ Standard TAT **(List due date):**	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: Prospect		☐ Non Standard or urgent TAT **(List due date):**	Custody Seal Intact: Yes / No / N/A
PROJECT: Mount Vernon Road, MOUNT VERNON	**ALS QUOTE NO.:**	**COC SEQUENCE NUMBER (Circle)** COC: 1 2 3 4 5 6 7	Freezer Ice Bricks present Upon Arrival: Yes / No / N/A
ORDER NUMBER: 757919		OF: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Simon Doberer	**CONTACT PH:** 029896 1568		Cooler Comment: 14-1
SAMPLER: Jack Hinchliffe	**SAMPLER MOBILE:**	**RELINQUISHED BY:**	**RECEIVED BY:**
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):**	*Simon Doberer*	DATE/TIME: 27/3/19 1435
Email Reports to (will default to PM if no other addresses are listed): simon@envirotech.com.au		DATE/TIME: 27/03/2019	**RELINQUISHED BY:** DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed): accurateaccounts@bigpond.com			**RECEIVED BY:** DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL CONTAINERS	S-19	Asbestos (present/non)							Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
13	TP13	26-03-19	S		1	✓								
14	TP14	26-03-19	S		1	✓								
15	TP15	26-03-19	S		1	✓								
16	TP16	26-03-19	S		1	✓								
17	TP17	26-03-19	S		1	✓								
18	TP18	26-03-19	S		1	✓								
19	TP19	26-03-19	S		1	✓								
20	TP20	26-03-19	S		1	✓								
21	TP21	26-03-19	S		1	✓								
22	ASB1	26-03-19	S		1		✓							
23	ASB2	26-03-19	S		1		✓							
24	ASB3	26-03-19	S		1		✓							
				TOTAL	27	21	6							

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

MELBOURNE 24 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com

NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Envirotech PTY LTD	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)** Custody Seal Intact? Yes No N/A; Cooling Medium Present? Yes No N/A; Random Sample Temperature on Receipt: 14.1 °C; Other comment:
OFFICE: Prospect		
PROJECT: Mount Vernon Road, MOUNT VERNON	**ALS QUOTE NO.:**	**COC SEQUENCE NUMBER (Circle)** COC: 1 2 3 4 5 6 7
ORDER NUMBER: 757919		OF: 1 2 3 4 5 6 7
PROJECT MANAGER: Simon Doberer	**CONTACT PH:** 029896 1568	
SAMPLER: Jack Hinchliffe	**SAMPLER MOBILE:**	**RELINQUISHED BY:** *Simon Doberer*
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):**	DATE/TIME: 27/03/2019
Email Reports to (will default to PM if no other addresses are listed): simon@envirotech.com.au		
Email Invoice to (will default to PM if no other addresses are listed): accurateaccounts@bigpond.com		

RECEIVED BY	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME: 27/3/19 1435	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).							Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL CONTAINERS	S-19	Asbestos (presen/non)							Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
25	ASB4	26-03-19	S		1		√							
26	ASB5	26-03-19	S		1		√							
27	ASB6	26-03-19	S		1		√							
				TOTAL	27	21	6							

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.

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1909468**	Page	: 1 of 9
Client	: **ENVIROTECH PTY. LTD.**	Laboratory	: Environmental Division Sydney
Contact	: SIMON DOBERER	Telephone	: +61-2-8784 8555
Project	: Mount Vermon Road, Mount Vermon	Date Samples Received	: 27-Mar-2019
Site	: ----	Issue Date	: 04-Apr-2019
Sampler	: Jack Hinchliffe	No. of samples received	: 27
Order number	: 757919	No. of samples analysed	: 27

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method / 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)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**----**	----	----	**29-Mar-2019**	09-Apr-2019	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag: Separate bag received (EA200)							
ASB1, ASB2, ASB3, ASB4, ASB5, ASB6	**26-Mar-2019**	**----**	----	----	**29-Mar-2019**	22-Sep-2019	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	22-Sep-2019	✓	**29-Mar-2019**	22-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
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	23-Apr-2019	✓	**30-Mar-2019**	23-Apr-2019	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	09-Apr-2019	✓	**30-Mar-2019**	08-May-2019	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	09-Apr-2019	✓	**30-Mar-2019**	08-May-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
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	09-Apr-2019	✓	**30-Mar-2019**	08-May-2019	✓
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	09-Apr-2019	✓	**30-Mar-2019**	08-May-2019	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	09-Apr-2019	✓	**30-Mar-2019**	08-May-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
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	09-Apr-2019	✓	**29-Mar-2019**	09-Apr-2019	✓
Soil Glass Jar - Unpreserved (EP071)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	09-Apr-2019	✓	**30-Mar-2019**	08-May-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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	09-Apr-2019	✓	**29-Mar-2019**	09-Apr-2019	✓
Soil Glass Jar - Unpreserved (EP071)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	09-Apr-2019	✓	**30-Mar-2019**	08-May-2019	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21	**26-Mar-2019**	**29-Mar-2019**	09-Apr-2019	✓	**29-Mar-2019**	09-Apr-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)							
Moisture Content	EA055	4	35	**11.43**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	4	35	**11.43**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	4	35	**11.43**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	30	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (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)
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)
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.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (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.

QUALITY CONTROL REPORT

Work Order	: **ES1909468**	Page	: 1 of 21
Client	: **ENVIROTECH PTY. LTD.**	Laboratory	: Environmental Division Sydney
Contact	: SIMON DOBERER	Contact	: Customer Services ES
Address	: Level1/1/23 Rowood Rd, Prospect 2148	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: Mount Vermon Road, Mount Vermon	Date Samples Received	: 27-Mar-2019
Order number	: 757919	Date Analysis Commenced	: 29-Mar-2019
C-O-C number	: ----	Issue Date	: 04-Apr-2019
Sampler	: Jack Hinchliffe		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 27		
No. of samples analysed	: 27		

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*
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Raymond Commodore	Instrument Chemist	Sydney Inorganics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

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: 2266195)									
ES1909320-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	30	29	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	19	18	7.04	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	6	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	17	16	6.58	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	11	10	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	29	27	7.77	No Limit
ES1909320-011	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	38	38	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	23	23	0.00	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	7	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	21	21	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	10	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	26	25	0.00	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2266198)									
ES1909468-006	TP6	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	18	20	13.9	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	16	17	6.83	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	33	39	17.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	21	9.69	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	124	130	4.69	0% - 20%
ES1909468-016	TP16	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	21	22	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	13	13	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: 2266198) - continued									
ES1909468-016	TP16	EG005T: Arsenic	7440-38-2	5	mg/kg	19	16	17.1	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	47	58	21.2	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	61	59	4.16	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	449	425	5.37	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2266105)									
ES1909468-003	TP3	EA055: Moisture Content	----	0.1	%	19.9	19.7	1.30	0% - 50%
ES1909468-014	TP14	EA055: Moisture Content	----	0.1	%	18.3	18.9	3.25	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2266106)									
ES1909470-002	Anonymous	EA055: Moisture Content	----	0.1	%	17.3	16.6	3.69	0% - 50%
ES1909470-013	Anonymous	EA055: Moisture Content	----	0.1	%	11.2	11.0	2.43	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2266196)									
ES1909320-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1909320-011	Anonymous	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: 2266197)									
ES1909468-006	TP6	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1909468-016	TP16	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.2	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2265515)									
ES1909468-001	TP1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1909468-011	TP11	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2265517)									
ES1909470-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1909470-010	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2265514)									
ES1909468-001	TP1	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

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: 2265514) - continued									
ES1909468-001	TP1	EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES1909468-011	TP11	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2265520)									
ES1909470-001	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
		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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2265520) - continued									
ES1909470-001	Anonymous	EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES1909470-010	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
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2265514)									
ES1909468-001	TP1	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

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: 2265514) - continued									
ES1909468-001	TP1	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
ES1909468-011	TP11	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2265520)									
ES1909470-001	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

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: 2265520) - continued									
ES1909470-001	Anonymous	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
ES1909470-010	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
EP075(SIM)A: Phenolic Compounds (QC Lot: 2265513)									
ES1909468-001	TP1	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

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)A: Phenolic Compounds (QC Lot: 2265513) - continued									
ES1909468-011	TP11	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)A: Phenolic Compounds (QC Lot: 2265519)									
ES1909470-001	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
ES1909470-010	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2265513)									
ES1909468-001	TP1	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

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: 2265513) - continued									
ES1909468-001	TP1	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1909468-011	TP11	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2265519)									
ES1909470-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2265519) - continued									
ES1909470-001	Anonymous	EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1909470-010	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2265348)									

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 (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2265348) - continued									
ES1909468-001	TP1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1909468-011	TP11	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2265387)									
ES1909534-005	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2265512)									
ES1909468-001	TP1	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
ES1909468-011	TP11	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2265518)									
ES1909470-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1909470-010	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2265348)									
ES1909468-001	TP1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1909468-011	TP11	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: 2265387)									
ES1909534-005	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: 2265512)									
ES1909468-001	TP1	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
ES1909468-011	TP11	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2265518)									
ES1909470-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1909470-010	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
EP080: BTEXN (QC Lot: 2265348)									
ES1909468-001	TP1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	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: 2265348) - continued									
ES1909468-001	TP1	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
ES1909468-011	TP11	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
EP080: BTEXN (QC Lot: 2265387)									
ES1909534-005	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

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: 2266195)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	101	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	101	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	95.7	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	106	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	108	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	103	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	111	80	122
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2266198)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	106	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	104	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	94.6	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	102	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	82.1	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	106	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	107	80	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2266196)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	81.2	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2266197)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	80.8	70	105
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2265515)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	117	62	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2265517)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	98.0	62	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 2265514)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	106	69	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	107	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	93.5	63	117

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
EP068A: Organochlorine Pesticides (OC) (QCLot: 2265514) - continued								
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	66	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.0	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.1	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.4	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	86.0	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	62	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	84.1	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	74.8	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	105	54	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2265520)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	101	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	93.2	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.7	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	108	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	78.3	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	104	69	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	97.4	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.0	63	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	66	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	101	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.8	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	94.7	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.0	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	85.6	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.9	62	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	96.7	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	108	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	103	54	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2265514)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	92.4	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	74.5	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	76.3	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	76.8	67	119

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: 2265514) - continued								
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.7	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	91.9	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	77.2	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	99.1	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	80.7	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	99.5	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	80.5	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.4	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.6	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.6	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	80.6	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.2	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	64.0	41	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2265520)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	95.4	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.9	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	91.7	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	82.7	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	82.3	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	80.8	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.5	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.0	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	82.2	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	105	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	102	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	102	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.1	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	102	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.0	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	79.1	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	88.4	41	123
EP075(SIM)A: Phenolic Compounds (QCLot: 2265513)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	90.2	71	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	89.9	72	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	92.8	71	123

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
EP075(SIM)A: Phenolic Compounds (QCLot: 2265513) - continued								
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	95.0	67	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	84.8	54	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	92.4	68	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	92.6	66	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	90.7	70	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	90.2	70	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	83.0	54	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	83.3	60	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	47.2	10	57
EP075(SIM)A: Phenolic Compounds (QCLot: 2265519)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	97.9	71	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	95.8	72	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	91.7	71	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	94.3	67	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	84.4	54	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	92.5	68	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	95.3	66	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	96.2	70	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	92.4	70	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	79.5	54	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	82.2	60	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	37.3	10	57
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2265513)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	92.4	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	92.7	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	92.1	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	95.1	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	96.9	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	98.1	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	95.5	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	96.0	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	94.8	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	95.6	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	93.2	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	96.0	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	97.6	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	90.7	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	90.5	62	118

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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2265513) - continued								
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	93.4	63	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2265519)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	92.3	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	99.2	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	92.6	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	96.4	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	97.8	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	98.0	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	93.1	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	96.6	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	99.9	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	98.8	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	95.0	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	94.6	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	96.6	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	83.8	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	84.2	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	86.7	63	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2265348)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	118	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2265387)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	95.1	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2265512)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	90.1	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	94.5	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	93.7	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2265518)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	87.1	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	106	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	95.6	71	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2265348)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	116	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2265387)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	98.0	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2265512)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	91.2	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	95.3	74	138

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2265512) - continued								
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	85.3	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2265518)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	105	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	104	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	74.0	63	131
EP080: BTEXN (QCLot: 2265348)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	113	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	89.7	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	86.7	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	99.4	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	92.4	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	114	63	119
EP080: BTEXN (QCLot: 2265387)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	103	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	105	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	104	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	104	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	102	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	106	63	119

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: 2266195)							
ES1909320-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	92.1	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.5	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	90.7	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	101	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	74.7	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	91.6	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	94.7	70	130
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2266198)							

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: 2266198) - continued							
ES1909468-006	TP6	EG005T: Arsenic	7440-38-2	50 mg/kg	98.3	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	101	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	99.4	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	78.0	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	95.0	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	96.1	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2266196)							
ES1909320-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.3	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2266197)							
ES1909468-006	TP6	EG035T: Mercury	7439-97-6	5 mg/kg	99.5	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2265515)							
ES1909468-001	TP1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	96.0	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2265517)							
ES1909470-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	96.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2265514)							
ES1909468-001	TP1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	121	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	87.0	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	124	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	88.8	70	130
		EP068: Endrin	72-20-8	2 mg/kg	127	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	103	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2265520)							
ES1909470-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	111	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	113	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	117	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	76.6	70	130
		EP068: Endrin	72-20-8	2 mg/kg	94.7	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	95.0	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2265514)							
ES1909468-001	TP1	EP068: Diazinon	333-41-5	0.5 mg/kg	78.6	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	81.6	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	76.4	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	91.7	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	93.2	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2265520)							

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
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2265520) - continued							
ES1909470-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	87.8	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	81.6	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	104	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	101	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	76.9	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 2265513)							
ES1909468-001	TP1	EP075(SIM): Phenol	108-95-2	10 mg/kg	95.0	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.5	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	96.5	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	95.0	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	57.3	20	130
EP075(SIM)A: Phenolic Compounds (QCLot: 2265519)							
ES1909470-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	92.0	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	99.0	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	81.1	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	92.5	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	62.0	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2265513)							
ES1909468-001	TP1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	96.8	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	97.0	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2265519)							
ES1909470-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	96.6	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	97.3	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2265348)							
ES1909468-001	TP1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.6	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2265387)							
ES1909534-005	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	113	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2265512)							
ES1909468-001	TP1	EP071: C10 - C14 Fraction	----	523 mg/kg	99.4	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	117	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	131	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2265518)							
ES1909470-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	102	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	112	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	119	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2265348)							

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*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2265348) - continued							
ES1909468-001	TP1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	103	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2265387)							
ES1909534-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	113	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2265512)							
ES1909468-001	TP1	EP071: >C10 - C16 Fraction	----	860 mg/kg	102	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	128	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	118	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2265518)							
ES1909470-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	106	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	125	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	120	52	132
EP080: BTEXN (QCLot: 2265348)							
ES1909468-001	TP1	EP080: Benzene	71-43-2	2.5 mg/kg	101	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	87.7	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	91.6	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	95.7	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	94.7	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	99.3	70	130
EP080: BTEXN (QCLot: 2265387)							
ES1909534-005	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	110	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	111	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	112	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	110	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	109	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	115	70	130