

# STAGE 1 PRELIMINARY SITE INVESTIGATION

90 GINDURRA RD  
SOMERSBY NSW 2250

Client:

**Kariong Soil and Sand Supplies**  
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Reference:	Revision:	Date of Report:	Prepared By:	Authorised By:
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# Executive Summary

Note: This Executive Summary must not be read in isolation, but should be read in conjunction with all sections of this report.

Clearsafe Environmental Solutions Pty Ltd (Clearsafe) was engaged by Kariong Soil and Sand Supplies (C/- Jackson Environment and Planning Pty Ltd) to undertake a Stage 1 Preliminary Site Investigation with limited sampling of a nominated portion of the property located at 90 Gindurra Rd, Somersby NSW 2250 (hereafter referred to as 'The Site'). Clearsafe understands from the information provided by Jackson Environment and Planning Pty Ltd that a Preliminary Site Investigation (Phase 1) with limited sampling is required to comply with development application conditions for the proposed industrial development of the site for use as a Construction and Demolition Recycling Facility. The purpose of the Stage 1 PSI is to assess the nature / extent of soil contamination, if any, and identify areas of environmental concern (AEC).

The scope of the Stage 1 Investigation was to undertake a desktop review of the site's past land uses together with a site walkover inspection and a limited sampling regime to assess the subject site for evidence of contamination or prior contaminating activities. The investigation aims to assess the suitability of the site for the proposed industrial development (Construction and Demolition Recycling Facility) and provide preliminary advice as to whether further investigation is required. The following scope of work was completed as part of the assessment:

- Review of historical aerial photographs
- Review of Section 149 Planning Certificates
- Search of EPA registered contaminated lands records
- Review of Acid Sulphate Soils maps
- Site walk-over inspection by qualified environmental consultants to identify potential sources of environmental concern
- Limited targeted soil sampling and analysis in a total of twenty (20) locations.
- Preparation of a Stage 1 Preliminary Site Investigation report.

**Note:** Clearsafe were advised by the client that the scope of the current assessment was limited to assessing soils from ground level only and excludes the assessment of stockpiled materials. It is understood that stockpiled materials will be subject to a detailed waste classification assessment to be undertaken by another consulting company.

The following conclusions are drawn within the scope and limitations of the investigation:

- Based on the review of information from the desktop study and site inspection, the site appears to have previously been used for storing and screening soil and sand, which was then sold for landscaping.
- The information obtained from the review of available site history materials and site inspection identified four (4) potential Areas of Environmental Concern (AEC):

- AEC 1 - Fill Materials of Unknown Origin - Fill materials and natural soils within the site were tested for a range of potential contaminants of concern. The samples tested reported results below the adopted criteria for the proposed development excluding 20-8613/TP3 - 0.5m, which reported a zinc concentration of 575 mg/kg which slightly exceeded the adopted ecological investigation levels. Results from three neighbouring test pits (<20m away) and all other other test pits from across the site were analysed to be below the adopted criteria. The Zinc result for this sample appears to be an outlier and is considerably lower than Health Investigation Levels. Therefore no significant risk of chemical contamination is expected across the site.
- AEC 2 - Asbestos Containing Material - During the sampling, multiple fragments of non-friable asbestos cement (AC) were identified on ground surfaces within the north-eastern section of the site adjacent the buildings as well as in the central section of site.
- AEC 3 - Hazardous Building Materials - Due to the age of the onsite buildings and structures, it is likely that hazardous building materials including but not limited to asbestos containing materials and lead paint may be present within these structures.

Based on the scope and limitations of the investigation, in consideration of the site observations and sample analytical results, it is considered that the site is unlikely to pose a significant contamination risk with regards to chemical contamination, however ACM was identified on ground surfaces within the north-eastern and central sections of site. Subsequently, it is the opinion of the inspector that the site is considered suitable for the proposed development subject to the following recommendations:

- An appropriate Asbestos Management Plan should be implemented prior to any development to manage the identified non-friable ACM associated with AEC 2.
- The Asbestos Management Plan should include detailed inspection and remediation prior to any future development.
- Asbestos removal should be undertaken in accordance with an Asbestos Removal Scope of Works / Remedial Action Plan prepared by a Licensed Asbestos Assessor or Competent Person.
- Asbestos removal works should be undertaken by a licensed asbestos removal contractor.
- Subsequent to licensed asbestos removal work, a Clearance Certificate must be issued by a Licensed Asbestos Assessor or Competent Person prior to reoccupation.
- Construction works should include an Unexpected Finds Protocol (UFP) to provide recommended actions for the identification of any further ACM on the ground surfaces or within excavations.
- The Site must be managed such that the ground surfaces are at all times free of visible ACM. Any identified ACM must be managed in accordance with the UFP.

- Prior to demolition, the onsite buildings and structures should be assessed for hazardous materials including but not limited to asbestos and lead paint. All asbestos containing materials within the buildings and structures at the site must be removed prior to demolition in accordance with Safe Work Australia Codes of Practice.

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## 1 Introduction

Clearsafe Environmental Solutions Pty Ltd (Clearsafe) was engaged by Kariong Soil and Sand Supplies (C/- Jackson Environment and Planning Pty Ltd) to undertake a Stage 1 Preliminary Site Investigation with limited sampling of a nominated portion of the property located at 90 Gindurra Rd, Somersby NSW 2250 (hereafter referred to as 'The Site'). Clearsafe understands from the information provided by Jackson Environment and Planning Pty Ltd that a Preliminary Site Investigation (Phase 1) with limited sampling is required to comply with development application conditions for the proposed industrial development of the site for use as a Construction and Demolition Recycling Facility. The purpose of the Stage 1 PSI is to assess the nature / extent of soil contamination, if any, and identify areas of environmental concern (AEC).

## 2 Limitations

All work is conducted in a conscientious and professional manner, with due diligence and appropriate care. However due to the disproportionate cost of potential damages or liability relative to the cost of our services, Clearsafe cannot offer any guarantee that all hazards have been identified. Subsequently, Clearsafe's liability to the client or any other party resulting from the performance or non-performance of the service, whether under contract law, tort law or otherwise, is limited to a maximum of up to five (5) times the total fee excluding expenses.

Clearsafe reports are not to be reproduced or reviewed except in full. All reports are prepared for a particular client's objective, and therefore should not be used by any third party as a basis for future decision-making.

Clearsafe relies on the accuracy of information provided by the client.

The results of monitoring represent conditions only at the monitoring location(s) at the time of monitoring. Dense vegetation/grass cover was present at the time of the assessment which can obscure and limit the accuracy of the visual inspection. Additional assessment may be considered at a time when vegetation cover has been removed.

All work is undertaken in accordance with our Terms and Conditions of Engagement, available from our website [www.clearsafe.com.au](http://www.clearsafe.com.au).

Any Party that uses or relies on this document, in doing so acknowledges, on behalf of themselves and all other legal entities that they represent, the unequivocal approval, acceptance and endorsement of the limitations and exclusions stated within this document, else this document should not be used or relied upon for any purpose.

### 3 Scope and Objectives of the Investigation

The scope of the Stage 1 Investigation was to undertake a desktop review of the site's past land uses together with a site walkover inspection and a limited sampling regime to assess the subject site for evidence of contamination or prior contaminating activities. The investigation aims to assess the suitability of the site for the proposed industrial development (Construction and Demolition Recycling Facility) and provide preliminary advice as to whether further investigation is required. The following scope of work was completed as part of the assessment:

- Review of historical aerial photographs
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**Note:** Clearsafe were advised by the client that the scope of the current assessment was limited to assessing soils from ground level only and excludes the assessment of stockpiled materials. It is understood that stockpiled materials will be subject to a detailed waste classification assessment to be undertaken by another consulting company.

## 4 Proposed Development

The proposed development will allow the site to receive, process and store up to 200,000 tonnes per annum of soil, sand and building materials. The complete development would require: installation of security fencing; construction of a hardstand area for processing material; construction of storage bays for processed material; construction of on-site roads suitable for large vehicles; construction of a truck parking area; construction of an office and maintenance workshop; and construction of stormwater run-off and drainage/treatment infrastructure. It is anticipated that a total final area of the developed operational area on the site will be approximately 39,000 m<sup>2</sup>.

## 5 Site Identification

The Site is located at 90 Gindurra Rd Somersby, NSW 2250 and is bound by Gindurra Rd / Debenham Rd S to the north, a forest habitat area to the west, agricultural / residential properties to the east and Kangoo Rd to the south (site boundary illustrated in Figure 1). The site is comprised of a singular land parcel, Lot 4 DP 227279 and has a total area of approximately 107,600m<sup>2</sup>. The proposed development area (as advised by the client) encompasses the northern section of the site only covering an area of approximately 39,000m<sup>2</sup>.



KEY	SITE LOCATION
Site Boundary	90 Gindurra Road
Area of proposed development	Somersby NSW 2250

**Figure 1:** 90 Gindurra Rd, Somersby NSW 2250 (Source: Central Coast Council)

## 6 Geology and Hydrology

The “Clark N.R. and Jones D.C., 1991, Gosford- Lake Macquarie 1:100 000 Geological Sheet 9030, 1st edition. Geological Survey of New South Wales, Sydney” classifies the site as being located within:

- Middle Triassic Age - Hawkesbury sandstone, medium to very coarse-grained quartz sandstone, minor laminated mudstone and siltstone lenses.

Soil Landscapes of the Gosford 1:100 000 Sheet Survey (1000133), Profile 257, collected from a auger by Mr Casey Murphy on November 29, 1988.

- Physiography: woodland shrub understorey on sandstone-quartz lithology and used for timber/scrub/unused. Slope 2.0% (measured), elevation 200.0 m, aspect south west. Surface condition is loose, profile is well drained, erosion hazard is slight, and no salting evident.
- Vegetation Use: limited clearing at the site, used for timber/scrub/unused, with improved pasture in the general area.
- Surface Conditions: loose when described, ground cover is 100%.
- Erosion/ Land Degradation: slight; wind erosion at site is none; no salting evident.
- Soil Hydrology: profile is well drained, run on is low and runoff is moderate.
- Soil Type: Earthy Sand (GSG), Uc4.21 (PPF)

A review of the Acid Sulfate Soil Risk Map - Edition Two supplied by the Department of Land and Water Conservation indicates that the site lies in an area with no known occurrence of acid sulfate soil materials.

## 7 Site Condition and Surrounding Environment

The site was inspected on the 10th February 2018. At the time of inspection the site was not operational. During the site inspection the following observations were made:

- The ground surface of the site is predominately grass cover.
- A roadway passes through a majority of the northern section of the site. The roadway was observed to consist of recycled materials including crushed brick, concrete and gravel. Asbestos cement fragments were identified within the south eastern section of the roadway (Refer to Figure 4).
- There is developed vegetation (large trees and shrubs) present along the entire site in particular the southern section.
- No visible signs of plant stress were observed on site.
- The topography of the site slopes in a south-western direction, therefore it is predicted that drainage on site flows in the same direction.
- Possible former watercourse that appears to be a dried up creek bed runs from the north to the south in the western central side of the site.
- Multiple structures including old caravans, storage sheds, outhouse toilet and a demountable were observed within the northern section of the site at the time of the inspection that are currently used for storage purposes. These structures were observed to potentially contain hazardous materials including but not limited to lead paint and asbestos.
- At the time of inspection obvious signs of chemical/oil spills were observed on ground surfaces within the largest shed located in the north eastern section of the site.
- An underground septic tank was identified adjacent the outhouse toilet in the north eastern section of site.
- Multiple industrial vehicles were observed within the north eastern section of site.
- Multiple stockpiles of anthropogenic material such as brick, steal, concrete slabs etc were identified during the inspection in various locations across the site (refer appendix A). The stockpiled materials are understood to be outside the scope of the current assessment.
- Fill material of unknown origin was observed generally across the site. The identified fill material generally consisted of brown silty sandy loam with gravel, coal wash, brick, concrete, timber, glass etc. This was underlain by natural yellow sand and yellow / red sandstone rock.
- Asbestos containing material (ACM) in the form of asbestos cement (AC) fragments were identified on the ground surfaces in the north eastern corner of the site adjacent the buildings as well as within the central section of site (refer to section 13 for more detail).

## 8 Site History Review

### 8.1 Summary

Site history information has been compiled from the following sources:

- Search of EPA Contaminated Lands Register
- Review of Historical Aerial Photographs
- Review of Section 149 (2&5) Planning Certificates
- Review of Previous Environmental Reports

### 8.2 Search of the EPA Contaminated Lands Register

A search of the EPA Contaminated Lands registers was undertaken by Clearsafe on the 19th February 2018, and no information relevant to the Site was available.

### 8.3 Historical Aerial Photographs

Review of historical aerial photography is summarised in Table 1 and Photographs are presented in Appendix B.

Date	Source	Comments
1966	WCC Dekho Aerial Imagery	The 1966 aerial photograph shows the site as predominantly unoccupied land aside from a structure within the north eastern corner of site. The adjacent land is used for what appears to be agriculture with some plantations. There is dense vegetation throughout the site and neighbouring properties.
1984	WCC Dekho Aerial Imagery	The 1984 aerial photograph shows the site with increased vegetation throughout majority of the site and neighbouring western property. The site adjacent to the east appears to be used for agricultural purpose
2004	WCC Dekho Aerial Imagery	The 2012 aerial photograph shows the site in its current conditions. The north eastern corner sheds have been constructed and the central eastern area of the site has been cleared. This indicates some fill material may have already been brought into the site. The M1 highway has been constructed and further large buildings have been built in neighbouring lots to the west, possibly industrial. The adjacent eastern property appears to still be used for agricultural purposes.
2014	WCC Dekho Aerial Imagery	The 2014 aerial photograph shows the site in its current state.

**Table 1:** Aerial Photography Review

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## 8.4 Review of Section 149 (2) & (5) Planning Certificates

LOT: 4 DP: 227279

A review was undertaken of the Section 149 Certificates for the site which was provided by the client and key points summarised below:

- The Section 149 (2) indicates the site is subject to the following zones: Zone IN1 General Industrial under Gosford Local Environmental Plan 2014
- The Section 149 (2) indicates the site does not include or comprise critical habitat.
- The Section 149 (2) does not indicate the site is in a conservation area.
- The Section 149 (2) indicates the site does not include Heritage Items.

The Section 149 (2) indicates that the Council has not been advised that:

- The land is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997
- The land is subject to a management order within the meaning of the Contaminated Land Management Act 1997
- The land is subject to an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997
- The land is subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997
- The land is subject to a site audit statement within the meaning of the Contaminated Land Management Act 1997

The Section 149 (5) indicates the following:

- This lot is subject to the Somersby Industrial Park Plan of Management. The site may contain habitat or buffer areas for threatened species. A copy of the Plan of Management should be obtained for further details and is available from Council's website
- This lot is subject to a Management Zone nominated in the Somersby Industrial Park Plan of Management
- This property is subject to approval by Council for on-site sewage management. Limitations and restrictions may apply for all future development/permited occupancy rate. Enquiries may be made through Council's Waste and Emergency Services.
- The land may be subject to Part V Section 117A of the Water Act. Pursuant to Section 117A of the Water Act, a new licensing policy statement has been approved by the Department of Natural Resources that affects the Mangrove Mountain-Kulnura Groundwater Management Zone 603/1. Further enquiries should be directed to the Newcastle Office - Phone Mr. Hemantha de Silva on 4904-2500.
- The land may be subject to Part II Section 22BA of the Water Act. Pursuant to Section 22BA of the Water Act as of 16/6/95, this land may be subject to an embargo on applications for new (additional) entitlements from surface water sources within the Hawkesbury/Nepean River Catchment by the Department of Natural Resources. Further enquiries should be directed to the Newcastle Office - Phone Mr. Hemantha de Silva on 4904-2500
- Any property which is not connected to the Council's sewer system may be subject to requirements of State Legislation concerning "On-Site" Sewage Management. When

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purchasing or selling property in an unsewered area information concerning on-site sewage management should be obtained from Council's Waste Services section by phoning (02) 4325 8222. NOTE: It is a requirement under the provisions of the Local Government Approval(s) Regulation 1999, that a person who purchases (or otherwise acquires) land on which any sewage management facility is installed or constructed, is required to apply to Council for an Approval to Operate an on-site sewage management system.

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## 9 Sampling

Sampling was undertaken to establish a preliminary understanding of the extent and degree of potential contamination via laboratory analysis.

Sampling was undertaken using mechanical access techniques using an excavator to produce test pits for environmental sampling to a maximum depth of 3.0m in nominated locations.

A total of twenty (20) Test Pits were excavated across the site as part of the current assessment. The sampling locations were selected primarily on the basis of a judgemental sampling pattern with sampling concentrated around potential areas of environmental concern. The final test pit locations are presented in the Site Diagram in Appendix A and sampling locations labelled TP1 to TP20.

A total of thirty five (35) primary soil samples were forwarded for laboratory analysis for various combinations of the following analytes:

- Total petroleum hydrocarbons (TPH)
- Benzene, Toluene, Ethylbenzene and Xylene (BTEX)
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Select heavy metals (As, Cd, Cr, Cu, Pb, Zn, Hg, Ni)
- Organochlorine / organophosphate pesticides (OCP/OPP)
- Polychlorinated biphenyls (PCBs)
- Asbestos

Samples were also collected for laboratory analysis for asbestos during the inspection with a total of thirty eight (38) samples collected (refer to Clearsafe Report 20-8613-01-ID and 20-8613-02-ID in Appendix D).

All samples were collected by trained environmental and occupational hygiene consultants using standard sampling techniques including equipment decontamination. All samples were placed into glass jars with teflon seals and held on ice until arrival at the nominated laboratory. All samples were received by the laboratory within the required holding times for the relevant analytes under appropriate chain of custodies.

For quality assurance and control (QA/QC) purposes, a pair of duplicate samples (blind and split duplicates) was collected adjacent to the primary sample in Test Pit 20. The duplicate samples were not homogenised. The results of the QA/QC program are detailed in Section 10.

Groundwater was not encountered during the site assessment. Sampling of groundwater was not undertaken as it is outside the scope of the current assessment.

# 10 Quality Assurance and Quality Control

## 10.1 Data Quality Objectives

Data quality objectives (DQOs) were formed in general accordance with the Contaminated Sites Guidelines for the NSW Site Auditor Scheme (DEC, 2006) in order to ensure that investigation undertaken enabled reliable data to be collected and reported. These objectives and relevant procedures are summarised in Table 2.

Decision Making Step	Procedure
Step 1 State the problem	<ul style="list-style-type: none"> <li>To gain a preliminary understanding of the contamination status of the site as part of the Preliminary Site Investigation prior to development.</li> </ul>
Step 2 Identify the decision	<ul style="list-style-type: none"> <li>The main decision is to determine as far as practicable, based on the limited nature of the current assessment, the risk of contamination at the site and its suitability for development for industrial use based on the adopted criteria of soil contaminant investigation levels. The results are to be assessed against the relevant guidelines as per Section 11.</li> </ul>
Step 3 Identify information inputs	<ul style="list-style-type: none"> <li>Information gathered from four assessment tasks including site inspection, review of site history information, field measurements and observations, soil sampling and applicable guidelines detailed in Section 11.</li> <li>Employment of NATA accredited Laboratories utilising NATA approved analysis methods.</li> </ul>
Step 4 Define the study boundaries	<ul style="list-style-type: none"> <li>The Site is located at 90 Gindurra Rd, Somersby NSW 2250 and is limited to assessment of soils within the proposed development area in the northern section of the site as demonstrated in Figure 1.</li> </ul>
Step 5 Develop the analytical approach	<ul style="list-style-type: none"> <li>The approach was developed on the basis of Stage 1 Preliminary Site Investigation with limited sampling. Field and laboratory data obtained will be interpreted to assess the presence and level of contaminants of concern. These results will then be assessed against the criteria outlined in Section 10 and conclusions made for any recommended actions.</li> </ul>
Step 6 Specify acceptable limits on decision error	<ul style="list-style-type: none"> <li>Generally in accordance with NEPM (2013) and other relevant guidance material</li> </ul>

	<ul style="list-style-type: none"> <li>The investigation will aim to assess the risks of contamination at the site and whether the site is suitable for continued industrial site use or whether additional investigation or remediation may be required.</li> </ul>
Step 7 Develop the plan for data acquisition	<ul style="list-style-type: none"> <li>Judgemental / Targeted and systematic sampling within existing site constraints will be utilised to assure representative sampling</li> <li>Based on field and laboratory QA/QC procedures the following DQO will need to be achieved:           <ol style="list-style-type: none"> <li>Analysis within acceptable holding times</li> <li>Field QA/QC within RPD acceptable ranges (+/-30% inorganic and +/-50% organics)</li> <li>Accuracy of laboratory spiked samples (in general between 70 and 130%)</li> </ol> </li> <li>The investigation will aim to conclude the risks of contamination at the site and whether the site is suitable for proposed/existing site use at a 95% confidence limit or whether additional investigation or remediation may be required.</li> </ul>

**Table 2:** Data Quality Objectives

## 10.2 Data Quality Indicators

The sampling was performed to collect reliable data which helps ensure that conclusions drawn are appropriate, using the following data quality indicators:

- Data representativeness – the representativeness of data to describe site conditions
- Document completeness – the completeness of records obtained from fieldwork i.e. critical locations sampled
- Data comparability – the quality of data which can be compared with those obtained at different times
- Data precision and accuracy – Standard compliance achieved by laboratories engaged to analyse samples

## 10.3 QA/QC and Data Completeness

A quality assurance / quality control plan was designed to achieve predetermined data quality objectives (DQOs) to demonstrate accuracy, precision, comparability, representativeness and completeness of the data generated.

All samples were forwarded to the nominated laboratory under appropriately completed chain of custody forms and within the holding times of the respective analytes. One (1) pair of duplicate samples were collected adjacent to the primary sample in Testpit 15 (TP15), and analysed for the same analytes either by a different laboratory or by the same laboratory but under a different sample number. The duplicate samples were not homogenised.

The precision of the field QC data for the duplicate samples were assessed by determining the relative percentage difference (RPD) between the original and duplicate samples. RPDs are calculated according to the following formula:

$$\%RPD = \left| \frac{A - B}{A + B} \times 200 \right|$$

where: A is the concentration of the primary laboratory result per analyte; and  
B is the corresponding duplicate result.

Note: % RPD is not calculated where the primary sample result is less than 10 times the laboratory PQL.

The QA/QC results for soil samples that meet the acceptance criteria include all RPDs less than 50%, spike recoveries falling in the range of 75% to 125% and blanks below detection limits. The overall assessment of the program for the soil sampling was made in term of completeness. The completeness is equal to the percentage of valid QA/QC results and is considered to be satisfactory if the value is greater than 95%.

The overall summary of the QA/QC program is summarised in Table 3. The overall completeness is 99% and is considered to have been satisfactory for the purpose of this assessment.

Analyte	Primary Result (TP20-0.3m)	Blind Duplicate (D1)	Split Duplicate (D2)	Blind %RPD	Split %RPD
Arsenic	<5	<5	<2	*	*
Cadmium	<1	<1	<0.4	*	*
Chromium	7	2	<5	*	*
Copper	<5	<5	<5	*	*
Lead	<5	9	12	*	*
Mercury	<0.1	<0.1	<0.1	*	*
Nickel	<2	<2	<5	*	*
Zinc	<5	<5	<5	*	*

\* Indicates the laboratory result was less than 10 times the method PQL

**Table 3:** QA Duplicate Summary Table

QA/QC Sample Type	No. of Results Not Meeting Data Quality	Total Number of Results (Individual Analytes)	Percentages Meeting Quality Objectives (%)
Blind/Split Duplicate	0	16	100
Internal Duplicates (Soil)	0	140	100
Surrogates	0	84	100
Method Blanks (Soil)	0	178	100
Laboratory Control Spikes (Soil)	0	178	100
Matrix Spike (Soil)	0	72	100
Overall Completeness	0	668	100

**Table 4:** QA/QC Data Summary

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## 11 Assessment criteria

The National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) incorporates a range of risk assessment based criteria for various site uses and refers to a range of human health and ecological based investigation and screening levels. Investigation levels and screening levels are the concentrations of a contaminant above which further appropriate investigation and evaluation will be required.

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

Ecological investigation levels (EILs) have been developed for selected metals and organic substances and are applicable for assessing risk to terrestrial ecosystems. EILs depend on specific soil physicochemical properties and land use scenarios and generally apply to the top 2m of soil.

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

Based on the proposed development for continued industrial use for the receiptal and processing of soil, sand and building materials, the following investigation criteria (refer to Table 5 & 6) were adopted for the current assessment in accordance with Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1):

- Health Investigation Level D - Commercial / Industrial, includes premises such as shops, offices, factories and industrial sites. (NEPM HIL D).

Asbestos is regulated by SafeWork NSW under the Work Health and Safety Act 2011, Work Health and Safety Regulation 2011 and Safework Australia Asbestos Codes of Practice. Asbestos is also covered under the NEPM 2013 guidelines with acceptable limits for asbestos in soil set for various site uses. No asbestos in the soil at the surface is permitted as per the guidelines.

Site specific EILs have been derived based on an average result of pH and Cation Exchange Capacity (CEC) for six (6) representative samples collected across the site (3 fill and 3 natural). EILs were derived based on tables 1B(1) to 1B(5) presented in the NEPM Schedule B1.

The following tables list all available relevant assessment criteria.

Analyte	HIL D	HSL D (Soil Vapour Intrusion) <sup>1</sup>	HSL D (Direct Contact) <sup>4</sup>	EIL (Commercial and industrial)	ESL in soil (Commercial and Industrial)
<b>INORGANICS</b>					
Arsenic (Total)	3,000	-	-	160	-
Cadmium	900	-	-	-	-
Chromium (VI)	3,600	-	-	-	-
Chromium (III)	-	-	-	530	-
Copper	240,000	-	-	400	-
Lead	1,500	-	-	1800	
Mercury (inorganic)	730	-	-	-	-
Nickel	6,000	-	-	55	-
Zinc	400,000	-	-	360	
<b>ORGANICS</b>					
Aldrin and Dieldrin	45	-	-	-	-
Chlordane	530	-	-	-	-
DDT, DDD and DDE	3,600	-	-	-	-
DDT	-	-	-	640	-
Endosulfan	2,000	-	-	-	-
Endrin	100	-	-	-	-
HCB	80	-	-	-	-
Heptachlor	50	-	-	-	-
Total PAHs	4,000	-	-	-	-

Carcinogenic PAHs (as BaP TEQ)	40	-	-	-	-
Benzo(a)pyrene	-	-	-	-	0.7
PCBs	7	-	-	-	-
Phenol	240,000	-	-	-	-
<b>PETROLEUM HYDROCARBON COMPONENTS</b>					
F1 <sup>2</sup>	-	NL	26,000	-	215
F2 <sup>3</sup>	-	NL	20,000	-	170
F3	-	-	27,000	-	2500
F4	-	-	38,000	-	6600
Benzene	-	20	430	-	95
Toluene	-	NL	99,000	-	135
Ethylbenzene	-	NL	27,000	-	185
Xylenes	-	NL	81,000	-	95
Naphthalene	-	NL	11,000	370	-

**Table 5 - Adopted Assessment Criteria**

Notes:

1. HSL D Soil vapour intrusion criteria selected due to the proposed Industrial site use. Criteria based on depth of contamination 0-1m, and a predominantly clay soil type (refer to National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) Schedule B1 for further information).
2. To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction
3. To obtain F2 subtract naphthalene from the >C10-C16 fraction.
4. Soil health screening levels for direct contact with soils containing petroleum hydrocarbon compounds are detailed in the CRC Care Technical Report no.10

In addition to appropriate consideration and application of the HSLs and ESLs, the NEPM provides 'Management Limits' for petroleum hydrocarbon compounds. These management limits take into consideration the formation of light non-aqueous phase liquids (LNAPLs), fire and explosive hazards, and effects on infrastructure. The management limit values have been adopted as interim Tier 1 guidance and are listed in Table 5.

<b>TPH Fraction</b>	<b>Soil Texture</b>	<b>Management Limits (Commercial and Industrial) (mg/kg dry soil)</b>
F1 (C <sub>6</sub> -C <sub>10</sub> )	Fine	800
F2 (C <sub>10</sub> -C <sub>16</sub> )	Fine	1,000
F3 (C <sub>16</sub> -C <sub>34</sub> )	Fine	5,000
F4 (C <sub>34</sub> -C <sub>40</sub> )	Fine	10,000

**Table 6 – NEPM Management Limits for TPH fractions F1 - F4 in soil**

## 12 Results

The soil samples collected were analysed for a range of contaminants of concern. Laboratory analysis for contaminants of concern in soil was undertaken by ALS Laboratory Group and Clearsafe Environmental Solutions Pty Ltd. All laboratories used for analysis of samples are NATA accredited for the testing undertaken. The laboratory results are detailed in Appendix E.

The results for the soil samples collected from test pits are summarised below:

**Heavy Metals:** Results of analysis were all below adopted criteria excluding 20-8613/TP3 - 0.5m, which reported a zinc concentration of 575 mg/kg which slightly exceeded the adopted ecological investigation levels.

**TPH/BTEX:** Results of analysis were all below adopted criteria.

**PAH:** Results of analysis were all below adopted criteria.

**PCBs:** Results of analysis were all below adopted criteria.

**OCP & OPP:** Results of analysis were all below adopted criteria.

**Asbestos:** Multiple fragments of fibrous cement (AC) sheeting were visually observed within the north eastern corner and central section of the site. Three (3) representative samples were collected and two of them reported results of Asbestos Detected. Asbestos was not detected in the remaining soil samples collected as part of the assessment (refer to Clearsafe Reports 20-8613-01-ID & 20-8613-01-ID). Based on site observations and laboratory analysis results the identified asbestos is considered non-friable. Refer to Section 13 for more detail.

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## 13 Discussion

The information obtained from the review of available site history materials and site inspection and sampling identified four (4) Areas of Environmental Concern (AEC) including:

### **AEC 1 – Fill of unknown origin**

Fill material of unknown origin was observed generally across the site. The identified fill material generally consisted of brown silty sandy loam with gravel, coal wash, brick, concrete, timber, glass etc. This was underlain by natural yellow / light brown sand and sandstone rock. Fill was evident across most of the site.

Although fill of unknown origin was present across the majority of the site soil samples were all within adopted assessment criteria and predominantly below detection limits for the majority of chemicals analysed. Sample 20-8613/TP3 - 0.5m which reported a Zinc concentration of 575 mg/kg, was slightly above adopted criteria for the Ecological Investigation Levels for an Industrial/ Commercial development. Results from three neighbouring test pits (<20m away) and all other other test pits from across the site were analysed to be below the adopted criteria. Test Pit 3 is located in an area proposed for development into a sealed car park therefore the slightly elevated zinc concentration above the adopted EILs is considered a negligible risk. The Zinc result for this sample appears to be an outlier and is considerably lower than Health Investigation Levels. Therefore no significant risk of chemical contamination is expected across the site.

Multiple stockpiles / dumping areas were identified within the central area of the site as part of the current assessment. The assessment of stockpiled materials was outside the scope of the current assessment. Clearsafe was advised by client that stockpiled materials will be part of a detailed waste classification assessment done by another consulting company. It is noted however that the sampling undertaken as part of the current assessment included sampling of soils immediately adjacent to and centrally within stockpiling areas to assess potential impacts from stockpiles on soils throughout the site.

### **AEC 2 – Asbestos Containing Materials**

During the assessment, multiple fragments of non-friable asbestos cement (AC) were identified on the ground surfaces within the north eastern corner of the site adjacent to onsite structures and also within the central section of the site (refer to Figure 4). The identified asbestos containing material (ACM) in the central section of the site was significantly more concentrated with several fragments of AC identified. The identified fragments in the central area of the site also included fragments in a section of the access road which consisted primarily of crushed recycled materials such as concrete, brick etc. Three representative samples of suspected asbestos cement materials were collected for laboratory analysis. Two of the samples reported as Asbestos Detected (refer to Clearsafe Report 20-8613-01-ID).

Asbestos was not observed at depth in any of the test pits and all soils samples across the site reported No Asbestos detected (refer to Clearsafe Reports 20-8613-02-ID). Based on site observations and laboratory analysis results the identified asbestos is considered

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non-friable. The identified asbestos containing materials appear to be limited to ground surfaces and near surface soils.

**AEC 3 – Hazardous building materials within and immediately surrounding buildings and structures**

During the site inspection, the onsite buildings and structures were suspected of potentially containing hazardous building materials including but not limited to asbestos containing materials (ACM) and lead paint in their construction. Prior to any proposed demolition of onsite structures a hazardous materials survey should be undertaken.

---

## 14 Conclusions and Recommendations

Clearsafe Environmental Solutions Pty Ltd (Clearsafe) was engaged by Kariong Soil and Sand Supplies (C/- Jackson Environment and Planning Pty Ltd) to undertake a Stage 1 Preliminary Site Investigation with limited sampling of the property located at 90 Gindurra Rd, Somersby NSW 2250. Clearsafe understands from the information provided by Jackson Environment and Planning Pty Ltd that a Preliminary Site Investigation (Phase 1) with limited sampling is required to comply with development application conditions for the proposed industrial development of the site for use as a Construction and Demolition Recycling Facility. The purpose of the Stage 1 PSI is to assess the nature / extent of soil contamination, if any, and identify areas of environmental concern (AEC).

The following conclusions are drawn within the scope and limitations of the investigation:

- Based on the review of information from the desktop study and site inspection, the site appears to have previously been used for storing and screening soil and sand, which was then sold for landscaping.
- The information obtained from the review of available site history materials and site inspection identified four (4) potential Areas of Environmental Concern (AEC):
  - AEC 1 - Fill Materials of Unknown Origin - Fill materials and natural soils within the site were tested for a range of potential contaminants of concern. The samples tested reported results below the adopted criteria for the proposed development excluding 20-8613/TP3 - 0.5m, which reported a zinc concentration of 575 mg/kg which slightly exceeded the adopted ecological investigation levels. Results from three neighbouring test pits (<20m away) and all other other test pits from across the site were analysed to be below the adopted criteria. The Zinc result for this sample appears to be an outlier and is considerably lower than Health Investigation Levels. Therefore no significant risk of chemical contamination is expected across the site.
  - AEC 2 - Asbestos Containing Material - During the sampling, multiple fragments of non-friable asbestos cement (AC) were identified on ground surfaces within the north-eastern section of the site adjacent the buildings as well as in the central section of site.
  - AEC 3 - Hazardous Building Materials - Due to the age of the onsite buildings and structures, it is likely that hazardous building materials including but not limited to asbestos containing materials and lead paint may be present within these structures.

Based on the scope and limitations of the investigation, in consideration of the site observations and sample analytical results, it is considered that the site is unlikely to pose a significant contamination risk with regards to chemical contamination, however ACM was identified on ground surfaces within the north-eastern and central sections of site. Subsequently, it is the opinion of the inspector that the site is considered suitable for the proposed development subject to the following recommendations:

- An appropriate Asbestos Management Plan should be implemented prior to any development to manage the identified non-friable ACM associated with AEC 2.
- The Asbestos Management Plan should include detailed inspection and remediation prior to any future development.
- Asbestos removal should be undertaken in accordance with an Asbestos Removal Scope of Works / Remedial Action Plan prepared by a Licensed Asbestos Assessor or Competent Person.
- Asbestos removal works should be undertaken by a licensed asbestos removal contractor.
- Subsequent to licensed asbestos removal work, a Clearance Certificate must be issued by a Licensed Asbestos Assessor or Competent Person prior to reoccupation.
- Construction works should include an Unexpected Finds Protocol (UFP) to provide recommended actions for the identification of any further ACM on the ground surfaces or within excavations.
- The Site must be managed such that the ground surfaces are at all times free of visible ACM. Any identified ACM must be managed in accordance with the UFP.
- Prior to demolition, the onsite buildings and structures should be assessed for hazardous materials including but not limited to asbestos and lead paint. All asbestos containing materials within the buildings and structures at the site must be removed prior to demolition in accordance with Safe Work Australia Codes of Practice.

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## 15 Closure and Contact Information

For any queries regarding this Environmental Assessment please contact Clearsafe on 1300 042 962 or [info@clearsafe.com.au](mailto:info@clearsafe.com.au).

Clearsafe is pleased to provide our consulting services for this commission.



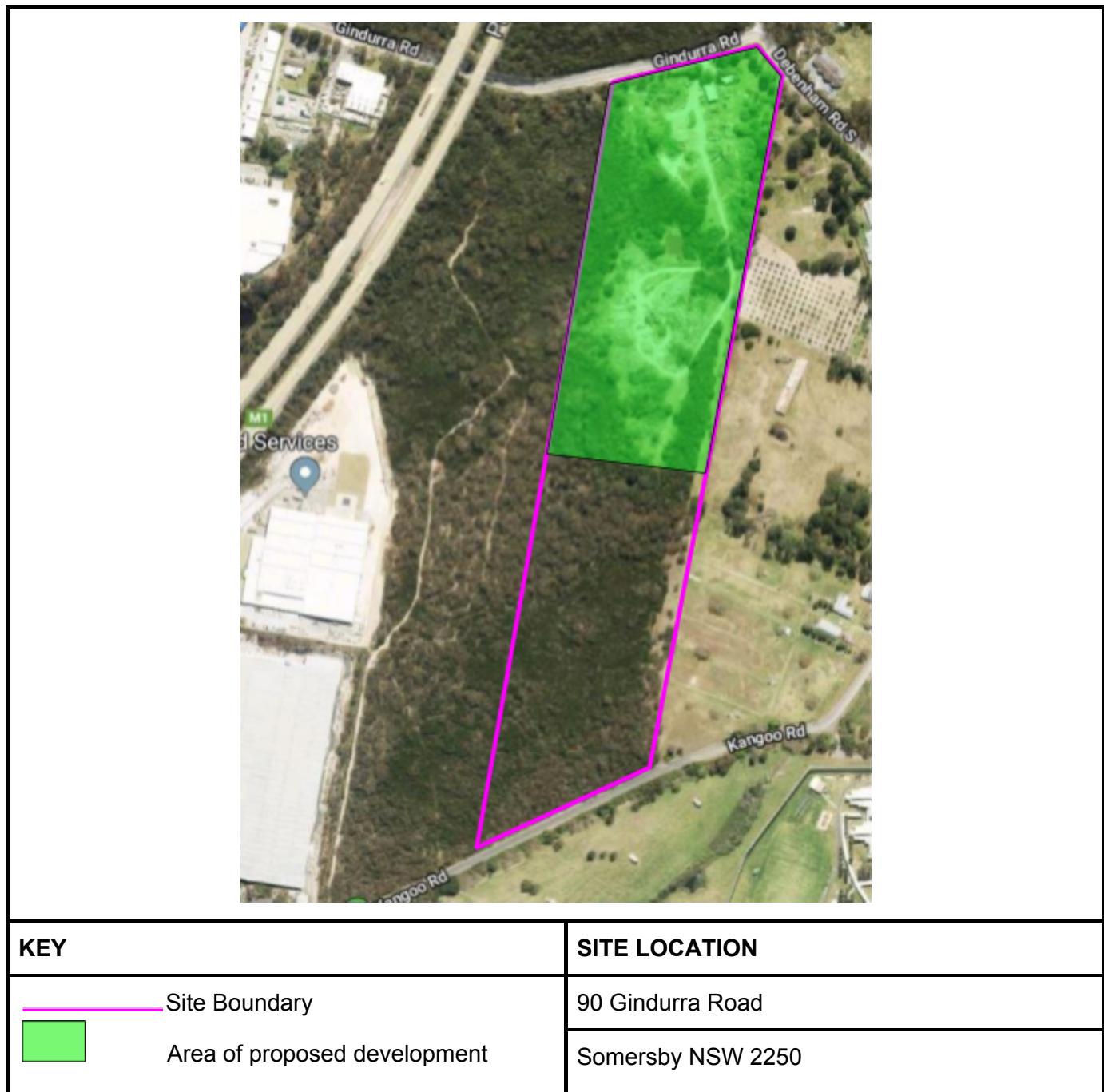
**Fergus Cowan**  
Project Consultant



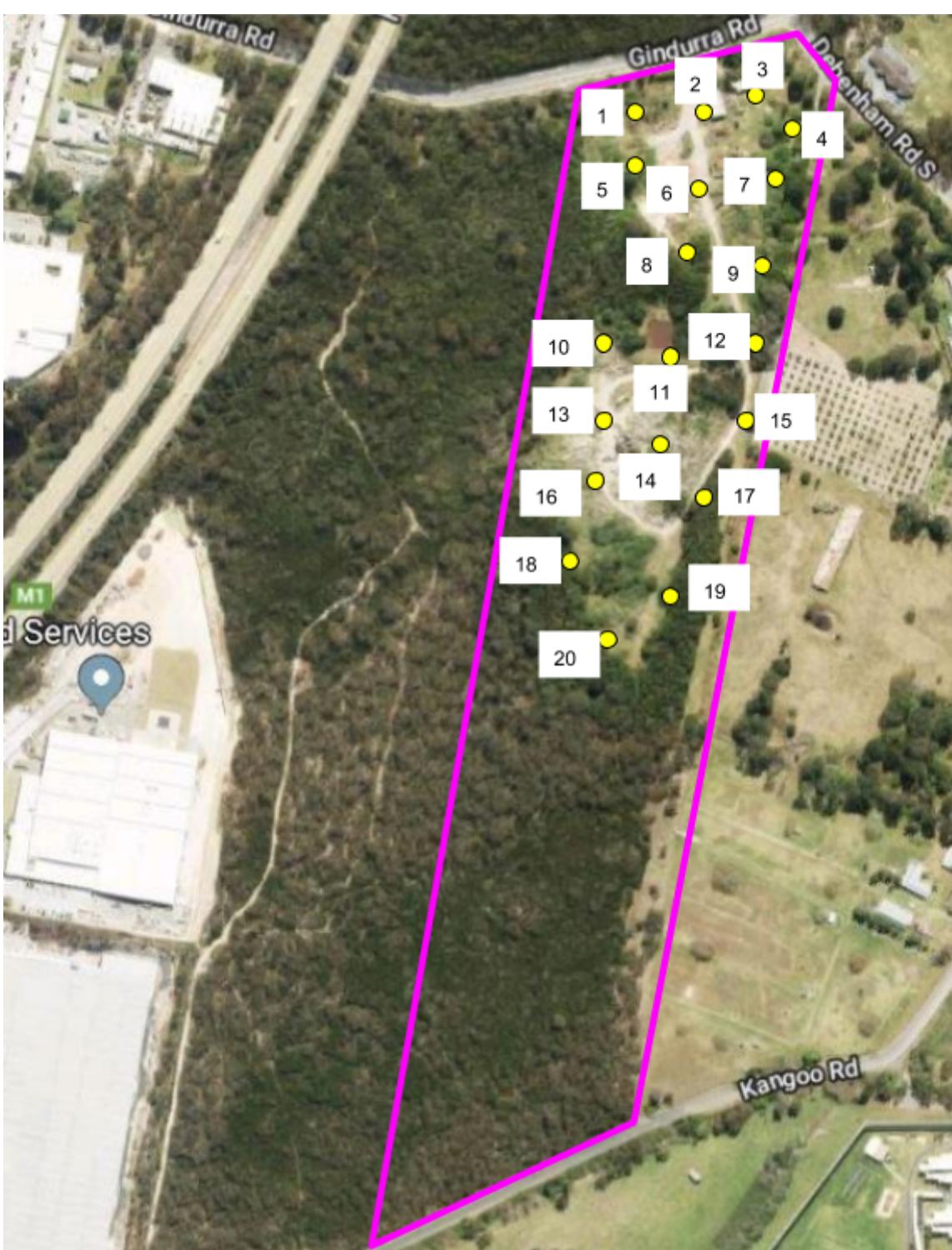
**Michael Fernandez**  
Project Manager

# APPENDIX A

# SITE PLANS

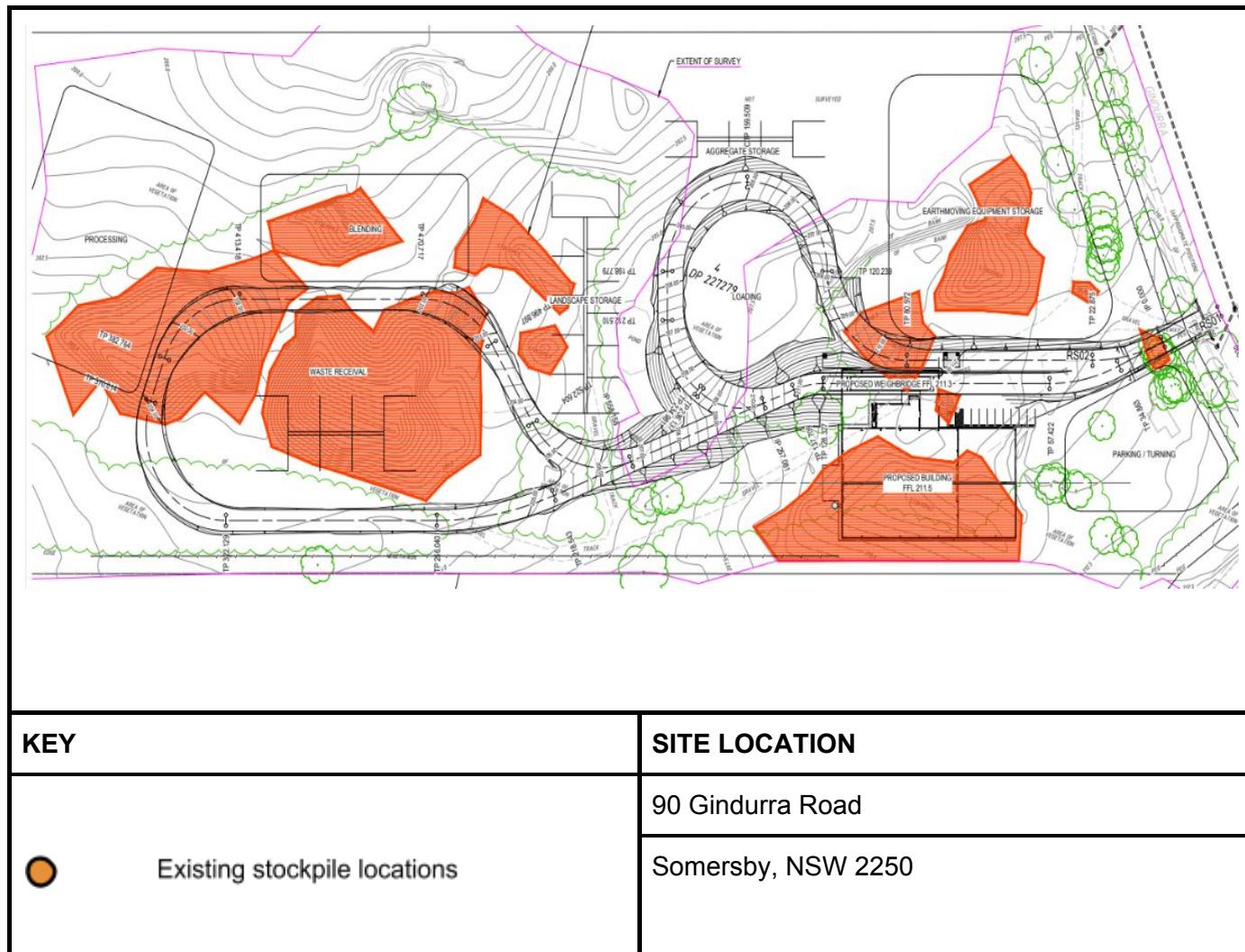


**Figure 1:** 90 Gindurra Rd, Somersby NSW 2250 (Source: Central Coast Council)

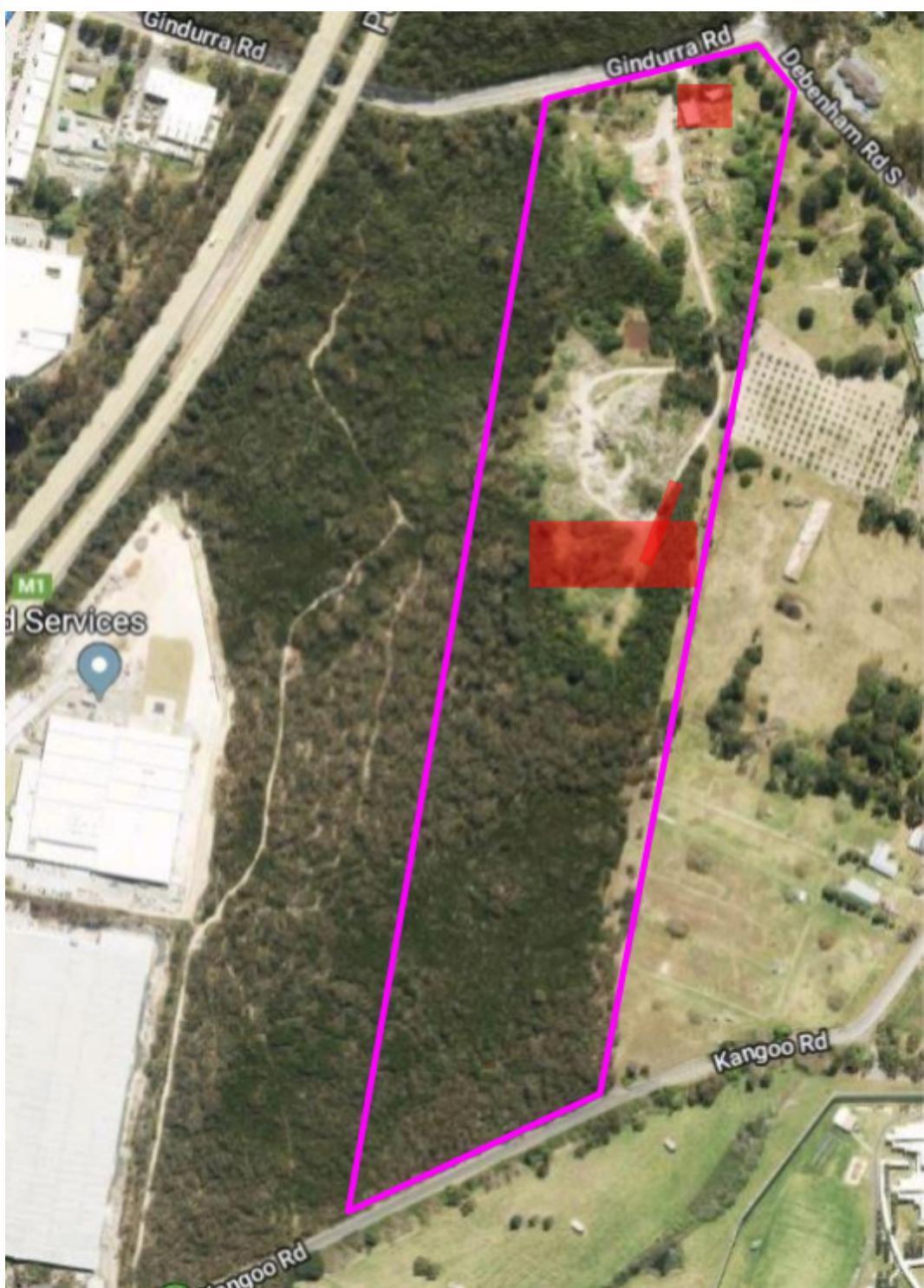


KEY	SITE LOCATION
Site boundary Test pit location	90 Gindurra Road
	Somersby, NSW 2250

**Figure 2:** Site and approximate test pit locations



**Figure 3:** Existing stockpiles locations ( Map provided by Jackson Environmental )

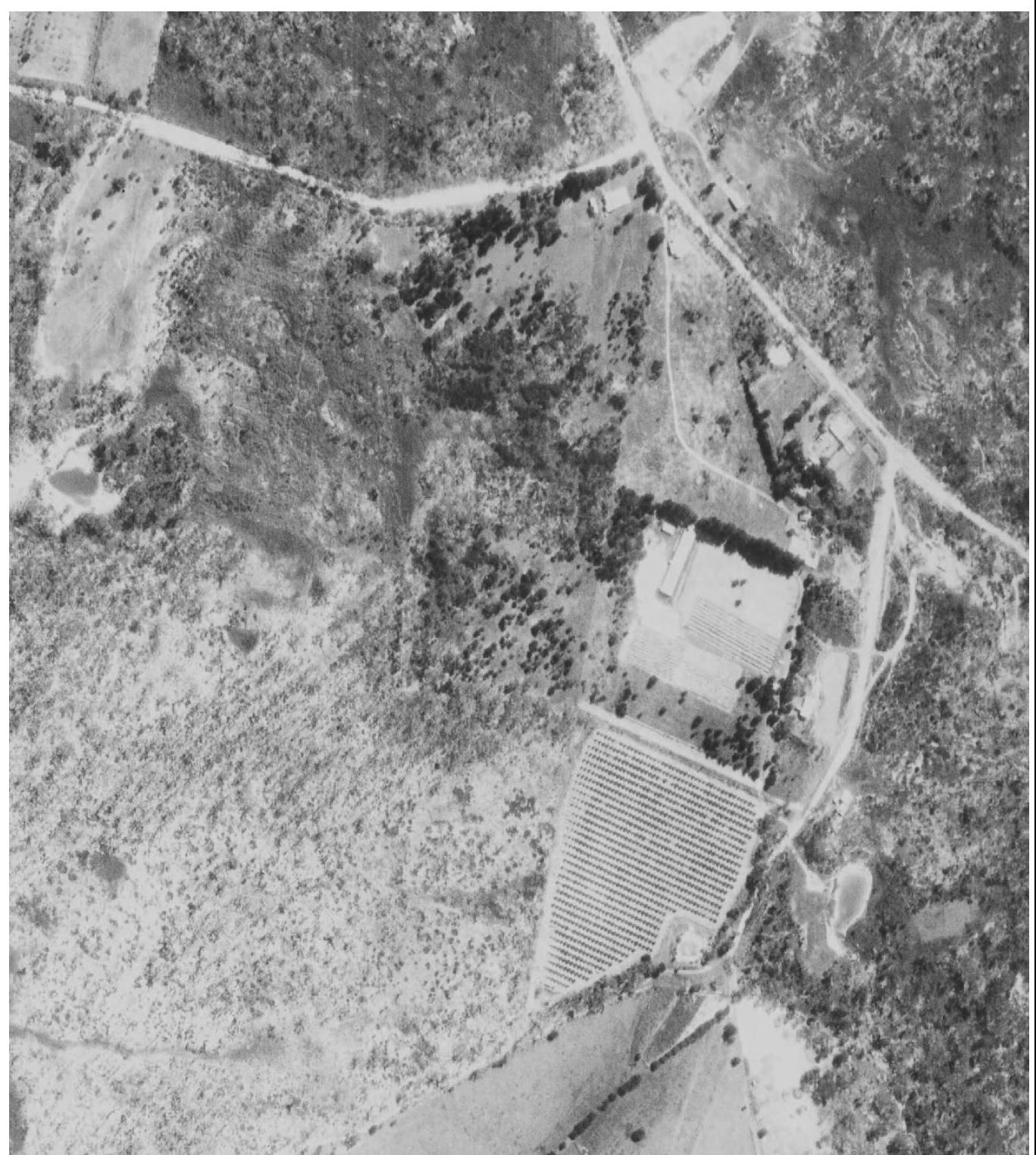


KEY	SITE LOCATION
<span style="background-color: #e67e22; width: 15px; height: 15px; display: inline-block;"></span> Approximate location of asbestos impacted areas	90 Gindurra Road
<span style="color: magenta;">—</span> Site boundary	Somersby, NSW 2250

**Figure 4:** Site and approximate asbestos impacted areas locations

# APPENDIX B

# AERIAL PHOTOGRAPHS



KEY	SITE LOCATION
Aerial photography 1966	90 Gindurra Road
	Somersby NSW 2250

**Aerial Photograph 1966**



KEY	SITE LOCATION
Aerial photography 1984	90 Gindurra Road
	Somersby NSW 2250

**Aerial Photograph 1984**



KEY	SITE LOCATION
Aerial photography 2005	90 Gindurra Road
	Somersby NSW 2250

**Aerial Photograph 2004**



KEY	SITE LOCATION
Aerial photography 2014	90 Gindurra Road
	Somersby NSW 2250

**Aerial Photograph 2014**

# APPENDIX C

# SECTION 149

# CERTIFICATE

Davis Earthmoving & Quarrying Pty Ltd  
PO Box 19  
TERREY HILLS NSW 2084

## PLANNING CERTIFICATE

This Planning Certificate is issued in accordance with Section 149 of the *Environmental Planning and Assessment Act, 1979*

Certificate No: 148698

Certificate Date: 7 April 2017

Address: 90 Gindurra Road SOMERSBY

Lot Description: LOT: 4 DP: 227279

Parish: Gosford

County: Northumberland

Assessment No: 210855

Receipt No: 142624

Parcel No: 16235

Applicants Reference:

Applicants Email: [mark@jacksonenvironment.com.au](mailto:mark@jacksonenvironment.com.au)



## **Part 2 - Environmental Planning and Assessment Regulation 2000**

### **1 NAMES OF RELEVANT PLANNING INSTRUMENTS and DCPS**

- (1) The name of each environmental planning instrument that applies to the carrying out of development on the land.

Gosford Local Environmental Plan 2014

#### ***Specific Site State Environmental Planning Policies***

Sydney Regional Environmental Plan No. 20 - Hawkesbury-Nepean River (No 2-1997)

#### ***General Site State Environmental Planning Policies***

ZONE IN1 GENERAL INDUSTRIAL UNDER GOSFORD LOCAL ENVIRONMENTAL PLAN 2014

State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (Affordable Rental Housing) 2009

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

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

State Environmental Planning Policy (Major Development) 2005

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004

State Environmental Planning Policy No. 65 - Design Quality of Residential Flat Development

State Environmental Planning Policy No. 64 - Advertising and Signage

State Environmental Planning Policy No. 62 - Sustainable Aquaculture

State Environmental Planning Policy No. 55 - Remediation of Land

State Environmental Planning Policy No. 50 - Canal Estate Development

State Environmental Planning Policy No. 44 - Koala Habitat Protection

State Environmental Planning Policy No. 36 - Manufactured Home Estates

State Environmental Planning Policy No. 33 - Hazardous and Offensive Development

State Environmental Planning Policy No. 30 - Intensive Agriculture

State Environmental Planning Policy No. 21 - Caravan Parks

State Environmental Planning Policy No. 19 - Bushland in Urban Areas

Sydney Regional Environmental Plan No. 9 - Extractive Industry (No 2-1995)

- (2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).

Draft State Environmental Planning Policy (Competition) 2010

- (3) The name of each development control plan that applies to the carrying out of development on the land.

Gosford Development Control Plan 2013

## **2 ZONING AND LAND USE UNDER RELEVANT LOCAL ENVIRONMENTAL PLANS**

- (a) to (d) is the zoning of the land and the land use table for each of the zones listed, including existing and proposed Local Environmental Plans in landuse tables.

Zone IN1 General Industrial under Gosford Local Environmental Plan 2014

PERMITTED WITHOUT CONSENT

Recreation areas

PERMITTED WITH CONSENT

Depots; Freight transport facilities; General industries; Hardware and building supplies; Industrial training facilities; Landscaping material supplies; Light industries; Neighbourhood shops; Restaurants or cafes; Roads; Rural supplies; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres; Any other development not specified in Permitted without consent or Prohibited

PROHIBITED

Amusement centres; Boat building and repair facilities; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Eco-tourist facilities; Entertainment facilities; Environmental facilities; Environmental protection works; Exhibition homes; Exhibition villages; Extractive industries; Farm buildings; Flood mitigation works; Forestry; Health services facilities; Heavy industrial storage establishments; Highway service centres; Home-based child care; Home businesses; Home occupations; Home occupations (sex services); Information and education facilities; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Public administration buildings; Recreation facilities (major); Research stations; Residential accommodation; Restricted premises; Storage premises; Tourist and visitor accommodation; Water recreation structures; Water supply systems

- (e) whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land, if so, the minimum land dimensions so fixed,

No.

(f) whether the land includes or comprises critical habitat,

None

(g) whether the land is in a conservation area (however described),

No.

(h) whether an item of environmental heritage (however described) is situated on the land.

No.

## **2A ZONING AND LAND USE UNDER SEPP (SYDNEY REGIONAL GROWTH CENTRES) 2006**

Not applicable

## **3 COMPLYING DEVELOPMENT**

### **General Housing Code**

Complying development under the General Housing Code may not be carried out on the land except as otherwise provided by State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. The land is affected by the requirements for complying development: The land is within an environmentally sensitive area. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

### **Rural Housing Code**

Complying development under the Rural Housing Code may not be carried out on the land except as otherwise provided by State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. The land is affected by the requirements for complying development: The land is within an environmentally sensitive area. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

### **Housing Alterations Code**

Complying development under the Housing Alterations Code may not be carried out on the land except as otherwise provided by State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. The land is affected by the requirements for complying development: The land is within an environmentally sensitive area. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

### **General Development Code**

Complying development under the General Development Code may not be carried out on the land except as otherwise provided by State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. The land is affected by the requirements for complying development: The land is within an environmentally sensitive area. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

## **Subdivision Code**

Complying development under the Subdivisions Code may not be carried out on the land except as otherwise provided by State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. The land is affected by the requirements for complying development: The land is within an environmentally sensitive area. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

## **Demolition Code**

Complying development under the Demolition Code may not be carried out on the land except as otherwise provided by State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. The land is affected by the requirements for complying development: The land is within an environmentally sensitive area. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

## **Commercial and Industrial (New Buildings and Additions) Code**

Complying development under the Commercial and Industrial (New Buildings and Additions) Code may not be carried out on the land except as otherwise provided by State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. The land is affected by the requirements for complying development: The land is within an environmentally sensitive area. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

## **Commercial and Industrial Alterations Code**

Complying development under the Commercial and Industrial (New Buildings and Additions) Code may not be carried out on the land except as otherwise provided by State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. The land is affected by the requirements for complying development: The land is within an environmentally sensitive area. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

## **Fire Safety Code**

Complying development under the Fire Safety Code may not be carried out on the land except as otherwise provided by State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. The land is affected by the requirements for complying development: The land is within an environmentally sensitive area. Please contact your Private Accredited Certifier to ascertain the extent of the constraint on the land.

## **4 COASTAL PROTECTION**

The Council has not been notified that by the relevant NSW Government Department that the land is affected by Sections 38 and 39 or Parts 4C, 4D of the Coastal Protection Act, 1979.

Further Council has not been notified that annual charges apply under 4B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works.

### **4A Information relating to beaches and coasts**

- (1) whether an order has been made under part 4D of the *Coastal Protection Act 1979* in relation to temporary coastal protection works (within the meaning of that Act) on the land (or on public land adjacent to that land), except where the council is satisfied that such an order has been fully complied with.

No.

- (2) (a) whether the council has been notified under section 55X of the *Coastal Protection Act 1979* that temporary coastal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land), and  
(b) if works have been so placed - whether the council is satisfied that the works have been removed and the land restored in accordance with that Act.

None.

### **4B Annual Charges for coastal protection services under *Local Government Act 1993***

None

## **5 MINE SUBSIDENCE**

This land has not been proclaimed to be a mine subsidence district within the meaning of section 15 of The Mine Subsidence Compensation Act, 1961.

## **6 ROAD WIDENING AND ROAD RE-ALIGNMENT**

Whether or not the land is affected by any road widening or road alignment.

The land is not affected by Road Widening Proposals.

**7 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS**  
*(No, unless a message is listed below)*

Chapter 6.4 of Gosford Development Control Plan (Geotechnical Requirements) applies to the land and the land may be subject to slip. When considering a development application, each circumstance will be considered and development may be restricted.

**7A FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION**

Is development on the land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling house or residential flat buildings (excluding group homes or seniors housing) subject to flood related development controls.

No.

Is development on the land or part of the land for any other purpose subject to flood related development controls.

No.

**8 LAND RESERVED FOR ACQUISITION**

No.

**9 CONTRIBUTION PLANS**

None.

**9A BIODIVERSITY CERTIFIED LAND**

Is the land biodiversity certified land (within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*)?

No.

**10 BIOBANKING AGREEMENTS**

Is land to which a biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995* relates.

No.

## **11 BUSHFIRE PRONE LAND**

All or part of the land is shown as Bushfire Prone on Council's records. Details of the Bushfire Category can be obtained from Mapping, Environmental Constraints, available on Council's website. Further information related to building on bushfire prone land can be obtained from the Fact Sheet on Council's website and the Rural Fire Service Website <http://www.rfs.nsw.gov.au/plan-and-prepare/building-in-a-bush-fire-area>.

## **12 PROPERTY VEGETATION PLANS**

Has Council been notified by the person or body that approved the plan that the land is land to which a property vegetation plan under the *Native Vegetation Act 2003* applies?

No.

## **13 ORDERS UNDER TREES (DISPUTE BETWEEN NEIGHBOURS) ACT 2006**

Has Council been notified that an order has been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land?

No.

## **14 DIRECTIONS UNDER PART 3A**

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

No.

## **15 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR SENIORS HOUSING**

### **15(a) IS COUNCIL AWARE OF A CURRENT SITE COMPATIBILITY CERTIFICATE (SENIORS HOUSING) IN RESPECT OF PROPOSED DEVELOPMENT ON THE LAND?**

*If the land is land to which State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 applies.*

No.

### **15(b) ARE THERE ANY CONDITIONS IMPOSED BY A CONSENT AUTHORITY IN TERMS OF CLAUSE 18 (2) OF STATE ENVIRONMENTAL PLANNING POLICY (HOUSING FOR SENIORS OR PEOPLE WITH A DISABILITY) 2004 AFTER 11 OCTOBER 2007?**

No.

## **16 SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE**

No.

## **17 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING**

**17(1) IS COUNCIL AWARE OF A CURRENT SITE COMPATIBILITY CERTIFICATE (AFFORDABLE RENTAL HOUSING) IN RESPECT OF PROPOSED DEVELOPMENT ON THE LAND?**

No.

**17(2) ARE THERE ANY CONDITIONS IMPOSED BY A CONSENT AUTHORITY IN TERMS OF CL 17 (1) OR 37 (1) OF STATE ENVIRONMENTAL PLANNING POLICY (AFFORDABLE RENTAL HOUSING) 2009?**

No.

## **18 PAPER SUBDIVISION INFORMATION**

- (1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.

None

- (2) The date of any subdivision order that applies to the land.

Nil

## **19 SITE VERIFICATION CERTIFICATE**

There is no current site verification certificate, of which the Council is aware in respect of the land.

## **20 LOOSE-FILL ASBESTOS INSULATION**

NSW Fair Trading has not identified any residential dwellings erected within Central Coast Council Local Government Area as containing loose-fill asbestos ceiling insulation, as per the Loose-Fill Asbestos Insulation Register.

## Note

### **1 CONTAMINATED LAND MANAGEMENT ACT 1997 NOTICES UNDER SECTION 59(2)**

- (a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act - if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,

No.

- (b) that the land to which the certificate relates is subject to a management order within the meaning of that Act - if it is subject to such an order at the date when the certificate is issued,

No.

- (c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act - if it is the subject of such an approved proposal at the date when the certificate is issued,

No.

- (d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act - if it is subject to such an order at the date when the certificate is issued,

No.

- (e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act - if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

No.

### **2 NATION BUILDING AND JOB PLAN (STATE INFRASTRUCTURE DELIVERY) ACT 2009 EXEMPTION UNDER SECTION 23 OR AUTHORISATION UNDER SECTION 24 OF THE ACT.**

No.

**The following additional information is issued under Section 149(5) of  
the *Environmental Planning and Assessment Act, 1979***

Council has fixed a foreshore building line on all lands fronting any harbour, bay, ocean, lake, estuary, lagoon or tidal river and creek.

If this land adjoins land or roads over which there is an easement for services to drain water, to drain sewage or where services, drainage, sewerage or other utilities have been installed and easements have not been created, foundations may be required such as will ensure the stability of any improvements on the subject land against any influence from use of the easement or installations over the adjoining land or roads.

This lot is subject to the Somersby Industrial Park Plan of Management. The site may contain habitat or buffer areas for threatened species. A copy of the Plan of Management should be obtained for further details and is available from Council's website.

This lot is subject to a Management Zone nominated in the Somersby Industrial Park Plan of Management. Development of this lot will be restricted. A copy of the Plan of Management should be obtained for further details and is available from Council's website.

This property is subject to approval by Council for on-site sewage management. Limitations and restrictions may apply for all future development/permited occupancy rate. Enquiries may be made through Council's Waste and Emergency Services.

The land may be subject to Part V Section 117A of the Water Act. Pursuant to Section 117A of the Water Act, a new licensing policy statement has been approved by the Department of Natural Resources that affects the Mangrove Mountain-Kulnura Groundwater Management Zone 603/1. Further enquiries should be directed to the Newcastle Office - Phone Mr. Hemantha de Silva on 4904-2500

The land may be subject to Part II Section 22BA of the Water Act. Pursuant to Section 22BA of the Water Act as of 16/6/95, this land may be subject to an embargo on applications for new (additional) entitlements from surface water sources within the Hawkesbury/Nepean River Catchment by the Department of Natural Resources. Further enquiries should be directed to the Newcastle Office - Phone Mr. Hemantha de Silva on 4904-2500

Any property which is not connected to the Council's sewer system may be subject to requirements of State Legislation concerning "On-Site" Sewage Management. When purchasing or selling property in an unsewered area information concerning on-site sewage management should be obtained from Council's Waste Services section by phoning (02) 4325 8222. NOTE: It is a requirement under the provisions of the Local Government Approval(s) Regulation 1999, that a person who purchases (or otherwise acquires) land on which any sewage management facility is installed or constructed, is required to apply to Council for an Approval to Operate an on-site sewage management system.

**Note: This Certificate is issued without Alteration and Erasure.**

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# APPENDIX D

# LABORATORY REPORTS

# Certificate of Analysis

**Report Number:** 20-8613-01-ID

**Date of Report:** 19/2/2018

**Date of Analysis:** 16/2/2018

**Site Address:** 90 Gindurra Rd  
Somersby NSW 2250

**Client Name:** Jackson Environmental and  
Planning Pty Ltd

**Client Address:** Suite 102, Level 1, 25-29 Berry St  
North Sydney NSW 2060

**Test Method:** Asbestos identification in bulk samples by polarised light microscopy and dispersion staining, in accordance with 'AS4964-2004 Method for the Qualitative Identification of Asbestos in Bulk Samples' and Clearsafe Method SOP.ID.01 [Detection Limit - 0.1g/kg (AS4964)].

**Notes:** The results contained within this report relate only to the samples tested. This report should not be copied, presented or reviewed except in full.

An independent analytical technique is recommended for confirmation of vinyl and bituminous samples, or samples in which 'Unknown Mineral Fibre' is detected.

NATA accreditation relates to the analysis of the sample(s) and does not cover the sample collection process.

Sample Number	Sample Reference / Location	Description **	Result *
20-8613/1	20-8613 / TP1 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 114.9g	No Asbestos Detected <sup>6</sup>
20-8613/2	20-8613 / TP1 - 0.7m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 97.1g	No Asbestos Detected <sup>6</sup>
20-8613/3	20-8613 / TP2 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 155.7g	No Asbestos Detected <sup>6</sup>
20-8613/4	20-8613 / TP2 - 0.6m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 75.3g	No Asbestos Detected <sup>6</sup>
20-8613/5	20-8613 / TP3 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 115.8g	No Asbestos Detected <sup>6</sup>
20-8613/6	20-8613 / TP3 - 0.55m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 98.8g	No Asbestos Detected <sup>6</sup>
20-8613/7	20-8613 / TP4 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 204.4g	No Asbestos Detected <sup>6</sup>
20-8613/8	20-8613 / TP4 - 0.4m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 65.7g	No Asbestos Detected <sup>6</sup>
20-8613/9	20-8613 / TP5 - 0.5m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 135.2g	No Asbestos Detected <sup>6</sup>

**\* Result Codes:**

1 - Chrysotile Asbestos Detected    4 - Unknown Mineral Fibre Detected

2 - Amosite Asbestos Detected    5 - Synthetic Mineral Fibre (SMF) Present

3 - Crocidolite Asbestos Detected    6 - Organic Fibres Present

**\*\* Description Codes:**

FCS - Fibrous Cement Sheeting    VFT - Vinyl Floor Tile



**NATA Accredited Laboratory No. 18542**

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

20-8613/10	20-8613 / TP5 - 2.7m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 75.5g	No Asbestos Detected <sup>6</sup>
20-8613/11	20-8613 / TP6 - 0.7m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 198.0g	No Asbestos Detected <sup>6</sup>
20-8613/12	20-8613 / TP6 - 1.2m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 152.3g	No Asbestos Detected <sup>6</sup>
20-8613/13	20-8613 / TP7 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 98.8g	No Asbestos Detected <sup>6</sup>
20-8613/14	20-8613 / TP7 - 0.8m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 98.3g	No Asbestos Detected <sup>6</sup>
20-8613/15	20-8613 / TP8 - 0.4m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 93.2g	No Asbestos Detected <sup>6</sup>
20-8613/16	20-8613 / TP8 - 1.4m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 127.1g	No Asbestos Detected <sup>6</sup>
20-8613/17	20-8613 / TP9 - 0.4m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 128.3g	No Asbestos Detected <sup>6</sup>
20-8613/18	20-8613 / TP10 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 127.2g	No Asbestos Detected <sup>6</sup>
20-8613/19	20-8613 / TP10 - 2.0m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 145.7g	No Asbestos Detected <sup>6</sup>
20-8613/20	20-8613 / TP11 - 0.5m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 84.3g	No Asbestos Detected <sup>6</sup>
20-8613/21	20-8613 / TP11 - 1.4m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 114.9g	No Asbestos Detected <sup>6</sup>
20-8613/22	20-8613 / TP12 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 91.6g	No Asbestos Detected <sup>6</sup>
20-8613/23	20-8613 / TP12 - 0.6m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 142.6g	No Asbestos Detected <sup>6</sup>
20-8613/24	20-8613 / TP13 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 124.2g	No Asbestos Detected <sup>6</sup>
20-8613/25	20-8613 / TP13 - 1.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 115.6g	No Asbestos Detected <sup>6</sup>
20-8613/26	20-8613 / TP14 - 0.5m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 148.2g	No Asbestos Detected <sup>6</sup>
20-8613/27	20-8613 / TP15 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 89.1g	No Asbestos Detected <sup>6</sup>
20-8613/28	20-8613 / TP15 - 1.0m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 127.4g	No Asbestos Detected <sup>6</sup>
20-8613/29	20-8613 / TP16 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 168.3g	No Asbestos Detected <sup>6</sup>
20-8613/30	20-8613 / TP16 - 1.0m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 110.9g	No Asbestos Detected <sup>6</sup>
20-8613/31	20-8613 / TP17 - 0.2m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 70.6g	No Asbestos Detected <sup>6</sup>
20-8613/32	20-8613 / TP17 - 0.6m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 112.5g	No Asbestos Detected <sup>6</sup>
20-8613/33	20-8613 / TP18 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 73.0g	No Asbestos Detected <sup>6</sup>

**\* Result Codes:**

- 1 - Chrysotile Asbestos Detected    4 - Unknown Mineral Fibre Detected  
 2 - Amosite Asbestos Detected    5 - Synthetic Mineral Fibre (SMF) Present  
 3 - Crocidolite Asbestos Detected    6 - Organic Fibres Present

**\*\* Description Codes:**

- FCS - Fibrous Cement Sheeting    VFT - Vinyl Floor Tile

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20-8613/34	20-8613 / TP19 - 0.2m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 115.7g	No Asbestos Detected <sup>6</sup>
20-8613/35	20-8613 / TP20 - 0.3m	Soil / Ore, Ribbon-Like Fibres. Sample Size: 76.9g	No Asbestos Detected <sup>6</sup>

**\* Result Codes:**

- 1 - Chrysotile Asbestos Detected      4 - Unknown Mineral Fibre Detected  
 2 - Amosite Asbestos Detected      5 - Synthetic Mineral Fibre (SMF) Present  
 3 - Crocidolite Asbestos Detected      6 - Organic Fibres Present

**\*\* Description Codes:**

- FCS - Fibrous Cement Sheeting      VFT - Vinyl Floor Tile

**NATA Accredited Laboratory No. 18542**

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# Certificate of Analysis



**Report Number:** 20-8613-02-ID

**Date of Report:** 19/2/2018

**Date of Analysis:** 16/2/2018

**Site Address:** 90 Gindurra Rd

Somersby NSW 2250

**Client Contact:** Mark Jackson

**Client Name:** Jackson Environmental and Planning Pty Ltd

**Sampled By:** Fergus Cowan

**Client Address:** Suite 102, Level 1, 25-29 Berry St  
North Sydney NSW 2060

**Approved Identifier:** Nathan Crouch

**Approved Signatory:** Luke Heckenberg

**Test Method:** Asbestos identification in bulk samples by polarised light microscopy and dispersion staining, in accordance with 'AS4964-2004 Method for the Qualitative Identification of Asbestos in Bulk Samples' and Clearsafe Method SOP.ID.01 [Detection Limit - 0.1g/kg (AS4964)].

**Notes:** The results contained within this report relate only to the samples tested. This report should not be copied, presented or reviewed except in full.

An independent analytical technique is recommended for confirmation of vinyl and bituminous samples, or samples in which 'Unknown Mineral Fibre' is detected.

NATA accreditation relates to the analysis of the sample(s) and does not cover the sample collection process.

Sample Number	Sample Reference / Location	Description **	Result *
20-8613/36	Ground surface, approximate coordinates (WGS84) 33°24'54.2"S 151°17'58.3"E	FCS, White Silky Pliable Fibres. Sample Size: 40x25x4mm	Asbestos Detected <sup>1</sup>
20-8613/37	Ground surface, approximate coordinates (WGS84) 33°25'03.0"S 151°17'57.5"E	FCS, White Silky Pliable Fibres. Sample Size: 50x45x4mm	Asbestos Detected <sup>1</sup>
20-8613/38	Ground surface, approximate coordinates (WGS84) 33°25'03.9"S 151°17'55.6"E	Fibrous Board, Ribbon-Like Fibres. Sample Size: 35x30x8mm	No Asbestos Detected <sup>6</sup>

**\* Result Codes:**

1 - Chrysotile Asbestos Detected    4 - Unknown Mineral Fibre Detected

2 - Amosite Asbestos Detected    5 - Synthetic Mineral Fibre (SMF) Present

3 - Crocidolite Asbestos Detected    6 - Organic Fibres Present

**\*\* Description Codes:**

FCS - Fibrous Cement Sheeting    VFT - Vinyl Floor Tile



**NATA Accredited Laboratory No. 18542**

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

## CERTIFICATE OF ANALYSIS

Work Order	<b>: EW1800592</b>	Page	<b>: 1 of 27</b>
Client	<b>: CLEARSAFE ENVIRONMENTAL SOLUTIONS</b>	Laboratory	<b>: Environmental Division NSW South Coast</b>
Contact	<b>: WOLLONGONG</b>	Contact	<b>: Aneta Prosaroski</b>
Address	<b>: 1/185 Berkely Rd UNANDERRA NSW 2526</b>	Address	<b>: 1/19 Ralph Black Dr, North Wollongong 2500 4/13 Geary Pl, North Nowra 2541 Australia NSW</b>
Telephone	<b>: +61 2 1300 042 962</b>	Telephone	<b>: 02 4225 3125</b>
Project	<b>: 20-8613</b>	Date Samples Received	<b>: 12-Feb-2018 15:07</b>
Order number	<b>: -----</b>	Date Analysis Commenced	<b>: 13-Feb-2018</b>
C-O-C number	<b>: -----</b>	Issue Date	<b>: 28-Feb-2018 08:50</b>
Sampler	<b>: Fergus Cowan</b>		
Site	<b>: -----</b>		
Quote number	<b>: EN/222/17</b>		
No. of samples received	<b>: 30</b>		
No. of samples analysed	<b>: 30</b>		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

### Signatories

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

Signatories	Position	Accreditation Category
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dian Dao		Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD



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

## 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.

- ED006 (Exchangeable Cations on Alkaline Soils): It is recognised that the Exchangeable K LCS biases low, however this is deemed acceptable as the target concentration is at LOR and the Cation Exchange Capacity LCS is within acceptable limits.
- ED006(Exchangeable Cations on Alkaline Soils): Unable to calculate Exchangeable Sodium Percentage for sample EW1800592-014 as the required results for Sodium are below LOR.
- EG035: Positive Hg result for EW1800592 #1 has been confirmed by reanalysis
- EP068: Positive result has been confirmed by re-extraction and re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) 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: Benzo(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1,2,3,cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.  
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity ( $H^+ + Al^{3+}$ ).

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP1 -0.3m	20-8613 /TP1 -0.65m	20-8613 /TP2 -0.3m	20-8613 /TP3 -0.5m	20-8613 /TP3 0.55m
Compound	CAS Number	LOR	Unit	EW1800592-001	EW1800592-002	EW1800592-003	EW1800592-004	EW1800592-005
				Result	Result	Result	Result	Result
<b>EA002 : pH (Soils)</b>								
pH Value	---	0.1	pH Unit	8.3	---	---	---	---
<b>EA055: Moisture Content</b>								
Moisture Content	---	1.0	%	8.7	25.8	9.8	15.2	12.0
<b>ED006: Exchangeable Cations on Alkaline Soils</b>								
Exchangeable Calcium	---	0.2	meq/100g	---	---	---	1.2	---
Exchangeable Magnesium	---	0.2	meq/100g	---	---	---	<0.2	---
Exchangeable Potassium	---	0.2	meq/100g	---	---	---	<0.2	---
Exchangeable Sodium	---	0.2	meq/100g	---	---	---	<0.2	---
Cation Exchange Capacity	---	0.2	meq/100g	---	---	---	1.2	---
Exchangeable Sodium Percent	---	0.2	%	---	---	---	<0.2	---
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	12	11
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	10	7	7	18	5
Copper	7440-50-8	5	mg/kg	27	<5	8	89	10
Lead	7439-92-1	5	mg/kg	25	<5	11	188	27
Nickel	7440-02-0	2	mg/kg	12	<2	11	4	<2
Zinc	7440-66-6	5	mg/kg	114	<5	26	575	233
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	---	0.1	mg/kg	---	---	<0.1	---	---
<b>EP068A: Organochlorine Pesticides (OC)</b>								
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	---	---

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP1 -0.3m	20-8613 /TP1 -0.65m	20-8613 /TP2 -0.3m	20-8613 /TP3 -0.5m	20-8613 /TP3 0.55m
Compound	CAS Number	LOR	Unit	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
				Result	Result	Result	Result	Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>								
cis-Chlordane	5103-71-9	0.05	mg/kg	---	---	<0.05	---	---
Dieldrin	60-57-1	0.05	mg/kg	---	---	<0.05	---	---
4,4'-DDE	72-55-9	0.05	mg/kg	---	---	<0.05	---	---
Endrin	72-20-8	0.05	mg/kg	---	---	<0.05	---	---
beta-Endosulfan	33213-65-9	0.05	mg/kg	---	---	<0.05	---	---
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	---	---	<0.05	---	---
4,4'-DDD	72-54-8	0.05	mg/kg	---	---	<0.05	---	---
Endrin aldehyde	7421-93-4	0.05	mg/kg	---	---	<0.05	---	---
Endosulfan sulfate	1031-07-8	0.05	mg/kg	---	---	<0.05	---	---
4,4'-DDT	50-29-3	0.2	mg/kg	---	---	<0.2	---	---
Endrin ketone	53494-70-5	0.05	mg/kg	---	---	<0.05	---	---
Methoxychlor	72-43-5	0.2	mg/kg	---	---	<0.2	---	---
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	---	---	<0.05	---	---
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	---	---	<0.05	---	---
<b>EP068B: Organophosphorus Pesticides (OP)</b>								
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	---	---
Pirimiphos-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	---	---

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP1 -0.3m	20-8613 /TP1 -0.65m	20-8613 /TP2 -0.3m	20-8613 /TP3 -0.5m	20-8613 /TP3 0.55m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-001	EW1800592-002	EW1800592-003	EW1800592-004	EW1800592-005
				Result	Result	Result	Result	Result
<b>EP068B: Organophosphorus Pesticides (OP) - Continued</b>								
Azinphos Methyl	86-50-0	0.05	mg/kg	---	---	<0.05	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	---	---
Phenanthren	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	---	---
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	---	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	---	100	mg/kg	<100	<100	<100	<100	<100

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP1 -0.3m	20-8613 /TP1 -0.65m	20-8613 /TP2 -0.3m	20-8613 /TP3 -0.5m	20-8613 /TP3 0.55m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-001	EW1800592-002	EW1800592-003	EW1800592-004	EW1800592-005
				Result	Result	Result	Result	Result
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>								
>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
<b>EP080: BTEXN</b>								
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
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	---	---	95.0	---	---
<b>EP068S: Organochlorine Pesticide Surrogate</b>								
Dibromo-DDE	21655-73-2	0.05	%	---	---	89.0	---	---
<b>EP068T: Organophosphorus Pesticide Surrogate</b>								
DEF	78-48-8	0.05	%	---	---	96.9	---	---
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.5	%	---	---	80.0	---	---
2-Chlorophenol-D4	93951-73-6	0.5	%	---	---	79.2	---	---
2,4,6-Tribromophenol	118-79-6	0.5	%	---	---	62.4	---	---
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.5	%	---	---	82.9	---	---
Anthracene-d10	1719-06-8	0.5	%	---	---	82.8	---	---
4-Terphenyl-d14	1718-51-0	0.5	%	---	---	83.6	---	---
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	92.3	90.4	100	96.7	95.9
Toluene-D8	2037-26-5	0.2	%	90.1	83.2	99.6	88.0	84.1
4-Bromofluorobenzene	460-00-4	0.2	%	92.3	81.3	92.6	87.4	82.6

## Analytical Results

Client sample ID				20-8613 /TP4 -0.3m	20-8613 /TP5 -0.5m	20-8613 /TP5 -2.7m	20-8613 /TP6 -0.2m	20-8613 /TP7 -0.4m
Compound	CAS Number	LOR	Unit	EW1800592-006	EW1800592-007	EW1800592-008	EW1800592-009	EW1800592-010
				Result	Result	Result	Result	Result
<b>EA002 : pH (Soils)</b>								
pH Value	---	0.1	pH Unit	---	---	6.3	---	---
<b>EA055: Moisture Content</b>								
Moisture Content	---	1.0	%	8.1	7.8	---	11.9	5.8
<b>EA055: Moisture Content (Dried @ 105-110°C)</b>								
Moisture Content	---	1.0	%	---	---	20.0	---	---
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	5	9	10	8	6
Copper	7440-50-8	5	mg/kg	<5	54	6	8	<5
Lead	7439-92-1	5	mg/kg	6	44	17	15	6
Nickel	7440-02-0	2	mg/kg	<2	4	2	6	<2
Zinc	7440-66-6	5	mg/kg	9	157	27	35	5
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	---	0.1	mg/kg	---	<0.1	<0.1	<0.1	---
<b>EP068A: Organochlorine Pesticides (OC)</b>								
alpha-BHC	319-84-6	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
beta-BHC	319-85-7	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
gamma-BHC	58-89-9	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
delta-BHC	319-86-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Heptachlor	76-44-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Aldrin	309-00-2	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Heptachlor epoxide	1024-57-3	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
^ Total Chlordane (sum)	----	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
trans-Chlordane	5103-74-2	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
alpha-Endosulfan	959-98-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
cis-Chlordane	5103-71-9	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Dieldrin	60-57-1	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
4,4'-DDE	72-55-9	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Endrin	72-20-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
beta-Endosulfan	33213-65-9	0.05	mg/kg	---	<0.05	<0.05	<0.05	---

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP4 -0.3m	20-8613 /TP5 -0.5m	20-8613 /TP5 -2.7m	20-8613 /TP6 -0.2m	20-8613 /TP7 -0.4m
		Client sampling date / time		12-Feb-2018 00:00				
Compound	CAS Number	LOR	Unit	EW1800592-006	EW1800592-007	EW1800592-008	EW1800592-009	EW1800592-010
				Result	Result	Result	Result	Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>								
<sup>^</sup> Endosulfan (sum)	115-29-7	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
4,4'-DDD	72-54-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Endrin aldehyde	7421-93-4	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Endosulfan sulfate	1031-07-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
4,4'-DDT	50-29-3	0.2	mg/kg	---	<0.2	<0.2	<0.2	---
Endrin ketone	53494-70-5	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Methoxychlor	72-43-5	0.2	mg/kg	---	<0.2	<0.2	<0.2	---
<sup>^</sup> Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
<sup>^</sup> Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
<b>EP068B: Organophosphorus Pesticides (OP)</b>								
Dichlorvos	62-73-7	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Demeton-S-methyl	919-86-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Monocrotophos	6923-22-4	0.2	mg/kg	---	<0.2	<0.2	<0.2	---
Dimethoate	60-51-5	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Diazinon	333-41-5	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Parathion-methyl	298-00-0	0.2	mg/kg	---	<0.2	<0.2	<0.2	---
Malathion	121-75-5	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Fenthion	55-38-9	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Chlorpyrifos	2921-88-2	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Parathion	56-38-2	0.2	mg/kg	---	<0.2	<0.2	<0.2	---
Pirimiphos-ethyl	23505-41-1	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Chlorfenvinphos	470-90-6	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Bromophos-ethyl	4824-78-6	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Fenamiphos	22224-92-6	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Prothiofos	34643-46-4	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Ethion	563-12-2	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Carbophenothion	786-19-6	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
Azinphos Methyl	86-50-0	0.05	mg/kg	---	<0.05	<0.05	<0.05	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	---	<0.5	<0.5	<0.5	---
Acenaphthylene	208-96-8	0.5	mg/kg	---	<0.5	<0.5	<0.5	---
Acenaphthene	83-32-9	0.5	mg/kg	---	<0.5	<0.5	<0.5	---

## *Analytical Results*

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP4 -0.3m	20-8613 /TP5 -0.5m	20-8613 /TP5 -2.7m	20-8613 /TP6 -0.2m	20-8613 /TP7 -0.4m
		Client sampling date / time		12-Feb-2018 00:00				
Compound	CAS Number	LOR	Unit	EW1800592-006	EW1800592-007	EW1800592-008	EW1800592-009	EW1800592-010
				Result	Result	Result	Result	Result
<b>EP080: BTEXN - Continued</b>								
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
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	---	118	82.0	92.0	---
<b>EP068S: Organochlorine Pesticide Surrogate</b>								
Dibromo-DDE	21655-73-2	0.05	%	---	88.9	81.0	93.3	---
<b>EP068T: Organophosphorus Pesticide Surrogate</b>								
DEF	78-48-8	0.05	%	---	108	102	114	---
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.5	%	---	80.8	77.9	77.8	---
2-Chlorophenol-D4	93951-73-6	0.5	%	---	80.0	77.0	76.0	---
2,4,6-Tribromophenol	118-79-6	0.5	%	---	62.6	64.1	61.1	---
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.5	%	---	82.6	80.4	78.7	---
Anthracene-d10	1719-06-8	0.5	%	---	82.5	81.3	79.5	---
4-Terphenyl-d14	1718-51-0	0.5	%	---	83.4	82.0	79.8	---
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	96.6	100	93.3	97.4	98.6
Toluene-D8	2037-26-5	0.2	%	88.2	92.4	87.6	89.6	91.9
4-Bromofluorobenzene	460-00-4	0.2	%	84.4	89.5	83.4	86.8	87.2

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP8 -0.4m	20-8613 /TP9 -0.4m	20-8613 /TP10 -0.3m	20-8613 /TP10 -2.0m	20-8613 /TP11 -0.5m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-011	EW1800592-012	EW1800592-013	EW1800592-014	EW1800592-015
				Result	Result	Result	Result	Result
<b>EA055: Moisture Content</b>								
Moisture Content	---	1.0	%	16.1	22.2	21.0	19.1	6.5
<b>ED006: Exchangeable Cations on Alkaline Soils</b>								
Exchangeable Calcium	---	0.2	meq/100g	---	---	---	<0.2	---
Exchangeable Magnesium	---	0.2	meq/100g	---	---	---	<0.2	---
Exchangeable Potassium	---	0.2	meq/100g	---	---	---	<0.2	---
Exchangeable Sodium	---	0.2	meq/100g	---	---	---	<0.2	---
Cation Exchange Capacity	---	0.2	meq/100g	---	---	---	<0.2	---
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	6	8	9	<2	9
Copper	7440-50-8	5	mg/kg	5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg	17	<5	8	<5	<5
Nickel	7440-02-0	2	mg/kg	4	<2	4	<2	<2
Zinc	7440-66-6	5	mg/kg	29	<5	10	<5	<5
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	---	0.1	mg/kg	---	<0.1	<0.1	---	---
<b>EP068A: Organochlorine Pesticides (OC)</b>								
alpha-BHC	319-84-6	0.05	mg/kg	---	<0.05	<0.05	---	---
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	---	<0.05	<0.05	---	---
beta-BHC	319-85-7	0.05	mg/kg	---	<0.05	<0.05	---	---
gamma-BHC	58-89-9	0.05	mg/kg	---	<0.05	<0.05	---	---
delta-BHC	319-86-8	0.05	mg/kg	---	<0.05	<0.05	---	---
Heptachlor	76-44-8	0.05	mg/kg	---	<0.05	<0.05	---	---
Aldrin	309-00-2	0.05	mg/kg	---	<0.05	<0.05	---	---
Heptachlor epoxide	1024-57-3	0.05	mg/kg	---	<0.05	<0.05	---	---
^ Total Chlordane (sum)	----	0.05	mg/kg	---	<0.05	<0.05	---	---
trans-Chlordane	5103-74-2	0.05	mg/kg	---	<0.05	<0.05	---	---
alpha-Endosulfan	959-98-8	0.05	mg/kg	---	<0.05	<0.05	---	---
cis-Chlordane	5103-71-9	0.05	mg/kg	---	<0.05	<0.05	---	---
Dieldrin	60-57-1	0.05	mg/kg	---	<0.05	<0.05	---	---
4,4'-DDE	72-55-9	0.05	mg/kg	---	<0.05	<0.05	---	---

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP8 -0.4m	20-8613 /TP9 -0.4m	20-8613 /TP10 -0.3m	20-8613 /TP10 -2.0m	20-8613 /TP11 -0.5m
Compound	CAS Number	LOR	Unit	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
				Result	Result	Result	Result	Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>								
Endrin	72-20-8	0.05	mg/kg	---	<0.05	<0.05	---	---
beta-Endosulfan	33213-65-9	0.05	mg/kg	---	<0.05	<0.05	---	---
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	---	<0.05	<0.05	---	---
4,4'-DDD	72-54-8	0.05	mg/kg	---	<0.05	<0.05	---	---
Endrin aldehyde	7421-93-4	0.05	mg/kg	---	<0.05	<0.05	---	---
Endosulfan sulfate	1031-07-8	0.05	mg/kg	---	<0.05	<0.05	---	---
4,4'-DDT	50-29-3	0.2	mg/kg	---	<0.2	<0.2	---	---
Endrin ketone	53494-70-5	0.05	mg/kg	---	<0.05	<0.05	---	---
Methoxychlor	72-43-5	0.2	mg/kg	---	<0.2	<0.2	---	---
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	---	<0.05	<0.05	---	---
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	---	<0.05	<0.05	---	---
<b>EP068B: Organophosphorus Pesticides (OP)</b>								
Dichlorvos	62-73-7	0.05	mg/kg	---	<0.05	<0.05	---	---
Demeton-S-methyl	919-86-8	0.05	mg/kg	---	<0.05	<0.05	---	---
Monocrotophos	6923-22-4	0.2	mg/kg	---	<0.2	<0.2	---	---
Dimethoate	60-51-5	0.05	mg/kg	---	<0.05	<0.05	---	---
Diazinon	333-41-5	0.05	mg/kg	---	<0.05	<0.05	---	---
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	---	<0.05	<0.05	---	---
Parathion-methyl	298-00-0	0.2	mg/kg	---	<0.2	<0.2	---	---
Malathion	121-75-5	0.05	mg/kg	---	<0.05	<0.05	---	---
Fenthion	55-38-9	0.05	mg/kg	---	<0.05	<0.05	---	---
Chlorpyrifos	2921-88-2	0.05	mg/kg	---	<0.05	<0.05	---	---
Parathion	56-38-2	0.2	mg/kg	---	<0.2	<0.2	---	---
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	---	<0.05	<0.05	---	---
Chlorfenvinphos	470-90-6	0.05	mg/kg	---	<0.05	<0.05	---	---
Bromophos-ethyl	4824-78-6	0.05	mg/kg	---	<0.05	<0.05	---	---
Fenamiphos	22224-92-6	0.05	mg/kg	---	<0.05	<0.05	---	---
Prothiofos	34643-46-4	0.05	mg/kg	---	<0.05	<0.05	---	---
Ethion	563-12-2	0.05	mg/kg	---	<0.05	<0.05	---	---
Carbophenothonion	786-19-6	0.05	mg/kg	---	<0.05	<0.05	---	---
Azinphos Methyl	86-50-0	0.05	mg/kg	---	<0.05	<0.05	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	---	<0.5	<0.5	---	---

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP8 -0.4m	20-8613 /TP9 -0.4m	20-8613 /TP10 -0.3m	20-8613 /TP10 -2.0m	20-8613 /TP11 -0.5m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-011	EW1800592-012	EW1800592-013	EW1800592-014	EW1800592-015
				Result	Result	Result	Result	Result
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
Acenaphthylene	208-96-8	0.5	mg/kg	---	<0.5	<0.5	---	---
Acenaphthene	83-32-9	0.5	mg/kg	---	<0.5	<0.5	---	---
Fluorene	86-73-7	0.5	mg/kg	---	<0.5	<0.5	---	---
Phenanthrene	85-01-8	0.5	mg/kg	---	<0.5	<0.5	---	---
Anthracene	120-12-7	0.5	mg/kg	---	<0.5	<0.5	---	---
Fluoranthene	206-44-0	0.5	mg/kg	---	<0.5	<0.5	---	---
Pyrene	129-00-0	0.5	mg/kg	---	<0.5	<0.5	---	---
Benz(a)anthracene	56-55-3	0.5	mg/kg	---	<0.5	<0.5	---	---
Chrysene	218-01-9	0.5	mg/kg	---	<0.5	<0.5	---	---
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	---	<0.5	<0.5	---	---
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	---	<0.5	<0.5	---	---
Benzo(a)pyrene	50-32-8	0.5	mg/kg	---	<0.5	<0.5	---	---
Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	---	<0.5	<0.5	---	---
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	---	<0.5	<0.5	---	---
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	---	<0.5	<0.5	---	---
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg	---	<0.5	<0.5	---	---
^ Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	---	<0.5	<0.5	---	---
^ Benzo(a)pyrene TEQ (half LOR)	---	0.5	mg/kg	---	<b>0.6</b>	<b>0.6</b>	---	---
^ Benzo(a)pyrene TEQ (LOR)	---	0.5	mg/kg	---	<b>1.2</b>	<b>1.2</b>	---	---
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	---	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	---	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	---	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	<50	<50	<50	<50

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP8 -0.4m	20-8613 /TP9 -0.4m	20-8613 /TP10 -0.3m	20-8613 /TP10 -2.0m	20-8613 /TP11 -0.5m
Compound	CAS Number	LOR	Unit	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
				Result	Result	Result	Result	Result
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>								
<sup>^</sup> >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
<sup>^</sup> Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
<sup>^</sup> 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
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	---	91.0	95.0	---	---
<b>EP068S: Organochlorine Pesticide Surrogate</b>								
Dibromo-DDE	21655-73-2	0.05	%	---	83.8	89.2	---	---
<b>EP068T: Organophosphorus Pesticide Surrogate</b>								
DEF	78-48-8	0.05	%	---	97.3	109	---	---
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.5	%	---	78.7	79.9	---	---
2-Chlorophenol-D4	93951-73-6	0.5	%	---	77.4	78.8	---	---
2,4,6-Tribromophenol	118-79-6	0.5	%	---	61.0	62.0	---	---
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.5	%	---	80.2	81.0	---	---
Anthracene-d10	1719-06-8	0.5	%	---	80.4	81.4	---	---
4-Terphenyl-d14	1718-51-0	0.5	%	---	81.2	83.1	---	---
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	93.9	91.4	84.4	87.9	105
Toluene-D8	2037-26-5	0.2	%	87.2	82.8	77.6	81.4	95.8
4-Bromofluorobenzene	460-00-4	0.2	%	86.8	82.1	79.1	79.5	92.9

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP11 -1.5m	20-8613 /TP12 -0.3m	20-8613 /TP13 -0.4m	20-8613 /TP13 -1.3m	20-8613 /TP14 0.5m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-016	EW1800592-017	EW1800592-018	EW1800592-019	EW1800592-020
				Result	Result	Result	Result	Result
<b>EA002 : pH (Soils)</b>								
pH Value	---	0.1	pH Unit	---	7.8	---	---	---
<b>EA055: Moisture Content</b>								
Moisture Content	---	1.0	%	15.1	20.4	14.4	9.7	9.3
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	12	11	12	9	6
Copper	7440-50-8	5	mg/kg	<5	<5	13	<5	27
Lead	7439-92-1	5	mg/kg	6	<5	18	<5	19
Nickel	7440-02-0	2	mg/kg	<2	2	10	<2	3
Zinc	7440-66-6	5	mg/kg	<5	7	49	5	72
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	---	---	---	<0.1
<b>EP068A: Organochlorine Pesticides (OC)</b>								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	---	---	---	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	---	---	---	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	---	---	---	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	---	---	---	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	---	---	---	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	---	---	---	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	---	---	---	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	---	---	---	<0.05
^ Total Chlordane (sum)	---	0.05	mg/kg	<0.05	---	---	---	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	---	---	---	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	---	---	---	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	---	---	---	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	---	---	---	0.24
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	---	---	---	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	---	---	---	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	---	---	---	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	---	---	---	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	---	---	---	<0.05

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP11 -1.5m	20-8613 /TP12 -0.3m	20-8613 /TP13 -0.4m	20-8613 /TP13 -1.3m	20-8613 /TP14 0.5m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-016	EW1800592-017	EW1800592-018	EW1800592-019	EW1800592-020
				Result	Result	Result	Result	Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>								
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	---	---	---	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	---	---	---	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	---	---	---	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	---	---	---	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	---	---	---	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	---	---	---	0.24
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	---	---	---	<0.05
<b>EP068B: Organophosphorus Pesticides (OP)</b>								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	---	---	---	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	---	---	---	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	---	---	---	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	---	---	---	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	---	---	---	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	---	---	---	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	---	---	---	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	---	---	---	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	---	---	---	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	---	---	---	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	---	---	---	<0.2
Pirimiphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	---	---	---	<0.05
Chlorgenvinphos	470-90-6	0.05	mg/kg	<0.05	---	---	---	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	---	---	---	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	---	---	---	<0.05
Prothifos	34643-46-4	0.05	mg/kg	<0.05	---	---	---	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	---	---	---	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	---	---	---	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	---	---	---	<0.05
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	---	---	---	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	---	---	---	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	---	---	---	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	---	---	---	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	---	---	---	<0.5

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP11 -1.5m	20-8613 /TP12 -0.3m	20-8613 /TP13 -0.4m	20-8613 /TP13 -1.3m	20-8613 /TP14 0.5m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-016	EW1800592-017	EW1800592-018	EW1800592-019	EW1800592-020
				Result	Result	Result	Result	Result
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
Anthracene	120-12-7	0.5	mg/kg	<0.5	---	---	---	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	---	---	---	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	---	---	---	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	---	---	---	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	---	---	---	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	---	---	---	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	---	---	---	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	---	---	---	<0.5
Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	---	---	---	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	---	---	---	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	---	---	---	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	---	---	---	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	---	---	---	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	---	---	---	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	---	---	---	1.2
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX	C6_C10-BTEX (F1)	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
<b>EP080: BTEXN</b>								
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

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP11 -1.5m	20-8613 /TP12 -0.3m	20-8613 /TP13 -0.4m	20-8613 /TP13 -1.3m	20-8613 /TP14 0.5m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-016	EW1800592-017	EW1800592-018	EW1800592-019	EW1800592-020
				Result	Result	Result	Result	Result
<b>EP080: BTEXN - Continued</b>								
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
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	115	---	---	---	112
<b>EP068S: Organochlorine Pesticide Surrogate</b>								
Dibromo-DDE	21655-73-2	0.05	%	101	---	---	---	90.5
<b>EP068T: Organophosphorus Pesticide Surrogate</b>								
DEF	78-48-8	0.05	%	111	---	---	---	108
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.5	%	79.4	---	---	---	77.3
2-Chlorophenol-D4	93951-73-6	0.5	%	77.9	---	---	---	76.5
2,4,6-Tribromophenol	118-79-6	0.5	%	60.5	---	---	---	60.2
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.5	%	79.9	---	---	---	78.1
Anthracene-d10	1719-06-8	0.5	%	79.7	---	---	---	78.7
4-Terphenyl-d14	1718-51-0	0.5	%	81.2	---	---	---	79.1
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	94.0	94.3	97.1	96.9	97.7
Toluene-D8	2037-26-5	0.2	%	77.4	83.1	88.4	80.3	87.8
4-Bromofluorobenzene	460-00-4	0.2	%	79.3	81.4	83.9	81.9	85.0

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP15 -0.20m	20-8613 /TP15 -1.0m	20-8613 /TP16 -0.3m	20-8613 /TP16 - 1.1m	20-8613 /TP17 -0.2m	
Compound		CAS Number	LOR	Unit	EW1800592-021	EW1800592-022	EW1800592-023	EW1800592-024	EW1800592-025
				Result	Result	Result	Result	Result	Result
<b>EA002 : pH (Soils)</b>									
pH Value	---	0.1	pH Unit	---	4.8	---	---	---	7.5
<b>EA055: Moisture Content</b>									
Moisture Content	---	1.0	%	23.0	12.9	11.0	28.6	---	---
<b>EA055: Moisture Content (Dried @ 105-110°C)</b>									
Moisture Content	---	1.0	%	---	---	---	---	---	4.7
<b>ED006: Exchangeable Cations on Alkaline Soils</b>									
Exchangeable Calcium	---	0.2	meq/100g	2.3	---	---	---	---	---
Exchangeable Magnesium	---	0.2	meq/100g	<0.2	---	---	---	---	---
Exchangeable Potassium	---	0.2	meq/100g	<0.2	---	---	---	---	---
Exchangeable Sodium	---	0.2	meq/100g	<0.2	---	---	---	---	---
Cation Exchange Capacity	---	0.2	meq/100g	2.3	---	---	---	---	---
Exchangeable Sodium Percent	---	0.2	%	<0.2	---	---	---	---	---
<b>EG005T: Total Metals by ICP-AES</b>									
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	8	2	14	15	9	9
Copper	7440-50-8	5	mg/kg	<5	<5	12	12	24	24
Lead	7439-92-1	5	mg/kg	<5	8	28	44	107	107
Nickel	7440-02-0	2	mg/kg	<2	<2	9	4	4	4
Zinc	7440-66-6	5	mg/kg	12	<5	81	104	123	123
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>									
Total Polychlorinated biphenyls	---	0.1	mg/kg	---	---	---	---	---	<0.1
<b>EP068A: Organochlorine Pesticides (OC)</b>									
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

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP15 -0.20m	20-8613 /TP15 -1.0m	20-8613 /TP16 -0.3m	20-8613 /TP16 - 1.1m	20-8613 /TP17 -0.2m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-021	EW1800592-022	EW1800592-023	EW1800592-024	EW1800592-025
				Result	Result	Result	Result	Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>								
trans-Chlordane	5103-74-2	0.05	mg/kg	---	---	---	---	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	---	---	---	---	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	---	---	---	---	<0.05
Dieldrin	60-57-1	0.05	mg/kg	---	---	---	---	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	---	---	---	---	<0.05
Endrin	72-20-8	0.05	mg/kg	---	---	---	---	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	---	---	---	---	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	---	---	---	---	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	---	---	---	---	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	---	---	---	---	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	---	---	---	---	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	---	---	---	---	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	---	---	---	---	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	---	---	---	---	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	---	---	---	---	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	---	---	---	---	<0.05
<b>EP068B: Organophosphorus Pesticides (OP)</b>								
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
Pirimiphos-ethyl	23505-41-1	0.05	mg/kg	---	---	---	---	<0.05
Chlorgenvinphos	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
Prothifos	34643-46-4	0.05	mg/kg	---	---	---	---	<0.05

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP15 -0.20m	20-8613 /TP15 -1.0m	20-8613 /TP16 -0.3m	20-8613 /TP16 - 1.1m	20-8613 /TP17 -0.2m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-021	EW1800592-022	EW1800592-023	EW1800592-024	EW1800592-025
				Result	Result	Result	Result	Result
<b>EP068B: Organophosphorus Pesticides (OP) - Continued</b>								
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
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP15 -0.20m	20-8613 /TP15 -1.0m	20-8613 /TP16 -0.3m	20-8613 /TP16 - 1.1m	20-8613 /TP17 -0.2m
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-021	EW1800592-022	EW1800592-023	EW1800592-024	EW1800592-025
				Result	Result	Result	Result	Result
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>								
>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
<b>EP080: BTEXN</b>								
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
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	---	---	---	---	116
<b>EP068S: Organochlorine Pesticide Surrogate</b>								
Dibromo-DDE	21655-73-2	0.05	%	---	---	---	---	121
<b>EP068T: Organophosphorus Pesticide Surrogate</b>								
DEF	78-48-8	0.05	%	---	---	---	---	101
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.5	%	---	---	---	---	84.2
2-Chlorophenol-D4	93951-73-6	0.5	%	---	---	---	---	81.0
2,4,6-Tribromophenol	118-79-6	0.5	%	---	---	---	---	67.1
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.5	%	---	---	---	---	85.5
Anthracene-d10	1719-06-8	0.5	%	---	---	---	---	84.8
4-Terphenyl-d14	1718-51-0	0.5	%	---	---	---	---	86.6
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	85.8	86.2	92.4	80.1	97.9
Toluene-D8	2037-26-5	0.2	%	78.4	84.3	81.8	76.4	90.9
4-Bromofluorobenzene	460-00-4	0.2	%	72.1	72.1	72.8	80.2	80.7

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP17 -0.6m	20-8613 /TP18 -0.2m	20-8613 /TP19 -0.15m	20-8613 /TP20 -0.3m	20-8613 /D1	
Compound		CAS Number	LOR	Unit	EW1800592-026	EW1800592-027	EW1800592-028	EW1800592-029	EW1800592-030
				Result	Result	Result	Result	Result	Result
<b>EA002 : pH (Soils)</b>									
pH Value	---	0.1	pH Unit	---	5.6	---	---	---	---
<b>EA055: Moisture Content</b>									
Moisture Content	---	1.0	%	27.6	4.7	23.0	---	---	---
<b>EA055: Moisture Content (Dried @ 105-110°C)</b>									
Moisture Content	---	1.0	%	---	---	---	24.3	24.3	18.3
<b>ED007: Exchangeable Cations</b>									
Exchangeable Calcium	---	0.1	meq/100g	---	---	---	0.5	0.5	---
Exchangeable Magnesium	---	0.1	meq/100g	---	---	---	0.2	0.2	---
Exchangeable Potassium	---	0.1	meq/100g	---	---	---	<0.1	<0.1	---
Exchangeable Sodium	---	0.1	meq/100g	---	---	---	<0.1	<0.1	---
Cation Exchange Capacity	---	0.1	meq/100g	---	---	---	0.8	0.8	---
Exchangeable Sodium Percent	---	0.1	%	---	---	---	4.8	4.8	---
<b>EG005T: Total Metals by ICP-AES</b>									
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	13	7	22	7	2	2
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg	8	14	<5	<5	<5	9
Nickel	7440-02-0	2	mg/kg	<2	<2	<2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg	7	58	<5	<5	<5	<5
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>									
Total Polychlorinated biphenyls	---	0.1	mg/kg	---	---	---	---	<0.1	---
<b>EP068A: Organochlorine Pesticides (OC)</b>									
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	---

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP17 -0.6m	20-8613 /TP18 -0.2m	20-8613 /TP19 -0.15m	20-8613 /TP20 -0.3m	20-8613 /D1
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-026	EW1800592-027	EW1800592-028	EW1800592-029	EW1800592-030
				Result	Result	Result	Result	Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>								
trans-Chlordane	5103-74-2	0.05	mg/kg	---	---	---	<0.05	---
alpha-Endosulfan	959-98-8	0.05	mg/kg	---	---	---	<0.05	---
cis-Chlordane	5103-71-9	0.05	mg/kg	---	---	---	<0.05	---
Dieldrin	60-57-1	0.05	mg/kg	---	---	---	<0.05	---
4,4'-DDE	72-55-9	0.05	mg/kg	---	---	---	<0.05	---
Endrin	72-20-8	0.05	mg/kg	---	---	---	<0.05	---
beta-Endosulfan	33213-65-9	0.05	mg/kg	---	---	---	<0.05	---
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	---	---	---	<0.05	---
4,4'-DDD	72-54-8	0.05	mg/kg	---	---	---	<0.05	---
Endrin aldehyde	7421-93-4	0.05	mg/kg	---	---	---	<0.05	---
Endosulfan sulfate	1031-07-8	0.05	mg/kg	---	---	---	<0.05	---
4,4'-DDT	50-29-3	0.2	mg/kg	---	---	---	<0.2	---
Endrin ketone	53494-70-5	0.05	mg/kg	---	---	---	<0.05	---
Methoxychlor	72-43-5	0.2	mg/kg	---	---	---	<0.2	---
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	---	---	---	<0.05	---
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	---	---	---	<0.05	---
<b>EP068B: Organophosphorus Pesticides (OP)</b>								
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	---
Pirimiphos-ethyl	23505-41-1	0.05	mg/kg	---	---	---	<0.05	---
Chlorgenvinphos	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	---
Prothifos	34643-46-4	0.05	mg/kg	---	---	---	<0.05	---

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP17 -0.6m	20-8613 /TP18 -0.2m	20-8613 /TP19 -0.15m	20-8613 /TP20 -0.3m	20-8613 /D1
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-026	EW1800592-027	EW1800592-028	EW1800592-029	EW1800592-030
				Result	Result	Result	Result	Result
<b>EP068B: Organophosphorus Pesticides (OP) - Continued</b>								
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	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	---
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	---	10	mg/kg	<10	<10	<10	<10	---
C10 - C14 Fraction	---	50	mg/kg	<50	<50	<50	<50	---
C15 - C28 Fraction	---	100	mg/kg	<100	<100	<100	<100	---
C29 - C36 Fraction	---	100	mg/kg	<100	<100	<100	<100	---
^ C10 - C36 Fraction (sum)	---	50	mg/kg	<50	<50	<50	<50	---
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	---

## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID		20-8613 /TP17 -0.6m	20-8613 /TP18 -0.2m	20-8613 /TP19 -0.15m	20-8613 /TP20 -0.3m	20-8613 /D1
		Client sampling date / time		12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00	12-Feb-2018 00:00
Compound	CAS Number	LOR	Unit	EW1800592-026	EW1800592-027	EW1800592-028	EW1800592-029	EW1800592-030
				Result	Result	Result	Result	Result
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>								
>C10 - C16 Fraction	---	50	mg/kg	<50	<50	<50	<50	---
>C16 - C34 Fraction	---	100	mg/kg	<100	<100	<100	<100	---
>C34 - C40 Fraction	---	100	mg/kg	<100	<100	<100	<100	---
^ >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	<50	<50	<50	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	50	mg/kg	<50	<50	<50	<50	---
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	---
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	---
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	---
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	---
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	---
^ Sum of BTEX	---	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	---
^ Total Xylenes	---	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	---
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	---
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	---	---	---	119	---
<b>EP068S: Organochlorine Pesticide Surrogate</b>								
Dibromo-DDE	21655-73-2	0.05	%	---	---	---	115	---
<b>EP068T: Organophosphorus Pesticide Surrogate</b>								
DEF	78-48-8	0.05	%	---	---	---	110	---
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.5	%	---	---	---	84.9	---
2-Chlorophenol-D4	93951-73-6	0.5	%	---	---	---	82.5	---
2,4,6-Tribromophenol	118-79-6	0.5	%	---	---	---	71.2	---
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.5	%	---	---	---	85.2	---
Anthracene-d10	1719-06-8	0.5	%	---	---	---	86.6	---
4-Terphenyl-d14	1718-51-0	0.5	%	---	---	---	87.0	---
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	85.1	96.2	88.4	84.3	---
Toluene-D8	2037-26-5	0.2	%	84.5	94.2	83.8	75.6	---
4-Bromofluorobenzene	460-00-4	0.2	%	72.4	81.2	72.2	73.7	---

## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP068S: Organochlorine Pesticide Surrogate</b>			
Dibromo-DDE	21655-73-2	49	147
<b>EP068T: Organophosphorus Pesticide Surrogate</b>			
DEF	78-48-8	35	143
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

## QUALITY CONTROL REPORT

Work Order	: EW1800592	Page	: 1 of 19
Client	: CLEARSAFE ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division NSW South Coast
Contact	: WOLLONGONG	Contact	: Aneta Proscaroski
Address	: 1/185 Berkely Rd UNANDERRA NSW 2526	Address	: 1/19 Ralph Black Dr, North Wollongong 2500 4/13 Geary Pl, North Nowra 2541 Australia NSW
Telephone	: +61 2 1300 042 962	Telephone	: 02 4225 3125
Project	: 20-8613	Date Samples Received	: 12-Feb-2018
Order number	: ----	Date Analysis Commenced	: 13-Feb-2018
C-O-C number	: ----	Issue Date	: 28-Feb-2018
Sampler	: Fergus Cowan		
Site	: ----		
Quote number	: EN/222/17		
No. of samples received	: 30		
No. of samples analysed	: 30		

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



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

### Signatories

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

Signatories	Position	Accreditation Category
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dian Dao		Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD

## 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 (%)
<b>EA002 : pH (Soils) (QC Lot: 1430454)</b>									
ES1804674-002	Anonymous	EA002: pH Value	---	0.1	pH Unit	9.2	9.1	0.00	0% - 20%
ES1804572-002	Anonymous	EA002: pH Value	---	0.1	pH Unit	11.5	11.5	0.00	0% - 20%
<b>EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1433711)</b>									
EW1800592-003	20-8613 /TP2 -0.3m	EA055: Moisture Content	---	1	%	9.8	10.1	2.68	0% - 50%
EW1800592-014	20-8613 /TP10 -2.0m	EA055: Moisture Content	---	1	%	19.1	18.9	1.34	0% - 50%
<b>EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1433712)</b>									
EW1800592-023	20-8613 /TP16 -0.3m	EA055: Moisture Content	---	1	%	11.0	11.2	1.36	0% - 50%
<b>ED006: Exchangeable Cations on Alkaline Soils (QC Lot: 1449888)</b>									
EW1800592-004	20-8613 /TP3 -0.5m	ED006: Exchangeable Calcium	---	0.2	meq/100g	1.2	1.2	0.00	No Limit
		ED006: Exchangeable Magnesium	---	0.2	meq/100g	<0.2	<0.2	0.00	No Limit
		ED006: Exchangeable Potassium	---	0.2	meq/100g	<0.2	<0.2	0.00	No Limit
		ED006: Exchangeable Sodium	---	0.2	meq/100g	<0.2	<0.2	0.00	No Limit
		ED006: Cation Exchange Capacity	---	0.2	meq/100g	1.2	1.2	0.00	No Limit
<b>ED007: Exchangeable Cations (QC Lot: 1443688)</b>									
EW1800592-029	20-8613 /TP20 -0.3m	ED007: Exchangeable Sodium Percent	---	0.1	%	4.8	4.8	0.00	0% - 20%
		ED007: Exchangeable Calcium	---	0.1	meq/100g	0.5	0.5	0.00	No Limit
		ED007: Exchangeable Magnesium	---	0.1	meq/100g	0.2	0.2	0.00	No Limit
		ED007: Exchangeable Potassium	---	0.1	meq/100g	<0.1	<0.1	0.00	No Limit
		ED007: Exchangeable Sodium	---	0.1	meq/100g	<0.1	<0.1	0.00	No Limit
		ED007: Cation Exchange Capacity	---	0.1	meq/100g	0.8	0.8	0.00	No Limit
<b>EG005T: Total Metals by ICP-AES (QC Lot: 1440307)</b>									
EB1803683-054	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	41	38	5.38	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	19	14	25.6	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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 1440307) - continued</b>									
EB1803683-054	Anonymous	EG005T: Arsenic	7440-38-2	5	mg/kg	6	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	36	29	21.7	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	11	10	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	24	24	0.00	No Limit
EW1800592-004	20-8613 /TP3 -0.5m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	18	10	61.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	4	5	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	12	30	85.8	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	89	95	5.88	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	188	221	16.0	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	575	530	8.14	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 1440308)</b>									
EW1800592-014	20-8613 /TP10 -2.0m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
EW1800592-024	20-8613 /TP16 - 1.1m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	16	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	4	4	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	12	10	21.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	44	35	21.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	104	95	8.90	0% - 20%
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1440306)</b>									
EB1803683-054	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EW1800592-004	20-8613 /TP3 -0.5m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1440309)</b>									
EW1800592-014	20-8613 /TP10 -2.0m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EW1800592-024	20-8613 /TP16 - 1.1m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 1429127)</b>									
EW1800592-003	20-8613 /TP2 -0.3m	EP066: Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 1429138)</b>									
ES1804525-001	Anonymous	EP066: Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.2	<0.2	0.00	No Limit
EW1800592-029	20-8613 /TP20 -0.3m	EP066: Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
<b>EP068A: Organochlorine Pesticides (OC) (QC Lot: 1429129)</b>									
EW1800592-003	20-8613 /TP2 -0.3m	EP068: alpha-BHC	319-84-6	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 (%)
<b>EP068A: Organochlorine Pesticides (OC) (QC Lot: 1429129) - continued</b>									
EW1800592-003	20-8613 /TP2 -0.3m	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
<b>EP068A: Organochlorine Pesticides (OC) (QC Lot: 1429137)</b>									
ES1804525-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.12	<0.12	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 (%)
<b>EP068A: Organochlorine Pesticides (OC) (QC Lot: 1429137) - continued</b>									
ES1804525-001	Anonymous	EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.5	<0.5	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.5	<0.5	0.00	No Limit
EW1800592-029	20-8613 /TP20 -0.3m	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
<b>EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1429129)</b>									
EW1800592-003	20-8613 /TP2 -0.3m	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: Pirimiphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorgenvinphos	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

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 (%)
<b>EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1429129) - continued</b>									
EW1800592-003	20-8613 /TP2 -0.3m	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
<b>EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1429137)</b>									
ES1804525-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Chlорfenvinphos	470-90-6	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.12	<0.12	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.5	<0.5	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.5	<0.5	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.5	<0.5	0.00	No Limit
EW1800592-029	20-8613 /TP20 -0.3m	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: Chlорfenvinphos	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



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 (%)
<b>EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1429137) - continued</b>									
EW1800592-029	20-8613 /TP20 -0.3m	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
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1429128)</b>									
EW1800592-003	20-8613 /TP2 -0.3m	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1429136)</b>									
ES1804525-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<2.0	<2.0	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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1429136) - continued</b>									
ES1804525-001	Anonymous	EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<2.0	<2.0	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<1.0	<1.0	0.00	No Limit
EW1800592-029	20-8613 /TP20 -0.3m	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1,2,3,cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429106)</b>									
EW1800592-001	20-8613 /TP1 -0.3m	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EW1800592-011	20-8613 /TP8 -0.4m	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429126)</b>									
EW1800592-011	20-8613 /TP8 -0.4m	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
EW1800592-003	20-8613 /TP2 -0.3m	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
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429135)</b>									
ES1804525-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<220	<220	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<220	<220	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<110	<110	0.00	No Limit
EW1800592-029	20-8613 /TP20 -0.3m	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

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 (%)
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429135) - continued</b>									
EW1800592-029	20-8613 /TP20 -0.3m	EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429179)</b>									
ES1804525-001	Anonymous	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	14	30.7	No Limit
ES1804598-003	Anonymous	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429106)</b>									
EW1800592-001	20-8613 /TP1 -0.3m	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EW1800592-011	20-8613 /TP8 -0.4m	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429126)</b>									
EW1800592-011	20-8613 /TP8 -0.4m	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
EW1800592-003	20-8613 /TP2 -0.3m	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429135)</b>									
ES1804525-001	Anonymous	EP071: >C16 - C34 Fraction	---	100	mg/kg	<110	<110	0.00	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	<110	<110	0.00	No Limit
		EP071: >C10 - C16 Fraction	---	50	mg/kg	<110	<110	0.00	No Limit
EW1800592-029	20-8613 /TP20 -0.3m	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429179)</b>									
ES1804525-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	13	27.7	No Limit
ES1804598-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 1429106)</b>									
EW1800592-001	20-8613 /TP1 -0.3m	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EW1800592-011	20-8613 /TP8 -0.4m	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
		EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

**Sub-Matrix: SOIL**

		Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080: BTEXN (QC Lot: 1429179)</b>									
ES1804525-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.5	<0.5	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
ES1804598-003	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	0.5	0.3	41.1	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	0.8	<0.5	44.6	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 Concentration	Spike Recovery (%)	Recovery Limits (%)		
Method: Compound	CAS Number	LOR	Unit		Result		LCS	Low	High
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1429127) - continued</b>									
EP066: Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	1 mg/kg	98.0	62	126	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1429138)</b>									
EP066: Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	1 mg/kg	106	62	126	
<b>EP068A: Organochlorine Pesticides (OC) (QCLot: 1429129)</b>									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	93.8	69	113	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	65	117	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	90.7	67	119	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	94.8	68	116	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.3	65	117	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.2	67	115	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	69	115	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	62	118	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	63	117	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.9	66	116	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.3	64	116	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.9	66	116	
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.1	67	115	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	67	123	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	69	115	
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	69	121	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	104	56	120	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.1	62	124	
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	86.1	66	120	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	82.5	64	122	
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	74.5	54	130	
<b>EP068A: Organochlorine Pesticides (OC) (QCLot: 1429137)</b>									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	93.3	69	113	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	65	117	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	103	67	119	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.9	68	116	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	65	117	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	67	115	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	108	69	115	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	104	62	118	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	104	63	117	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	66	116	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	64	116	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	102	66	116	

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit				LCS	Low
<b>EP068A: Organochlorine Pesticides (OC) (QCLot: 1429137) - continued</b>								
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	69	115
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	109	62	124
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	100	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	100	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	103	54	130
<b>EP068B: Organophosphorus Pesticides (OP) (QCLot: 1429129)</b>								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	95.3	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.2	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	70	120
EP068: Chloryrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	85.8	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.5	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	85.8	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.5	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	85.4	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	86.9	70	116
EP068: Chlorgenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.9	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.3	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	76.9	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	77.7	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.2	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	81.5	41	123
<b>EP068B: Organophosphorus Pesticides (OP) (QCLot: 1429137)</b>								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	104	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	78.7	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	105	70	120
EP068: Chloryrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	92.2	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	104	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	104	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	69	117

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit				LCS	Low
<b>EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1429137) - continued</b>								
EP068: Chloryrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	104	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	70	116
EP068: Chlوفenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.8	69	121
EP068: Bromphos-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	103	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	101	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	109	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	93.2	41	123
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1429128)</b>								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	94.3	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	92.5	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	95.1	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	92.3	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	95.7	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	103	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	94.2	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	94.7	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.9	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	102	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	91.7	68	116
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	103	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	94.5	70	126
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	88.4	61	121
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	83.6	62	118
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	84.4	63	121
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1429136)</b>								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	96.3	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	91.2	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	97.0	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	94.6	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	97.6	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	103	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	94.7	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	95.5	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.6	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	101	75	127

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1429136) - continued</b>								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	99.5	68	116
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	102	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	92.6	70	126
EP075(SIM): Indeno(1,2,3,cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	92.4	61	121
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	86.7	62	118
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	90.5	63	121
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429106)</b>								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	75.9	68	128
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429126)</b>								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	111	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	113	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	108	71	129
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429135)</b>								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	98.6	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	114	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	100	71	129
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429179)</b>								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	88.8	68	128
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429106)</b>								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	77.4	68	128
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429126)</b>								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	250 mg/kg	97.6	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	119	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	150 mg/kg	80.8	63	131
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429135)</b>								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	250 mg/kg	103	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	118	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	150 mg/kg	92.2	63	131
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429179)</b>								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	86.9	68	128
<b>EP080: BTEXN (QC Lot: 1429106)</b>								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	89.2	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	87.4	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	84.7	65	117
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	86.9	66	118
	106-42-3							

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit		Result	LCS	Low	High
<b>EP080: BTEXN (QCLot: 1429106) - continued</b>								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	90.0	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	94.0	63	119
<b>EP080: BTEXN (QCLot: 1429179)</b>								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	78.6	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.8	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	83.7	65	117
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	91.1	66	118
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	91.1	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	113	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				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 1440307)</b>							
EB1803683-054	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	75.5	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.7	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	80.3	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	89.3	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	96.4	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	70.7	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	102	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 1440308)</b>							
EW1800592-014	20-8613 /TP10 -2.0m	EG005T: Arsenic	7440-38-2	50 mg/kg	95.7	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.8	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	97.8	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	96.6	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	98.6	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	98.1	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	100	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1440306)</b>							
EB1803683-054	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	97.7	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1440309)</b>							
EW1800592-014	20-8613 /TP10 -2.0m	EG035T: Mercury	7439-97-6	5 mg/kg	93.4	70	130

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	Spike Recovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
		<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1429127)</b>					
EW1800592-003	20-8613 /TP2 -0.3m	EP066: Total Polychlorinated biphenyls	---	1 mg/kg	87.0	70	130
		<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1429138)</b>					
ES1804525-001	Anonymous	EP066: Total Polychlorinated biphenyls	---	1 mg/kg	114	70	130
		<b>EP068A: Organochlorine Pesticides (OC) (QCLot: 1429129)</b>					
EW1800592-003	20-8613 /TP2 -0.3m	EP068: gamma-BHC	58-89-9	0.5 mg/kg	105	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	82.8	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	101	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	105	70	130
		EP068: Endrin	72-20-8	2 mg/kg	99.2	70	130
		EP068: 4,4'-DDT	50-29-3	2 mg/kg	88.5	70	130
		<b>EP068A: Organochlorine Pesticides (OC) (QCLot: 1429137)</b>					
ES1804525-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	101	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	90.0	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	74.5	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	78.8	70	130
		EP068: Endrin	72-20-8	2 mg/kg	86.9	70	130
		EP068: 4,4'-DDT	50-29-3	2 mg/kg	101	70	130
		<b>EP068B: Organophosphorus Pesticides (OP) (QCLot: 1429129)</b>					
EW1800592-003	20-8613 /TP2 -0.3m	EP068: Diazinon	333-41-5	0.5 mg/kg	88.2	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	92.0	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	106	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	97.4	70	130
		<b>EP068B: Organophosphorus Pesticides (OP) (QCLot: 1429137)</b>					
ES1804525-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	101	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	91.2	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	98.9	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	83.2	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	76.9	70	130
		<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1429128)</b>					
EW1800592-003	20-8613 /TP2 -0.3m	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	79.8	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	81.0	70	130
		<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1429136)</b>					
ES1804525-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.0	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	99.4	70	130
		<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1429106)</b>					

Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429106) - continued</b>							
EW1800592-001	20-8613 /TP1 -0.3m	EP080: C6 - C9 Fraction	---	32.5 mg/kg	76.6	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429126)</b>							
EW1800592-003	20-8613 /TP2 -0.3m	EP071: C10 - C14 Fraction	---	523 mg/kg	107	73	137
		EP071: C15 - C28 Fraction	---	2319 mg/kg	118	53	131
		EP071: C29 - C36 Fraction	---	1714 mg/kg	132	52	132
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429135)</b>							
ES1804525-001	Anonymous	EP071: C10 - C14 Fraction	---	523 mg/kg	106	73	137
		EP071: C15 - C28 Fraction	---	2319 mg/kg	92.4	53	131
		EP071: C29 - C36 Fraction	---	1714 mg/kg	105	52	132
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429179)</b>							
ES1804525-007	Anonymous	EP080: C6 - C9 Fraction	---	32.5 mg/kg	109	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429106)</b>							
EW1800592-001	20-8613 /TP1 -0.3m	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	77.5	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429126)</b>							
EW1800592-003	20-8613 /TP2 -0.3m	EP071: >C10 - C16 Fraction	---	860 mg/kg	93.5	73	137
		EP071: >C16 - C34 Fraction	---	3223 mg/kg	121	53	131
		EP071: >C34 - C40 Fraction	---	1058 mg/kg	126	52	132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429135)</b>							
ES1804525-001	Anonymous	EP071: >C10 - C16 Fraction	---	860 mg/kg	96.6	73	137
		EP071: >C16 - C34 Fraction	---	3223 mg/kg	93.2	53	131
		EP071: >C34 - C40 Fraction	---	1058 mg/kg	87.8	52	132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429179)</b>							
ES1804525-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	113	70	130
<b>EP080: BTEXN (QC Lot: 1429106)</b>							
EW1800592-001	20-8613 /TP1 -0.3m	EP080: Benzene	71-43-2	2.5 mg/kg	88.6	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	85.9	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	84.8	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	84.0	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.9	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	82.6	70	130
<b>EP080: BTEXN (QC Lot: 1429179)</b>							
ES1804525-007	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	110	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	100	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	99.7	70	130

Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery(%)	Recovery Limits (%)	
EP080: BTEXN (QCLot: 1429179) - continued				Concentration	MS	Low	High
ES1804525-007	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	97.3	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	102	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	110	70	130

## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EW1800592	Page	: 1 of 11
Client	: CLEARSAFE ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division NSW South Coast
Contact	: WOLLONGONG	Telephone	: 02 4225 3125
Project	: 20-8613	Date Samples Received	: 12-Feb-2018
Site	: ----	Issue Date	: 28-Feb-2018
Sampler	: Fergus Cowan	No. of samples received	: 30
Order number	: ----	No. of samples analysed	: 30

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
<b>EA002 : pH (Soils)</b>							
<b>Soil Glass Jar - Unpreserved (EA002)</b> 20-8613 - /TP1 -0.3m, 20-8613 - /TP12 -0.3m, 20-8613 - /TP17 -0.2m,	20-8613 - /TP5 -2.7m, 20-8613 - /TP15 -1.0m, 20-8613 - /TP18 -0.2m	12-Feb-2018	13-Feb-2018	19-Feb-2018	✓	13-Feb-2018	13-Feb-2018
<b>EA055: Moisture Content</b>							
<b>Soil Glass Jar - Unpreserved (EA055)</b> 20-8613 - /TP1 -0.3m, 20-8613 - /TP2 -0.3m, 20-8613 - /TP3 0.55m, 20-8613 - /TP5 -0.5m, 20-8613 - /TP7 -0.4m, 20-8613 - /TP9 -0.4m, 20-8613 - /TP10 -2.0m, 20-8613 - /TP11 -1.5m, 20-8613 - /TP13 -0.4m, 20-8613 - /TP14 0.5m, 20-8613 - /TP15 -1.0m, 20-8613 - /TP16 - 1.1m, 20-8613 - /TP18 -0.2m,	20-8613 - /TP1 -0.65m, 20-8613 - /TP3 -0.5m, 20-8613 - /TP4 -0.3m, 20-8613 - /TP6 -0.2m, 20-8613 - /TP8 -0.4m, 20-8613 - /TP10 -0.3m, 20-8613 - /TP11 -0.5m, 20-8613 - /TP12 -0.3m, 20-8613 - /TP13 -1.3m, 20-8613 - /TP15 -0.20m, 20-8613 - /TP16 -0.3m, 20-8613 - /TP17 -0.6m, 20-8613 - /TP19 -0.15m	12-Feb-2018	----	----	----	14-Feb-2018	26-Feb-2018
<b>EA055: Moisture Content (Dried @ 105-110°C)</b>							
<b>Soil Glass Jar - Unpreserved (EA055)</b> 20-8613 - /TP5 -2.7m, 20-8613 - /TP20 -0.3m,	20-8613 - /TP17 -0.2m, 20-8613 - /D1	12-Feb-2018	----	----	----	14-Feb-2018	26-Feb-2018
<b>ED006: Exchangeable Cations on Alkaline Soils</b>							
<b>Soil Glass Jar - Unpreserved (ED006)</b> 20-8613 - /TP3 -0.5m, 20-8613 - /TP15 -0.20m	20-8613 - /TP10 -2.0m,	12-Feb-2018	23-Feb-2018	12-Mar-2018	✓	23-Feb-2018	12-Mar-2018
<b>ED007: Exchangeable Cations</b>							
<b>Soil Glass Jar - Unpreserved (ED007)</b> 20-8613 - /TP20 -0.3m		12-Feb-2018	20-Feb-2018	12-Mar-2018	✓	20-Feb-2018	12-Mar-2018

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
<b>EG005T: Total Metals by ICP-AES</b>								
<b>Soil Glass Jar - Unpreserved (EG005T)</b>								
20-8613 - /TP1 -0.3m,	20-8613 - /TP1 -0.65m,		12-Feb-2018	17-Feb-2018			17-Feb-2018	11-Aug-2018
20-8613 - /TP2 -0.3m,	20-8613 - /TP3 -0.5m,				✓			✓
20-8613 - /TP3 0.55m,	20-8613 - /TP4 -0.3m,							
20-8613 - /TP5 -0.5m,	20-8613 - /TP5 -2.7m,							
20-8613 - /TP6 -0.2m,	20-8613 - /TP7 -0.4m,							
20-8613 - /TP8 -0.4m,	20-8613 - /TP9 -0.4m,							
20-8613 - /TP10 -0.3m,	20-8613 - /TP10 -2.0m,							
20-8613 - /TP11 -0.5m,	20-8613 - /TP11 -1.5m,							
20-8613 - /TP12 -0.3m,	20-8613 - /TP13 -0.4m,							
20-8613 - /TP13 -1.3m,	20-8613 - /TP14 0.5m,							
20-8613 - /TP15 -0.20m,	20-8613 - /TP15 -1.0m,							
20-8613 - /TP16 -0.3m,	20-8613 - /TP16 - 1.1m,							
20-8613 - /TP17 -0.2m,	20-8613 - /TP17 -0.6m,							
20-8613 - /TP18 -0.2m,	20-8613 - /TP19 -0.15m,							
20-8613 - /TP20 -0.3m,	20-8613 - /D1							
<b>EG003T: Total Recoverable Mercury by FIMS</b>								
<b>Soil Glass Jar - Unpreserved (EG003T)</b>								
20-8613 - /TP1 -0.3m,	20-8613 - /TP1 -0.65m,		12-Feb-2018	17-Feb-2018			17-Feb-2018	12-Mar-2018
20-8613 - /TP2 -0.3m,	20-8613 - /TP3 -0.5m,				✓			✓
20-8613 - /TP3 0.55m,	20-8613 - /TP4 -0.3m,							
20-8613 - /TP5 -0.5m,	20-8613 - /TP5 -2.7m,							
20-8613 - /TP6 -0.2m,	20-8613 - /TP7 -0.4m,							
20-8613 - /TP8 -0.4m,	20-8613 - /TP9 -0.4m,							
20-8613 - /TP10 -0.3m,	20-8613 - /TP10 -2.0m,							
20-8613 - /TP11 -0.5m,	20-8613 - /TP11 -1.5m,							
20-8613 - /TP12 -0.3m,	20-8613 - /TP13 -0.4m,							
20-8613 - /TP13 -1.3m,	20-8613 - /TP14 0.5m,							
20-8613 - /TP15 -0.20m,	20-8613 - /TP15 -1.0m,							
20-8613 - /TP16 -0.3m,	20-8613 - /TP16 - 1.1m,							
20-8613 - /TP17 -0.2m,	20-8613 - /TP17 -0.6m,							
20-8613 - /TP18 -0.2m,	20-8613 - /TP19 -0.15m,							
20-8613 - /TP20 -0.3m,	20-8613 - /D1							
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
<b>Soil Glass Jar - Unpreserved (EP066)</b>								
20-8613 - /TP2 -0.3m,	20-8613 - /TP5 -0.5m,		12-Feb-2018	14-Feb-2018			15-Feb-2018	26-Mar-2018
20-8613 - /TP5 -2.7m,	20-8613 - /TP6 -0.2m,				✓			✓
20-8613 - /TP9 -0.4m,	20-8613 - /TP10 -0.3m,							
20-8613 - /TP11 -1.5m,	20-8613 - /TP14 0.5m							
<b>Soil Glass Jar - Unpreserved (EP066)</b>								
20-8613 - /TP17 -0.2m,	20-8613 - /TP20 -0.3m		12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	16-Feb-2018	26-Mar-2018

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
<b>EP068A: Organochlorine Pesticides (OC)</b>								
<b>Soil Glass Jar - Unpreserved (EP068)</b>								
20-8613 - /TP2 -0.3m,	20-8613 - /TP5 -0.5m,		12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Mar-2018
20-8613 - /TP5 -2.7m,	20-8613 - /TP6 -0.2m,							
20-8613 - /TP9 -0.4m,	20-8613 - /TP10 -0.3m,							
20-8613 - /TP11 -1.5m,	20-8613 - /TP14 0.5m							
<b>Soil Glass Jar - Unpreserved (EP068)</b>								
20-8613 - /TP17 -0.2m,	20-8613 - /TP20 -0.3m		12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	16-Feb-2018	26-Mar-2018
<b>EP068B: Organophosphorus Pesticides (OP)</b>								
<b>Soil Glass Jar - Unpreserved (EP068)</b>								
20-8613 - /TP2 -0.3m,	20-8613 - /TP5 -0.5m,		12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Mar-2018
20-8613 - /TP5 -2.7m,	20-8613 - /TP6 -0.2m,							
20-8613 - /TP9 -0.4m,	20-8613 - /TP10 -0.3m,							
20-8613 - /TP11 -1.5m,	20-8613 - /TP14 0.5m							
<b>Soil Glass Jar - Unpreserved (EP068)</b>								
20-8613 - /TP17 -0.2m,	20-8613 - /TP20 -0.3m		12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	16-Feb-2018	26-Mar-2018
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b>								
20-8613 - /TP2 -0.3m,	20-8613 - /TP5 -0.5m,		12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Mar-2018
20-8613 - /TP5 -2.7m,	20-8613 - /TP6 -0.2m,							
20-8613 - /TP9 -0.4m,	20-8613 - /TP10 -0.3m,							
20-8613 - /TP11 -1.5m,	20-8613 - /TP14 0.5m,							
20-8613 - /TP17 -0.2m,	20-8613 - /TP20 -0.3m							

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
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b>								
20-8613 - /TP1 -0.3m,	20-8613 - /TP1 -0.65m,		12-Feb-2018	13-Feb-2018	26-Feb-2018	✓	14-Feb-2018	26-Feb-2018
20-8613 - /TP2 -0.3m,	20-8613 - /TP3 -0.5m,							✓
20-8613 - /TP3 0.55m,	20-8613 - /TP4 -0.3m,							
20-8613 - /TP5 -0.5m,	20-8613 - /TP5 -2.7m,							
20-8613 - /TP6 -0.2m,	20-8613 - /TP7 -0.4m,							
20-8613 - /TP8 -0.4m,	20-8613 - /TP9 -0.4m,							
20-8613 - /TP10 -0.3m,	20-8613 - /TP10 -2.0m,							
20-8613 - /TP11 -0.5m,	20-8613 - /TP11 -1.5m,							
20-8613 - /TP12 -0.3m,	20-8613 - /TP13 -0.4m,							
20-8613 - /TP13 -1.3m,	20-8613 - /TP14 0.5m							
<b>Soil Glass Jar - Unpreserved (EP080)</b>								
20-8613 - /TP15 -0.20m,	20-8613 - /TP15 -1.0m,		12-Feb-2018	13-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Feb-2018
20-8613 - /TP16 -0.3m,	20-8613 - /TP16 - 1.1m,							✓
20-8613 - /TP17 -0.2m,	20-8613 - /TP17 -0.6m,							
20-8613 - /TP18 -0.2m,	20-8613 - /TP19 -0.15m,							
<b>Soil Glass Jar - Unpreserved (EP071)</b>								
20-8613 - /TP1 -0.3m,	20-8613 - /TP1 -0.65m,		12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Mar-2018
20-8613 - /TP2 -0.3m,	20-8613 - /TP3 -0.5m,							✓
20-8613 - /TP3 0.55m,	20-8613 - /TP4 -0.3m,							
20-8613 - /TP5 -0.5m,	20-8613 - /TP5 -2.7m,							
20-8613 - /TP6 -0.2m,	20-8613 - /TP7 -0.4m,							
20-8613 - /TP8 -0.4m,	20-8613 - /TP9 -0.4m,							
20-8613 - /TP10 -0.3m,	20-8613 - /TP10 -2.0m,							
20-8613 - /TP11 -0.5m,	20-8613 - /TP11 -1.5m,							
20-8613 - /TP12 -0.3m,	20-8613 - /TP13 -0.4m,							
20-8613 - /TP13 -1.3m,	20-8613 - /TP14 0.5m,							
20-8613 - /TP15 -0.20m,	20-8613 - /TP15 -1.0m,							
20-8613 - /TP16 -0.3m,	20-8613 - /TP16 - 1.1m,							
20-8613 - /TP17 -0.2m,	20-8613 - /TP17 -0.6m,							
20-8613 - /TP18 -0.2m,	20-8613 - /TP19 -0.15m,							

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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b>								
20-8613 - /TP1 -0.3m,	20-8613 - /TP1 -0.65m,	12-Feb-2018	13-Feb-2018	26-Feb-2018	✓	14-Feb-2018	26-Feb-2018	✓
20-8613 - /TP2 -0.3m,	20-8613 - /TP3 -0.5m,							
20-8613 - /TP3 0.55m,	20-8613 - /TP4 -0.3m,							
20-8613 - /TP5 -0.5m,	20-8613 - /TP5 -2.7m,							
20-8613 - /TP6 -0.2m,	20-8613 - /TP7 -0.4m,							
20-8613 - /TP8 -0.4m,	20-8613 - /TP9 -0.4m,							
20-8613 - /TP10 -0.3m,	20-8613 - /TP10 -2.0m,							
20-8613 - /TP11 -0.5m,	20-8613 - /TP11 -1.5m,							
20-8613 - /TP12 -0.3m,	20-8613 - /TP13 -0.4m,							
20-8613 - /TP13 -1.3m,	20-8613 - /TP14 0.5m							
<b>Soil Glass Jar - Unpreserved (EP080)</b>								
20-8613 - /TP15 -0.20m,	20-8613 - /TP15 -1.0m,	12-Feb-2018	13-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Feb-2018	✓
20-8613 - /TP16 -0.3m,	20-8613 - /TP16 - 1.1m,							
20-8613 - /TP17 -0.2m,	20-8613 - /TP17 -0.6m,							
20-8613 - /TP18 -0.2m,	20-8613 - /TP19 -0.15m,							
<b>Soil Glass Jar - Unpreserved (EP071)</b>								
20-8613 - /TP1 -0.3m,	20-8613 - /TP1 -0.65m,	12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Mar-2018	✓
20-8613 - /TP2 -0.3m,	20-8613 - /TP3 -0.5m,							
20-8613 - /TP3 0.55m,	20-8613 - /TP4 -0.3m,							
20-8613 - /TP5 -0.5m,	20-8613 - /TP5 -2.7m,							
20-8613 - /TP6 -0.2m,	20-8613 - /TP7 -0.4m,							
20-8613 - /TP8 -0.4m,	20-8613 - /TP9 -0.4m,							
20-8613 - /TP10 -0.3m,	20-8613 - /TP10 -2.0m,							
20-8613 - /TP11 -0.5m,	20-8613 - /TP11 -1.5m,							
20-8613 - /TP12 -0.3m,	20-8613 - /TP13 -0.4m,							
20-8613 - /TP13 -1.3m,	20-8613 - /TP14 0.5m,							
20-8613 - /TP15 -0.20m,	20-8613 - /TP15 -1.0m,							
20-8613 - /TP16 -0.3m,	20-8613 - /TP16 - 1.1m,							
20-8613 - /TP17 -0.2m,	20-8613 - /TP17 -0.6m,							
20-8613 - /TP18 -0.2m,	20-8613 - /TP19 -0.15m,							

## 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
<b>EP080: BTEXN</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b>	20-8613 - /TP1 -0.3m, 20-8613 - /TP2 -0.3m, 20-8613 - /TP3 0.55m, 20-8613 - /TP5 -0.5m, 20-8613 - /TP6 -0.2m, 20-8613 - /TP8 -0.4m, 20-8613 - /TP10 -0.3m, 20-8613 - /TP11 -0.5m, 20-8613 - /TP12 -0.3m, 20-8613 - /TP13 -1.3m,	20-8613 - /TP1 -0.65m, 20-8613 - /TP3 -0.5m, 20-8613 - /TP4 -0.3m, 20-8613 - /TP5 -2.7m, 20-8613 - /TP7 -0.4m, 20-8613 - /TP9 -0.4m, 20-8613 - /TP10 -2.0m, 20-8613 - /TP11 -1.5m, 20-8613 - /TP13 -0.4m, 20-8613 - /TP14 0.5m	12-Feb-2018	13-Feb-2018	26-Feb-2018	✓	14-Feb-2018	26-Feb-2018
<b>Soil Glass Jar - Unpreserved (EP080)</b>	20-8613 - /TP15 -0.20m, 20-8613 - /TP16 -0.3m, 20-8613 - /TP17 -0.2m, 20-8613 - /TP18 -0.2m, 20-8613 - /TP20 -0.3m	20-8613 - /TP15 -1.0m, 20-8613 - /TP16 - 1.1m, 20-8613 - /TP17 -0.6m, 20-8613 - /TP19 -0.15m,	12-Feb-2018	13-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Feb-2018

## 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	Analytical Methods	Method	Count		Rate (%)		Quality Control Specification
			QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>							
Exchangeable Cations		ED007	1	1	100.00	10.00	✓ NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils		ED006	1	3	33.33	10.00	✓ NEPM 2013 B3 & ALS QC Standard
Moisture Content		EA055	3	30	10.00	10.00	✓ NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)		EP075(SIM)	3	19	15.79	10.00	✓ NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS		EP068	3	19	15.79	10.00	✓ NEPM 2013 B3 & ALS QC Standard
pH (1:5)		EA002	2	18	11.11	10.00	✓ NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)		EP066	3	19	15.79	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	38	10.53	10.00	✓ NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX		EP080	4	40	10.00	10.00	✓ NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Exchangeable Cations		ED007	1	1	100.00	5.00	✓ NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils		ED006	1	3	33.33	5.00	✓ NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)		EP075(SIM)	2	19	10.53	5.00	✓ NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS		EP068	2	19	10.53	5.00	✓ NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)		EP066	2	19	10.53	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	38	5.26	5.00	✓ NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX		EP080	2	40	5.00	5.00	✓ NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Exchangeable Cations		ED007	1	1	100.00	5.00	✓ NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils		ED006	1	3	33.33	5.00	✓ NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)		EP075(SIM)	2	19	10.53	5.00	✓ NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS		EP068	2	19	10.53	5.00	✓ NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)		EP066	2	19	10.53	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	38	5.26	5.00	✓ NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX		EP080	2	40	5.00	5.00	✓ NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (SIM)		EP075(SIM)	2	19	10.53	5.00	✓ NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS		EP068	2	19	10.53	5.00	✓ NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)		EP066	2	19	10.53	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

**Matrix: SOIL**

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

Quality Control Sample Type	Analytical Methods	Method	Count		Rate (%)		Quality Control Specification
			QC	Regular	Actual	Expected	
<b>Matrix Spikes (MS) - Continued</b>							
Total Metals by ICP-AES		EG005T	2	40	5.00	5.00	✓ NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction		EP071	2	38	5.26	5.00	✓ NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX		EP080	2	40	5.00	5.00	✓ NEPM 2013 B3 & ALS QC Standard

## Brief Method Summaries

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

<b>Analytical Methods</b>	<b>Method</b>	<b>Matrix</b>	<b>Method Descriptions</b>
pH (1:5)	EA002	SOIL	In house: Referenced to Rayment and Lyons 4A1 and APHA 4500H+. pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3)
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Exchangeable Cations on Alkaline Soils	ED006	SOIL	In house: Referenced to Soil Survey Test Method C5. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with alcoholic ammonium chloride at pH 8.5. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil.
Exchangeable Cations	ED007	SOIL	In house: Referenced to Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
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 (SnCl <sub>2</sub> ) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> 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.

<b>Preparation Methods</b>	<b>Method</b>	<b>Matrix</b>	<b>Method Descriptions</b>
Exchangeable Cations Preparation Method (Alkaline Soils)	ED006PR	SOIL	In house: Referenced to Rayment and Lyons 2011 method 15C1.

<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Higginson (1992) method 15A1. A 1M NH4Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (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.
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.





**CHAIN OF  
CUSTODY**

**STADE LORRAINE** 21 Bunner  
Rouen. Poste: 84. SA. BOSS  
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Site: [www.stade-lorraine.com](http://www.stade-lorraine.com)

**NEWCASTLE**, N. B.  
BEGAN 1842, BROOKLYN,  
PROBABLY THE OLDEST OF THE  
TOWNS IN THE STATE, AND IS  
THE SEAT OF A COASTAL DISTRICT  
EXTENDING FROM THE BAY  
TO THE MOUNTAINS.

CLIENT: Densafe Environmental Solutions Pty Ltd		CUSTODY		CHAIN OF CUSTODY		
OFFICE: 1/185 Berkeley Rd Ultanberra NSW 2500		ALS Laboratory		ALS Laboratory		
PROJECT NUMBER: 20-8613		AL QUOTE NO.: WO-006-17		PROJECT NUMBER: 20-8613		
PROJECT MANAGER: Fergus Cowan		CONTACT PH: 1300 042 562		PROJECT MANAGER: Fergus Cowan		
SAMPLER: Fergus Cowan		MOBILE: 0447954002		SAMPLER: Fergus Cowan		
QC emailed to A.L.S.1 YES / NO		EDD FORMAT (or default):		QC emailed to A.L.S.1 YES / NO		
Email Reports to (will default to PM if no other addressees are listed): info@densafe.com.au				Email Reports to (will default to PM if no other addressees are listed): info@densafe.com.au		
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:						
<p><b>TURNAROUND REQUIREMENTS:</b></p> <p>[Standard TAT may be longer for some tests e.g. Ultra Trace Organics]</p> <p>- Non Standard or urgent TAT [List due date]:</p>						
<p><b>RELINQUISHED BY:</b></p> <p>Fergus Cowan</p> <p>DATE/TIME: 12/02/2017</p>						
<p><b>RECEIVED BY:</b></p> <p>RELINQUISHED BY:</p> <p>DATE/TIME: 12/02/2017</p>						
<p><b>ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)</b></p> <p>Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filter filtered bottle required).</p>						
<p><b>CONTAINER DISTRIBUTION</b></p> <p>LAB ID      SAMPLE ID      DATE / TIME      MATRIX      TYPE &amp; PRESERVATIVE (refer to codes below)      TOTAL CONTAINERS      CO-SEQUENCE NUMBER (Grade)</p>						
13	20-8613 /TP10 - 0.3m	2/12/2018	S	Esky / Glass Jar	1	X
14	TP10 - 2.0m	2/12/2018	S	Esky / Glass Jar	1	X
15	TP11 - 0.5m	2/12/2018	S	Esky / Glass Jar	1	X
16	TP11 - 1.5m	2/12/2018	S	Esky / Glass Jar	1	X
17	TP12 - 0.3m	2/12/2018	S	Esky / Glass Jar	1	X
18	TP13 - 0.4m	2/12/2018	S	Esky / Glass Jar	1	X
19	TP13 - 1.3m	2/12/2018	S	Esky / Glass Jar	1	X
20	TP14 - 0.5m	2/12/2018	S	Esky / Glass Jar	1	X
21	TP15 - 0.2m	2/12/2018	S	Esky / Glass Jar	1	X
22	TP15 - 1.0m	2/12/2018	S	Esky / Glass Jar	1	X
23	TP16 - 0.3m	2/12/2018	S	Esky / Glass Jar	1	X
24	TP16 - 1.1m	2/12/2018	S	Esky / Glass Jar	1	X
<p><b>COMMENTS/TESTS/TESTING</b></p> <p>Comments on likely contamination levels, dilutions, or samples requiring specific QC analysis etc.</p>						
<p><b>ADDITIONAL INFORMATION</b></p>						



## Certificate of Analysis

**Clearsafe**  
**Unit 1 / 185 Berkeley Road**  
**Unanderra**  
**NSW 2526**



NATA Accredited  
 Accreditation Number 1261  
 Site Number 18217

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

**Attention:** Shaun Muir

**Report** 584599-S  
**Project name** SOIL ANALYSIS  
**Project ID** 20-8613  
**Received Date** Feb 13, 2018

<b>Client Sample ID</b>			<b>D2</b>
<b>Sample Matrix</b>			<b>Soil</b>
<b>Eurofins   mgt Sample No.</b>			<b>S18-Fe14368</b>
<b>Date Sampled</b>			<b>Feb 12, 2018</b>
Test/Reference	LOR	Unit	
<b>Heavy Metals</b>			
Arsenic	2	mg/kg	< 2
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	< 5
Copper	5	mg/kg	< 5
Lead	5	mg/kg	12
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	< 5
<b>% Moisture</b>	1	%	13

### Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Metals M8 - Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS	Sydney	Feb 14, 2018	28 Day
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Feb 13, 2018	14 Day

<b>Company Name:</b>	Clearsafe	<b>Order No.:</b>		<b>Received:</b>	Feb 13, 2018 5:22 PM
<b>Address:</b>	Unit 1 / 185 Berkeley Road Unanderra NSW 2526	<b>Report #:</b>	584599	<b>Due:</b>	Feb 20, 2018
<b>Project Name:</b>	SOIL ANALYSIS	<b>Phone:</b>	0447 494 101	<b>Priority:</b>	5 Day
<b>Project ID:</b>	20-8613	<b>Fax:</b>		<b>Contact Name:</b>	Shaun Muir
<b>Eurofins   mgt Analytical Services Manager : Nibha Vaidya</b>					

### Sample Detail

		Metals MB	Moisture Set
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>			
<b>Sydney Laboratory - NATA Site # 18217</b>		X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>			
<b>Perth Laboratory - NATA Site # 23736</b>			
<b>External Laboratory</b>			

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	D2	Feb 12, 2018		Soil	S18-Fe14368	X	X
<b>Test Counts</b>						1	1

## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

### Holding Times

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

### Terms

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	Quality Systems Manual ver 5.1 US Department of Defense
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
<b>TEQ</b>	Toxic Equivalency Quotient

### QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

### QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

**Quality Control Results**

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Method Blank</b>								
<b>Heavy Metals</b>								
Arsenic		mg/kg	< 2			2	Pass	
Cadmium		mg/kg	< 0.4			0.4	Pass	
Chromium		mg/kg	< 5			5	Pass	
Copper		mg/kg	< 5			5	Pass	
Lead		mg/kg	< 5			5	Pass	
Mercury		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 5			5	Pass	
Zinc		mg/kg	< 5			5	Pass	
<b>LCS - % Recovery</b>								
<b>Heavy Metals</b>								
Arsenic		%	96			70-130	Pass	
Cadmium		%	98			70-130	Pass	
Chromium		%	102			70-130	Pass	
Copper		%	103			70-130	Pass	
Lead		%	101			70-130	Pass	
Mercury		%	98			70-130	Pass	
Nickel		%	98			70-130	Pass	
Zinc		%	103			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>								
Arsenic	S18-Fe14376	NCP	%	92		70-130	Pass	
Cadmium	S18-Fe14376	NCP	%	97		70-130	Pass	
Chromium	S18-Fe14376	NCP	%	87		70-130	Pass	
Copper	S18-Fe14376	NCP	%	79		70-130	Pass	
Lead	S18-Fe14376	NCP	%	93		70-130	Pass	
Mercury	S18-Fe14376	NCP	%	93		70-130	Pass	
Nickel	S18-Fe14376	NCP	%	77		70-130	Pass	
Zinc	S18-Fe14376	NCP	%	74		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>								
<b>Heavy Metals</b>								
Arsenic	S18-Fe17380	NCP	mg/kg	5.6	5.4	4.0	30%	Pass
Cadmium	S18-Fe16109	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-Fe16109	NCP	mg/kg	20	18	11	30%	Pass
Copper	S18-Fe16109	NCP	mg/kg	39	40	2.0	30%	Pass
Lead	S18-Fe17380	NCP	mg/kg	150	130	13	30%	Pass
Mercury	S18-Fe16109	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-Fe16109	NCP	mg/kg	5.0	< 5	8.0	30%	Pass
Zinc	S18-Fe17380	NCP	mg/kg	70	68	3.0	30%	Pass
<b>Duplicate</b>								
				Result 1	Result 2	RPD		
% Moisture	S18-Fe14368	CP	%	13	14	3.0	30%	Pass

## Comments

## **Sample Integrity**

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

## Comments

## **Authorised By**

Nibha Vaidya Analytical Services Manager



**Glenn Jackson**  
**National Operations Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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



## CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory  
Unit F3 Bld.F 18 Mars Rd, Lane Cove West NSW 2066  
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory  
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Perth Laboratory  
Unit 2, 91 Leach Highway, Kewdale WA 6105  
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory  
2 Kingston Town Close, Oakleigh VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Clearsafe			Project No	20-8613			Project Manager	Shawn Muir			Relinquished by	<i>SL</i>					
Address	1/185 Berkeley Rd Chandlers			Project Name				Report Format				Email for Results	info@clearsafe.com.au					
Contact Name	Shawn Muir			Phone No	0447494011			Containers				Turn Around Requirements						
Special Direction				Purchase Order				1l Plastic	2.5ml Plastic	10ml Plastic	200ml Plastic Glass	300ml Glass	125ml Amber Glass	AP	<input type="checkbox"/> Overnight (9am)*	<input type="checkbox"/> 1 Day*	<input type="checkbox"/> 2 Day	
Quote ID No				Date	12/2			Matrix				Other				<input type="checkbox"/> 3 Day*	<input checked="" type="checkbox"/> 5 Day	<input type="checkbox"/> Other ( )
No	Client Sample ID	D	2		S	X		Total Counts	1									
Method of Shipment	<input type="checkbox"/> Courier (#)		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name	Signature			Date	/ /	Time	—	—	—		
Laboratory Use Only	Received By	<i>R Phillips</i>		SYD		BNE   MEL   PER   ADL   NEW   DAR	Signature	<i>Ho</i>			Date	13/2/18	Time	5:22pm	Temperature	23.3°C		
	Received By			SYD		BNE   MEL   PER   ADL   NEW   DAR	Signature				Date	/ /	Time	—	Report No	584599		