

STAGE 1 PRELIMINARY SITE INVESTIGATION

90 GINDURRA RD
SOMERSBY NSW 2250

Client:
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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.

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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.

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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4 Proposed Development

The Kariong Sand and Soil Supplies development will involve the construction and operation of a best practice recycling and landscape supplies facility that will enable the receipt of up to 200,000 tonnes of sand, soil and building materials each year. The project will transform the site into a state-of-the-art facility turning sand, soil and building materials into 100% recycled building and landscaping supplies. The facility aims to produce a number of building and landscape products, providing them for re-use mainly in the Central Coast region.

The proposed development will seek to expand the current facility into a best-practice recycling plant that will assist the Central Coast in achieving the NSW Government's target of an 80% recycling rate for construction and demolition waste by 2021.

The project will involve the development of a largely undeveloped industrial site, to enable the facility to be used to receive, process and recycle construction and demolition waste, as well as supply building and landscape supplies for local projects. All waste materials will be received and processed indoors, to minimise impacts on the environment and neighbours.

The front part that will be visible from Gindurra Rd will be the landscaping supply operations, including landscaping along the road frontage and landscape storage bays behind the set back area. A fully enclosed warehouse where sorting and recycling operations will be conducted will be visible from the front of the site. Along the eastern boundary, a noise barrier and a native landscape buffer will be planted to avoid noise impacts on nearby rural dwellings, and to provide an aesthetically pleasing interface between the edge of the Somersby Industrial Estate and nearby rural zone lots and dwellings.

Waste processing and recycling operations for selected materials, including crushing and mulching will be done on the southern section of the site, where processing will also be done in dedicated buildings to avoid any impacts on nearby land uses. These operations are to be conducted at maximum distance from any sensitive receptors. The southern section of the site will be retained as bushland to provide a natural buffer between the development and other residential areas more than a kilometre away from the southern boundary of the site.

Advanced water capture, rainwater harvesting, water treatment and dust suppression systems will be integrated in all buildings and outdoor areas to prevent dust being formed. The site will also include an advanced membrane filtration plant to enable much of the water captured from the site to be fully reused across the site for operational uses. The site will also include its own weather monitoring station, high volume air samplers for continuous air quality and dust analysis, and continuous noise loggers to confirm compliance with consent and licence conditions. The site will be fully serviced with fire suppression systems.

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 107,600m². The proposed development area (as advised by the client) encompasses the northern section of the site only covering an area of approximately 39,000m².



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

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/permitted 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.

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	To gain a preliminary understanding of the contamination status of the site as part of the Preliminary Site Investigation prior to development.
Step 2 Identify the decision	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.
Step 3 Identify information inputs	- 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. - Employment of NATA accredited Laboratories utilising NATA approved analysis methods.
Step 4 Define the study boundaries	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.
Step 5 Develop the analytical approach	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.
Step 6 Specify acceptable limits on decision error	Generally in accordance with NEPM (2013) and other relevant guidance material

	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.
Step 7 Develop the plan for data acquisition	- Judgemental / Targeted and systematic sampling within existing site constraints will be utilised to assure representative sampling - Based on field and laboratory QA/QC procedures the following DQO will need to be achieved: - Analysis within acceptable holding times - Field QA/QC within RPD acceptable ranges (+/-30% inorganic and +/-50% organics) - Accuracy of laboratory spiked samples (in general between 70 and 130%) - 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.

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

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 receipt 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) ¹	HSL D (Direct Contact) ⁴	EIL (Commercial and industrial)	ESL in soil (Commercial and Industrial)
INORGANICS					
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	
ORGANICS	-	-	-	-	-
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	-	-	-	-
PETROLEUM HYDROCARBON COMPONENTS					
F1 ²	-	NL	26,000	-	215
F2 ³	-	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.

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

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

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.

15 Closure and Contact Information

For any queries regarding this Environmental Assessment please contact Clearsafe on 1300 042 962 or info@clearsafe.com.au.

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



Fergus Cowan
Project Consultant



Michael Fernandez
Project Manager

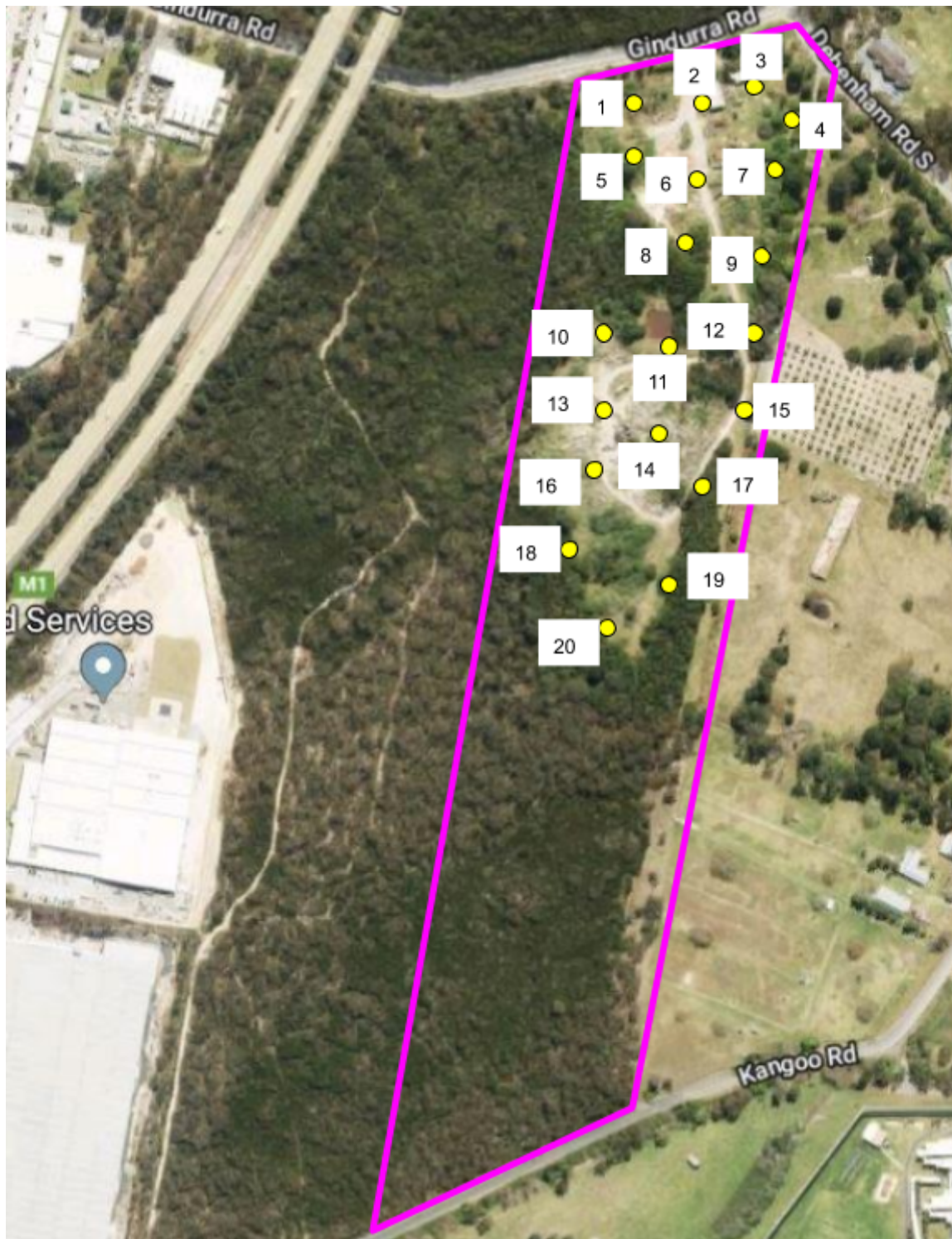
APPENDIX A

SITE PLANS



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)



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

Figure 2: Site and approximate test pit locations

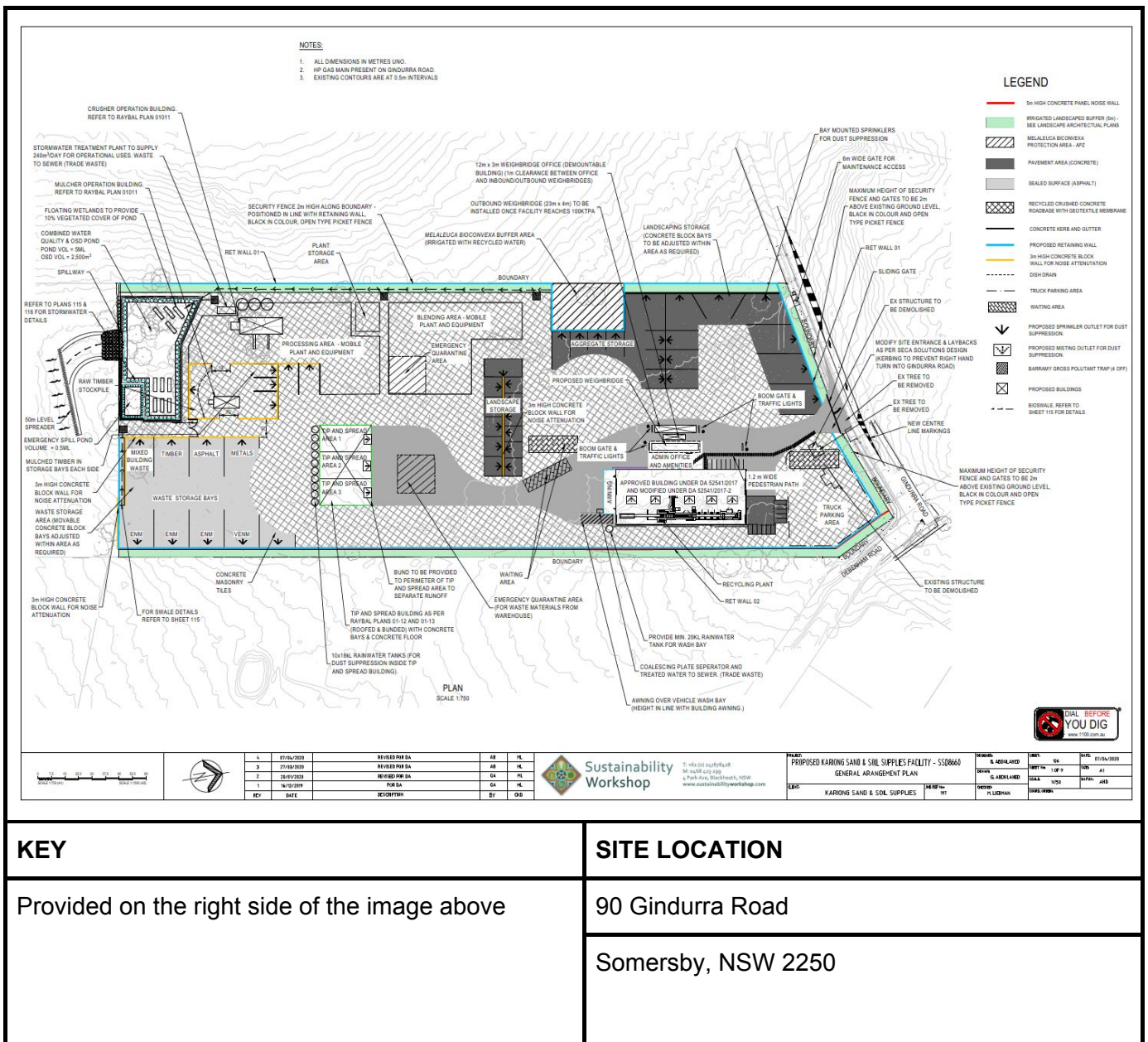
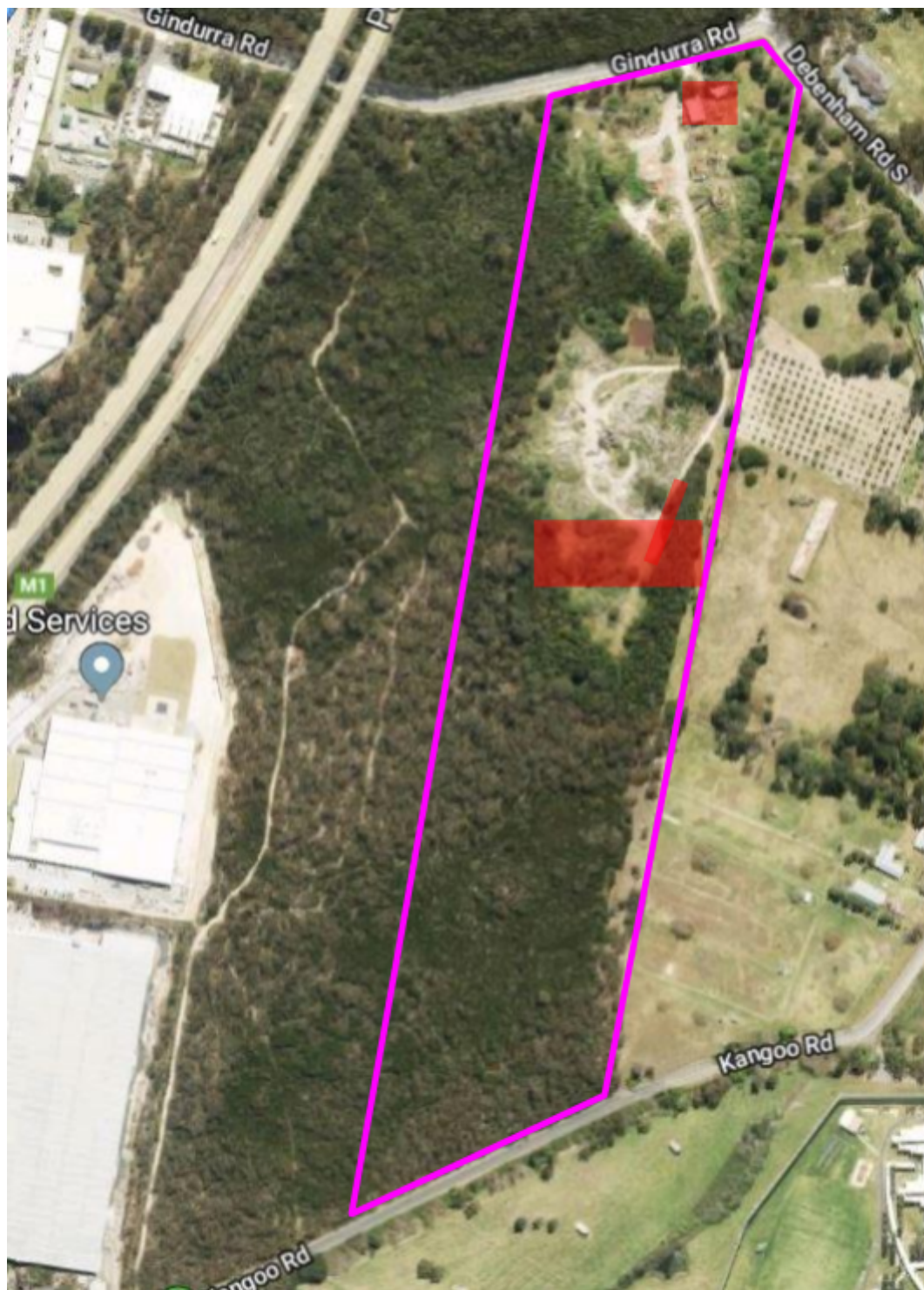


Figure 3: General Arrangement Plan - Revision 4 (Map provided by Jackson Environmental on 24/6/2020)



KEY	SITE LOCATION
■ Approximate location of asbestos impacted areas	90 Gindurra Road
— 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



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/permitted 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.

APPENDIX D

LABORATORY REPORTS

Certificate of Analysis



Clearsafe Environmental Solutions Pty Ltd
1/185 Berkeley Road, Unanderra NSW 2526
info@clearsafe.com.au
1300 042 962

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

Client Contact: Mark Jackson

Sampled By: Fergus Cowan

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

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

*** 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.

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

*** 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

20-8613-01-ID

**NATA Accredited Laboratory No. 18542**

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Certificate of Analysis



Clearsafe Environmental Solutions Pty Ltd
1/185 Berkeley Road, Unanderra NSW 2526
info@clearsafe.com.au
1300 042 962

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 Name: Jackson Environmental and Planning Pty Ltd

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

Client Contact: Mark Jackson

Sampled By: Fergus Cowan

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 ¹
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 ¹
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 ⁶

*** 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

20-8613-02-ID



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 : **EW1800592**
Client : **CLEARSAFE ENVIRONMENTAL SOLUTIONS**
Contact : **WOLLONGONG**
Address : **1/185 Berkely Rd**
UNANDERRA NSW 2526

Telephone : **+61 2 1300 042 962**
Project : **20-8613**
Order number : **----**
C-O-C number : **----**
Sampler : **Fergus Cowan**
Site : **----**
Quote number : **EN/222/17**
No. of samples received : **30**
No. of samples analysed : **30**

Page : **1 of 27**
Laboratory : **Environmental Division NSW South Coast**
Contact : **Aneta Prosaroski**
Address : **1/19 Ralph Black Dr, North Wollongong 2500**
4/13 Geary Pl, North Nowra 2541
Australia NSW
Telephone : **02 4225 3125**
Date Samples Received : **12-Feb-2018 15:07**
Date Analysis Commenced : **13-Feb-2018**
Issue Date : **28-Feb-2018 08:50**



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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dian Dao		Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	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 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: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- 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⁺ + Al³⁺).



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			
Compound	CAS Number	LOR	Unit	EW1800592-001		EW1800592-002		EW1800592-003		EW1800592-004		EW1800592-005	
				Result		Result		Result		Result		Result	
EA002 : pH (Soils)													
pH Value	----	0.1	pH Unit	8.3		----		----		----		----	
EA055: Moisture Content													
Moisture Content	----	1.0	%	8.7		25.8		9.8		15.2		12.0	
ED006: Exchangeable Cations on Alkaline Soils													
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		----	
EG005T: Total Metals by ICP-AES													
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	
EG035T: Total Recoverable Mercury by FIMS													
Mercury	7439-97-6	0.1	mg/kg	0.1		<0.1		<0.1		<0.1		<0.1	
EP066: Polychlorinated Biphenyls (PCB)													
Total Polychlorinated biphenyls	----	0.1	mg/kg	----		----		<0.1		----		----	
EP068A: Organochlorine Pesticides (OC)													
alpha-BHC	319-84-6	0.05	mg/kg	----		----		<0.05		----		----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----		----		<0.05		----		----	
beta-BHC	319-85-7	0.05	mg/kg	----		----		<0.05		----		----	
gamma-BHC	58-89-9	0.05	mg/kg	----		----		<0.05		----		----	
delta-BHC	319-86-8	0.05	mg/kg	----		----		<0.05		----		----	
Heptachlor	76-44-8	0.05	mg/kg	----		----		<0.05		----		----	
Aldrin	309-00-2	0.05	mg/kg	----		----		<0.05		----		----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----		----		<0.05		----		----	
^ Total Chlordane (sum)	----	0.05	mg/kg	----		----		<0.05		----		----	
trans-Chlordane	5103-74-2	0.05	mg/kg	----		----		<0.05		----		----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----		----		<0.05		----		----	



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
EP068A: Organochlorine Pesticides (OC) - Continued								
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg	----	----	<0.05	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg	----	----	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	<0.05	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	<0.05	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	<0.05	----	----
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg	----	----	<0.2	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	<0.05	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	----	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	----	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	----	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	----	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	<0.05	----	----
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
EP068B: Organophosphorus Pesticides (OP) - Continued								
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	----	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	----	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	----	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	----	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	----	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	----	----	<0.5	----	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	----	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	----	----	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	<0.5	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	----	----	<0.5	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	0.6	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	1.2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100



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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	95.0	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	----	89.0	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	----	96.9	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
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	----	----
EP075(SIM)T: PAH Surrogates								
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	----	----
EP080S: TPH(V)/BTEX Surrogates								
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

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	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	EW1800592-006	EW1800592-007	EW1800592-008	EW1800592-009	EW1800592-010
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	6.3	----	----
EA055: Moisture Content								
Moisture Content	----	1.0	%	8.1	7.8	----	11.9	5.8
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	----	----	20.0	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	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
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	<0.1	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
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	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	EW1800592-006	EW1800592-007	EW1800592-008	EW1800592-009	EW1800592-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
4,4'-DDD	72-54-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
4,4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	<0.2	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg	----	<0.2	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Ethion	563-12-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	----

Sub-Matrix: **SOIL** Client sample ID
 (Matrix: **SOIL**)

EP080: BTEXN



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	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	EW1800592-006	EW1800592-007	EW1800592-008	EW1800592-009	EW1800592-010
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	118	82.0	92.0	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	88.9	81.0	93.3	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	108	102	114	----
EP075(SIM)S: Phenolic Compound Surrogates								
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	----
EP075(SIM)T: PAH Surrogates								
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	----
EP080S: TPH(V)/BTEX Surrogates								
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
EA055: Moisture Content								
Moisture Content	----	1.0	%	16.1	22.2	21.0	19.1	6.5
ED006: Exchangeable Cations on Alkaline Soils								
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	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	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
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	<0.05	----	----
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
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
EP068A: Organochlorine Pesticides (OC) - Continued								
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	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	----	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	----	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	----	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	<0.5	----	----



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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	<0.5	----	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	<0.5	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	<0.5	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	<0.5	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	0.6	0.6	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	1.2	1.2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50



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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	91.0	95.0	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	83.8	89.2	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	97.3	109	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
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	----	----
EP075(SIM)T: PAH Surrogates								
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	----	----
EP080S: TPH(V)/BTEX Surrogates								
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
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	7.8	----	----	----
EA055: Moisture Content								
Moisture Content	----	1.0	%	15.1	20.4	14.4	9.7	9.3
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	12	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
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	<0.05
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
EP068A: Organochlorine Pesticides (OC) - Continued								
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
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	<0.5



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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	----	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	----	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



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
EP080: BTEXN - Continued								
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	115	----	----	----	112
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	101	----	----	----	90.5
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	111	----	----	----	108
EP075(SIM)S: Phenolic Compound Surrogates								
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
EP075(SIM)T: PAH Surrogates								
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
EP080S: TPH(V)/BTEX Surrogates								
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
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
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	4.8	----	----	7.5
EA055: Moisture Content								
Moisture Content	----	1.0	%	23.0	12.9	11.0	28.6	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	----	----	----	----	4.7
ED006: Exchangeable Cations on Alkaline Soils								
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	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	8	2	14	15	9
Copper	7440-50-8	5	mg/kg	<5	<5	12	12	24
Lead	7439-92-1	5	mg/kg	<5	8	28	44	107
Nickel	7440-02-0	2	mg/kg	<2	<2	9	4	4
Zinc	7440-66-6	5	mg/kg	12	<5	81	104	123
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	----	----	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	----	----	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	----	----	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	----	----	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	----	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	----	----	<0.05



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
EP068A: Organochlorine Pesticides (OC) - Continued								
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	----	----	----	----	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	----	----	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg	----	----	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	----	----	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	----	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	----	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	----	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	----	----	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	----	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg	----	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	----	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg	----	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	----	<0.05
Prothiofos	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
EP068B: Organophosphorus Pesticides (OP) - Continued								
Ethion	563-12-2	0.05	mg/kg	----	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	----	----	----	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	----	----	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	----	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	----	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	----	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	----	----	----	----	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	----	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	----	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10



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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	----	116
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	----	----	----	121
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	----	----	----	101
EP075(SIM)S: Phenolic Compound Surrogates								
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
EP075(SIM)T: PAH Surrogates								
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
EP080S: TPH(V)/BTEX Surrogates								
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
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	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	5.6	----	----	----
EA055: Moisture Content								
Moisture Content	----	1.0	%	27.6	4.7	23.0	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	----	----	----	24.3	18.3
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	----	----	----	0.5	----
Exchangeable Magnesium	----	0.1	meq/100g	----	----	----	0.2	----
Exchangeable Potassium	----	0.1	meq/100g	----	----	----	<0.1	----
Exchangeable Sodium	----	0.1	meq/100g	----	----	----	<0.1	----
Cation Exchange Capacity	----	0.1	meq/100g	----	----	----	0.8	----
Exchangeable Sodium Percent	----	0.1	%	----	----	----	4.8	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	13	7	22	7	2
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg	8	14	<5	<5	9
Nickel	7440-02-0	2	mg/kg	<2	<2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg	7	58	<5	<5	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	----	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	----	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	----	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	----	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	----	<0.05	----



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
EP068A: Organochlorine Pesticides (OC) - Continued								
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	----	----	----	<0.05	----
4,4'-DDE	72-55-9	0.05	mg/kg	----	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg	----	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	----	<0.05	----
4,4'-DDD	72-54-8	0.05	mg/kg	----	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	<0.05	----
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	----	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	<0.05	----
Prothiofos	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
EP068B: Organophosphorus Pesticides (OP) - Continued								
Ethion	563-12-2	0.05	mg/kg	----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	----	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	----	----	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	----	----	----	<0.5	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	----	----	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	<0.5	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	----	----	----	<0.5	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	----	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	1.2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	----



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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
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	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	119	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	----	----	115	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	----	----	110	----
EP075(SIM)S: Phenolic Compound Surrogates								
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	----
EP075(SIM)T: PAH Surrogates								
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	----
EP080S: TPH(V)/BTEX Surrogates								
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
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

QUALITY CONTROL REPORT

Work Order	: EW1800592	Page	: 1 of 19
Client	: CLEARSafe ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division NSW South Coast
Contact	: WOLLONGONG	Contact	: Aneta Prosaroski
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		



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

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

This Quality Control Report contains the following information:

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
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**

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 (%)
EA002 : pH (Soils) (QC Lot: 1430454)									
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%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1433711)									
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%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1433712)									
EW1800592-023	20-8613 /TP16 -0.3m	EA055: Moisture Content	----	1	%	11.0	11.2	1.36	0% - 50%
ED006: Exchangeable Cations on Alkaline Soils (QC Lot: 1449888)									
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
ED007: Exchangeable Cations (QC Lot: 1443688)									
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
EG005T: Total Metals by ICP-AES (QC Lot: 1440307)									
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 (%)
EG005T: Total Metals by ICP-AES (QC Lot: 1440307) - continued									
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%
		EG005T: Total Metals by ICP-AES (QC Lot: 1440308)							
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
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1440306)									
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
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1440309)									
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
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 1429127)									
EW1800592-003	20-8613 /TP2 -0.3m	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 1429138)									
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
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1429129)									
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 (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1429129) - continued									
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
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1429137)									
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 (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1429137) - continued									
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
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1429129)									
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: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1429129) - continued									
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
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1429137)									
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: Chlorfenvinphos	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
EP068: Demeton-S-methyl	919-86-8			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Dimethoate	60-51-5			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Diazinon	333-41-5			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Chlorpyrifos-methyl	5598-13-0			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Malathion	121-75-5			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Fenthion	55-38-9			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Chlorpyrifos	2921-88-2			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Pirimphos-ethyl	23505-41-1			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Chlorfenvinphos	470-90-6			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Bromophos-ethyl	4824-78-6			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Fenamiphos	22224-92-6			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Prothiofos	34643-46-4			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Ethion	563-12-2			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Carbophenothion	786-19-6			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Azinphos Methyl	86-50-0			0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Monocrotophos	6923-22-4			0.2	mg/kg	<0.2	<0.2	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1429137) - continued									
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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1429128)									
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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1429136)									
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 (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1429136) - continued									
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): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429106)							
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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429126)									
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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429135)									
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 (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429135) - continued									
EW1800592-029	20-8613 /TP20 -0.3m	EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1429179)									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429106)									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429126)									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429135)									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1429179)									
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
EP080: BTEXN (QC Lot: 1429106)									
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	108-38-3 106-42-3	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
EW1800592-011	20-8613 /TP8 -0.4m	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

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 Work Order : EW1800592
 Client : CLEARSAFE ENVIRONMENTAL SOLUTIONS
 Project : 20-8613



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 1429179)									
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	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
ES1804598-003	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
		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	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

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.

Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) LowHigh		
Result					
<0.2	0.6284 meq/100g	130	70	130	
<0.2	2.0863 meq/100g	95.3	70	130	
<0.2	----	----	----	----	
<0.2	4.2683 meq/100g	97.6	70	130	
<0.2	6.9983 meq/100g	99.7	70	130	
<0.1	1 meq/100g	102	76	120	
<0.1	1.67 meq/100g	100	75	115	
<0.1	0.51 meq/100g	96.1	80	120	
<0.1	0.87 meq/100g	100	80	120	
<0.1	----	----	----	----	
<0.1	----	----	----	----	
<5	21.7 mg/kg	102	86	126	
<1	4.64 mg/kg	96.8	83	113	
<2	43.9 mg/kg	94.6	76	128	
<5	32 mg/kg	98.6	86	120	
<5	40 mg/kg	94.3	80	114	
<2	55 mg/kg	102	87	123	
<5	60.8 mg/kg	104	80	122	
<5	21.7 mg/kg	102	86	126	
<1	4.64 mg/kg	97.6	83	113	
<2	43.9 mg/kg	94.5	76	128	
<5	32 mg/kg	100	86	120	
<5	40 mg/kg	95.5	80	114	
<2	55 mg/kg	102	87	123	
<5	60.8 mg/kg	106	80	122	
<0.1	2.57 mg/kg	79.6	70	105	
<0.1	2.57 mg/kg	78.3	70	105	



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1429127) - continued								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	98.0	62	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1429138)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	106	62	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 1429129)								
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
EP068A: Organochlorine Pesticides (OC) (QCLot: 1429137)								
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**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP068A: Organochlorine Pesticides (OC) (QCLot: 1429137) - continued								
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
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1429129)								
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: Chlorpyrifos-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: Chlorfenvinphos	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
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1429137)								
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: Chlorpyrifos-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**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1429137) - continued								
EP068: Chlorpyrifos	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: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.8	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	102	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1429128)								
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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1429136)								
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**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1429136) - continued								
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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1429106)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	75.9	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1429126)								
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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1429135)								
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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1429179)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	88.8	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1429106)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	77.4	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1429126)								
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1429135)								
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1429179)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	86.9	68	128
EP080: BTEXN (QCLot: 1429106)								
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 (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP080: BTEXN (QCLot: 1429106) - continued								
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
EP080: BTEXN (QCLot: 1429179)								
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	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1440307)							
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
EG005T: Total Metals by ICP-AES (QCLot: 1440308)							
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
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1440306)							
EB1803683-054	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	97.7	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1440309)							
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	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1429127)							
EW1800592-003	20-8613 /TP2 -0.3m	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	87.0	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1429138)							
ES1804525-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	114	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1429129)							
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
EP068A: Organochlorine Pesticides (OC) (QCLot: 1429137)							
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
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1429129)							
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
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1429137)							
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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1429128)							
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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1429136)							
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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1429106)							



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1429106) - continued							
EW1800592-001	20-8613 /TP1 -0.3m	EP080: C6 - C9 Fraction	----	32.5 mg/kg	76.6	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1429126)							
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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1429135)							
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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1429179)							
ES1804525-007	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	109	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1429106)							
EW1800592-001	20-8613 /TP1 -0.3m	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	77.5	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1429126)							
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1429135)							
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1429179)							
ES1804525-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	113	70	130
EP080: BTEXN (QCLot: 1429106)							
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	2.5 mg/kg	84.0	70	130
			106-42-3				
		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
EP080: BTEXN (QCLot: 1429179)							
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

Laboratory sample IDClient sample IDMethod: CompoundCAS Number				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
EP080: BTEXN (QCLot: 1429179) - continued							
ES1804525-007	Anonymous	EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	97.3	70	130
			106-42-3				
		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		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002 : pH (Soils)								
Soil Glass Jar - Unpreserved (EA002)		12-Feb-2018	13-Feb-2018	19-Feb-2018	✔	13-Feb-2018	13-Feb-2018	✔
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								
EA055: Moisture Content								
Soil Glass Jar - Unpreserved (EA055)		12-Feb-2018	----	----	----	14-Feb-2018	26-Feb-2018	✔
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								
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)		12-Feb-2018	----	----	----	14-Feb-2018	26-Feb-2018	✔
20-8613 - /TP5 -2.7m,								
20-8613 - /TP20 -0.3m,								
20-8613 - /TP17 -0.2m,								
20-8613 - /D1								
ED006: Exchangeable Cations on Alkaline Soils								
Soil Glass Jar - Unpreserved (ED006)		12-Feb-2018	23-Feb-2018	12-Mar-2018	✔	23-Feb-2018	12-Mar-2018	✔
20-8613 - /TP3 -0.5m,								
20-8613 - /TP15 -0.20m								
ED007: Exchangeable Cations								
Soil Glass Jar - Unpreserved (ED007)		12-Feb-2018	20-Feb-2018	12-Mar-2018	✔	20-Feb-2018	12-Mar-2018	✔
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
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
20-8613 - /TP1 -0.3m,	20-8613 - /TP1 -0.65m,	12-Feb-2018	17-Feb-2018	11-Aug-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							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
20-8613 - /TP1 -0.3m,	20-8613 - /TP1 -0.65m,	12-Feb-2018	17-Feb-2018	12-Mar-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							
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
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							
Soil Glass Jar - Unpreserved (EP066)								
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	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068) 20-8613 - /TP2 -0.3m, 20-8613 - /TP5 -2.7m, 20-8613 - /TP9 -0.4m, 20-8613 - /TP11 -1.5m,	20-8613 - /TP5 -0.5m, 20-8613 - /TP6 -0.2m, 20-8613 - /TP10 -0.3m, 20-8613 - /TP14 0.5m	12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Mar-2018	✓
Soil Glass Jar - Unpreserved (EP068) 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	✓
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068) 20-8613 - /TP2 -0.3m, 20-8613 - /TP5 -2.7m, 20-8613 - /TP9 -0.4m, 20-8613 - /TP11 -1.5m,	20-8613 - /TP5 -0.5m, 20-8613 - /TP6 -0.2m, 20-8613 - /TP10 -0.3m, 20-8613 - /TP14 0.5m	12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Mar-2018	✓
Soil Glass Jar - Unpreserved (EP068) 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	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) 20-8613 - /TP2 -0.3m, 20-8613 - /TP5 -2.7m, 20-8613 - /TP9 -0.4m, 20-8613 - /TP11 -1.5m, 20-8613 - /TP17 -0.2m,	20-8613 - /TP5 -0.5m, 20-8613 - /TP6 -0.2m, 20-8613 - /TP10 -0.3m, 20-8613 - /TP14 0.5m, 20-8613 - /TP20 -0.3m	12-Feb-2018	14-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Mar-2018	✓



Matrix: **SOIL**

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

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080)		12-Feb-2018	13-Feb-2018	26-Feb-2018	✔	14-Feb-2018	26-Feb-2018	✔
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,	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							
Soil Glass Jar - Unpreserved (EP080)		12-Feb-2018	13-Feb-2018	26-Feb-2018	✔	15-Feb-2018	26-Feb-2018	✔
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								
Soil Glass Jar - Unpreserved (EP071)		12-Feb-2018	14-Feb-2018	26-Feb-2018	✔	15-Feb-2018	26-Mar-2018	✔
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,	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								



Matrix: **SOIL**

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

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP080)		12-Feb-2018	13-Feb-2018	26-Feb-2018	✔	14-Feb-2018	26-Feb-2018	✔
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,	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							
Soil Glass Jar - Unpreserved (EP080)		12-Feb-2018	13-Feb-2018	26-Feb-2018	✔	15-Feb-2018	26-Feb-2018	✔
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								
Soil Glass Jar - Unpreserved (EP071)		12-Feb-2018	14-Feb-2018	26-Feb-2018	✔	15-Feb-2018	26-Mar-2018	✔
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,	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								

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

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)		12-Feb-2018	13-Feb-2018	26-Feb-2018	✓	14-Feb-2018	26-Feb-2018	✓
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,	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							
Soil Glass Jar - Unpreserved (EP080)		12-Feb-2018	13-Feb-2018	26-Feb-2018	✓	15-Feb-2018	26-Feb-2018	✓
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								



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
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
Laboratory Control Samples (LCS)							
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
Method Blanks (MB)							
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
Matrix Spikes (MS)							
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

Page : 9 of 11
 Work Order : EW1800592
 Client : CLEARSAFE ENVIRONMENTAL SOLUTIONS
 Project : 20-8613



Matrix: **SOIL** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Matrix Spikes (MS) - Continued							
Total Metals by ICP-AES	EG005T	2	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.

Analytical Methods	Method	Matrix	Method Descriptions
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 ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method (Alkaline Soils)	ED006PR	SOIL	In house: Referenced to Rayment and Lyons 2011 method 15C1.



Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Higginson (1992) method 15A1. A 1M NH ₄ Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (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, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

[illegible]

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

Client Sample ID			D2
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-Fe14368
Date Sampled			Feb 12, 2018
Test/Reference	LOR	Unit	
Heavy Metals			
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
% Moisture	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	Sydney	Feb 14, 2018	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
% Moisture	Sydney	Feb 13, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: Clearsafe
Address: Unit 1 / 185 Berkeley Road
Unanderra
NSW 2526
Project Name: SOIL ANALYSIS
Project ID: 20-8613

Order No.:
Report #: 584599
Phone: 0447 494 101
Fax:

Received: Feb 13, 2018 5:22 PM
Due: Feb 20, 2018
Priority: 5 Day
Contact Name: Shaun Muir

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Metals M8	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	D2	Feb 12, 2018		Soil	S18-Fe14368	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples 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

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 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
Method Blank									
Heavy Metals									
Arsenic			mg/kg	< 2			2	Pass	
Cadmium			mg/kg	< 0.4			0.4	Pass	
Chromium			mg/kg	< 5			5	Pass	
Copper			mg/kg	< 5			5	Pass	
Lead			mg/kg	< 5			5	Pass	
Mercury			mg/kg	< 0.1			0.1	Pass	
Nickel			mg/kg	< 5			5	Pass	
Zinc			mg/kg	< 5			5	Pass	
LCS - % Recovery									
Heavy Metals									
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
Spike - % Recovery									
Heavy Metals				Result 1					
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
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
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	
Duplicate									
				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](#).

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CHAIN OF CUSTODY RECORD

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Company		Clearsafe		Project No		20-8613		Project Manager		Shaun Muir		Relinquished by		SL	
Address		1/185 Berkeley Rd Chandlera		Project Name				Report Format				11.30am		12/2/18	
Contact Name		Shaun Muir		Analysis Heavy Metals		8 Heavy Metals						Email for Results		info@clearsafe.com.au	
Phone No		0447494011													
Special Direction															
Purchase Order															
Quote ID No															
No	Client Sample ID	Date	Matrix												
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Total Counts				1											
Method of Shipment		☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name		Signature		Date		Time		Date		Time	
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Received By				SYD BNE MEL PER ADL NEW DAR		Signature						Report No		584599	

APPENDIX E

NSW DEPARTMENT OF PLANNING, INDUSTRY, AND ENVIRONMENT - RESPONSES

The following table presents a list of comments received by various agencies as part of review of the EIS including sub-consultancy reports. Where relevant, a response has been included in the last column of the table.

Agency	Requirement / comment	Response / where addressed.
SEARs	An investigation to identify any soil or water contamination on the site and proposed management measures.	This report which comprises a Stage 1 Preliminary Site Investigation with limited sampling, has been prepared to assess the risk of soil and water contamination, and addresses the listed requirement. The report concludes that 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 Asbestos Containing Material (ACM) was identified on ground surfaces within the north-eastern and central sections of site. Subsequently, it was the opinion of the inspector that the site is considered suitable for the proposed development subject to recommendations of this report including remediation of identified ACM.
Central Coast Council	Need to address relevant parts of the Gosford DCP 2013 including Cahpter 6.1 Acid Sulphate Soils	As part of the Stage 1 Preliminary Site Investigation, a review of the Acid Sulfate Soil Risk Map - Edition Two supplied by the Department of Land and Water Conservation indicated that the site lies in an area with no known occurrence of acid sulfate

		soil materials. This is supported by the comment made by Central Coast Council as detailed in the following sections of this table where the council has stated "The land is mapped as Class 5 no known occurrence of ASS. No issues are expected."
EPA	Provide details of the site history – if earthworks are proposed, this needs to be considered with regard to possible soil contamination.	The site history was reviewed as part of the Stage 1 primary Site Investigation and the risk of soil contamination assessed which included limited sampling and analysis of samples, and addresses the listed requirement. . The report concludes that 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 Asbestos Containing Material (ACM) was identified on ground surfaces within the north-eastern and central sections of site. Subsequently, it was the opinion of the inspector that the site is considered suitable for the proposed development subject to recommendations of this report including remediation of identified ACM.

Comments on EIS from Public Exhibition (Feb – Mar 2019)		
Department of Planning and Environment	The Department notes Figure 3 in Stage 1 Preliminary Site Investigation (PSI) is inconsistent with the current proposal. Please update Figure 3 in accordance with the current proposal.	Figure 3 has been updated to include the current map revision.
Central Coast Council	The land is mapped as Class 5 no known occurrence of ASS. No issues are expected.	Noted. This is in line with the details of the Stage 1 Preliminary Site Investigation
Central Coast Council	Asbestos Containing Material ('ACM') and Site Contamination The land is not listed as a significantly contaminated site to require management under the Contaminated Land Management Act 1997. Council records indicate that the site has historically been used as a Sand and Metal Recycling Facility which is listed as a potentially contaminating activity in the EPAs Managing Land Contamination Planning Guidelines SEPP 55- Remediation of Land. Council records indicate that a Compliance and Health Officer inspected the site on 20 September 2017 and observed that areas of the land were visibly contaminated with waste and possible ACM. The Stage 1 Preliminary Site Investigation for Contamination dated March 2018 prepared by Clear Safe Environmental Solutions has been reviewed and has generally been prepared in accordance with EPAs Guidelines for Contaminated Sites. Non-friable asbestos located on the ground surface, stockpiles of fill (waste) material and potentially hazardous materials, such as lead paint, from aged buildings were identified as contaminants of concern. The Report provided a number of recommendations which have been applied as conditions of consent.	Noted.

Central Coast Council	Soils The site is relatively flat, however gently slopes to the South-West. A watercourse and number of ponds /dams are located on the site which is a tributary of Piles Creek. The area of soil disturbance is expected to be approximately 40,000m² Cut and fill will occur during the construction phase, with approx. 12,000m³ of the excess material expected to be used as product. The Soil and Water Management Plan Report prepared by Cardno dated 11 January 2019 ("the SWMP") has not been prepared in accordance with the minimum requirements of the Blue Book and the Gosford DCP. Council would be the ARA during the construction phase of the development.	Noted.
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