Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Unexpected Finds Protocol

Cranbrook School
Victoria Road, Bellevue Hill

Prepared for
Cranbrook School

Project 84944.02
March 2019

Douglas Partners
Geotechnics / Environment / Groundwater

Document History

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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature	Date
Author		6 March 2019
Reviewer		6 March 2019

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Unexpected Finds Protocol
Cranbrook School
Victoria Road, Bellevue Hill

1. Introduction

This Unexpected Finds Protocol (UFP) has been prepared by Douglas Partners Pty Ltd (DP) for a proposed development at Cranbrook School, Victoria Road, Bellevue Hill. The work was commissioned by Cranbrook School.

It is understood that the proposed development includes the construction of an underground sporting facility (swimming pool, sports courts) and basement parking area beneath the oval in the northern portion of the site. This will involve a deep excavation followed by the replacement of the oval on a suspended structure. A separate performing arts and indoor sporting facility (the 'Centenary Building') is also proposed to the south-east of the oval which will involve the demolition of several existing buildings followed by a deep excavation into the embankment.

2. Previous Reports

The previous investigations and reports undertaken by DP on the site are listed below. These have been drawn upon in developing this UFP.

- 84944.00 – Geotechnical Investigation, 2015
- 84944.01.R.001 – Geotechnical Investigation, 2017
- 84944.01.R.002 – Waste Classification, 2017
- 84944.02.R.001 – Geotechnical Investigation, October 2018
- 84944.02.R.004 – Preliminary Site Investigation (Contamination), March 2018

3. General Unexpected Finds Protocol

The UFP has been established to deal with unexpected findings and/or unplanned situations that may arise during civil and construction works associated with the proposed development. This protocol is applicable to unexpected finds relating to potentially contaminated soils that may be encountered during excavation works.

The UFP is not a detailed action or management plan to deal with all unexpected finds. If unexpected finds do occur, then additional information and advice will be required from the Environmental Consultant or Occupational Hygienist, as applicable.

The protocol for unexpected finds relating to contamination is as follows:

1. The contractor(s) undertaking any remediation, civil or construction works will be provided with a copy of this UFP. The contractor(s) will nominate their Site (Project) Manager who will be responsible for implementing the UFP;
2. Upon discovery of suspected contaminated material, the Site (Project) Manager is to be notified and the affected area closed off by the use of barrier tape and warning signs (if appropriate) and sediment controls. Warning signs shall be specific to the findings and potential hazards and shall comply with the Australian Standard 1319-1994 – Safety Signs for the Occupational Environment;
3. The agreed qualified Environmental Consultant and Principal are to be notified as soon as possible by the Site Manager to inspect the area and confirm the presence or otherwise of hazards or contamination, and to determine the method and extent of investigation or remediation works to be undertaken.
4. A report detailing this information will be compiled by the Environmental Consultant and provided to the Site Manager, who will disseminate to the Principal (or their representative);
5. All work associated with the contaminated soil will be undertaken by an appropriately licensed contractor, as stipulated by the Environmental Consultant and agreed with the Principal;
6. All works must comply with the provisions of the relevant legislation and guidelines;
7. Documentary evidence (weighbridge dockets) of appropriate disposal of the material is to be provided to the Principal (or their representative) if disposal occurs;
8. Details of all relevant activities are to be recorded in the site record system;
9. Details of the remediation and validation works undertaken with respect to the unexpected find must be incorporated into the final Validation Assessment Report prepared by a suitably qualified Environmental Consultant;
10. The preferred strategy is to keep contaminated soil on site in designated areas where possible. Materials must not be removed from the site without agreement by the Principal.

4. Classification of Soils

4.1 General

The proposed development will involve the excavation and disposal of surplus soils off site. Detailed geotechnical and contamination testing has previously been undertaken as outlined in Section 2 of this UFP. However, there may also be unexpected finds during the course of the works that will also require encapsulation on site or, with Principal approval, disposal off-site. Any materials excavated from the site and approved for off-site disposal must be classified prior to disposal in accordance with the relevant guidelines and legislation.

Based on the nature of the materials likely to be generated by the proposed site works, the following legislation and guidelines are considered to be applicable to the classification of the various waste streams that may require disposal off site:

1. *Protection of the Environment Operations* (POEO) *Act 1997*;
2. NSW EPA *Waste Classification Guidelines Part 1: Classifying Waste*, 2014;
3. NSW DECCW *Protection of the Environment Operations (Waste) Regulation 2005, General Exemption Under Part 6, Clause 51 and 51A, The Excavated Natural Material Exemption* (ENM), 2008; and
4. NSW DECCW *Protection of the Environment Operations (Waste) Regulation 2005, General Exemption Under Part 6, Clause 51 and 51A, The Recovered Aggregate Exemption*, 2008.

4.2 Fill Soils

Unless advised otherwise by the Environmental Consultant, filling soils will be sampled and analysed at a rate of 1 sample per 100-250 m^3 to determine the concentrations of the target contaminant parameters in the excavated materials. Recovered samples will generally be analysed for the following:

- heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc) (every sample);
- PAH (every sample);
- TRH/ BTEX (every sample);
- Phenols (every third sample);
- OCP (every third sample);
- PCB (every third sample);
- Asbestos (every sample).

Analysis of specific samples for any identified additional contaminants of concern will be carried out based on visual and olfactory observations, PID results and proximity to potential sources of contamination as follows;

- For classification purposes selected samples may be subject to toxicity characteristic leaching procedure (TCLP) analysis based on total concentration results, including samples with reported levels of various contaminants elevated above the screening (CT) criteria and targeting the most elevated results;
- If the materials are tested to determine if the material meets the requirements of a general resource recovery order (such as ENM, recovered fines or recovered aggregate) then additional testing may be required as specified by the general exemption;
- A classification in accordance with EPA (2014) will be assigned by the Environmental Consultant.

4.3 Natural Soils and Rock

- *In situ* or stockpiles of excavated natural sands, clays and rock will be visually examined for indicators of potential contamination (such as staining or odours) and the presence of non-natural materials such as filling or foreign inclusions; and

- Should the *in situ* or stockpiled materials be considered free from contamination indicators, non-natural materials and foreign inclusions, a minimum of one sample will be recovered for a general screen of analytes. Depending upon the results, a VENM classification will be assigned by the Environmental Consultant.

5. Disposal and Containment

Following completion of the waste classification process, and the issuing of waste classification reports by the Environmental Consultant, the surplus classified materials will either be encapsulated on the site where possible, or disposed of off-site. The preference is for encapsulation on site.

5.1 On-site Containment

Should materials that have undergone testing for waste classification be proposed for retention on site, the materials will be consolidated and isolated in accordance with NSW EPA approved guidelines as follows:

- Spoil stockpiles classifying as VENM can be buried on site as part of landscaping works or general civil works, subject to geotechnical suitability;
- Materials meeting one of the general resource recovery orders (RROs) can be re-used on site as part of landscaping works or general civil works, subject to geotechnical suitability;
- Spoil stockpiles classifying as General Solid Waste or Restricted Solid Waste will be assessed on site by the Environmental Consultant/Occupational Hygienist and a methodology for their consolidation and compaction and capping/containment of the waste will be determined; and
- Spoil stockpiles classifying as Hazardous Waste may not be able to be buried on site. Further recommendations are to be given on a case-by-case basis by a suitably qualified Environmental Consultant.

5.2 Off-site Disposal

Classified materials to be removed from the site will need to be disposed of in accordance with NSW EPA approved guidelines as follows:

- Spoil stockpiles classifying as VENM will be taken to another development site for use as general filling, following acceptance of the materials by the recipient. Alternatively, VENM will be taken to a licensed landfill or other licensed facility;
- Materials meeting one of the general resource recovery orders (RROs) will be either transported to another development site for land application in accordance with the order, or taken to a licensed landfill or other licensed facility;
- Spoil stockpiles classifying as General Solid Waste or Restricted Solid Waste will be taken to a landfill facility licensed to accept such waste streams; and

- Spoil stockpiles classifying as Hazardous Waste will remain segregated in stockpiles pending treatment/alternate disposal arrangements. Such stockpiled materials will be covered by anchored geotextile to prevent erosion and wind blow of contaminated materials. Materials considered to have the potential to produce contaminated leachate will be stockpiled in an area with an appropriate leachate collection system.

In general, all materials removed from the site shall be disposed of at a location legally allowed to receive them in accordance with the POEO Act. Copies of all necessary approvals from the landfill shall be given to the Site Manager prior to any contaminated material being removed from the site.

Copies of all consignment notes for the transport, receipt and disposal of all materials (including VENM) will also be maintained as part of the site log and made available to the Environmental Consultant for inspection and reporting purposes upon request. This information will include the source of the materials and the disposal location and tonnages (weighbridge dockets).

Relevant waste classification results shall be made available to the receiving site/waste facility to enable selection of a suitable disposal location.

6. Loading and Transport of Contaminated Materials

Transport of all materials to and from the site shall be via clearly delineated, pre-defined haulage routes.

Removal of waste materials from the site shall only be carried out by a licensed contractor holding an appropriate licence, consent or approval as required by the POEO Act 1997 and with the appropriate approvals obtained from the NSW EPA, if required.

Details of all contaminated and spoil materials removed from the site (including VENM) shall be documented by the contractor with copies of weighbridge slips, trip tickets and consignment disposal confirmation (where appropriate) provided to the Environmental Consultant and the Principal's Representative / Site Manager. A site log shall be maintained to track disposed loads against on-site origin, location of the materials and sample numbers.

The proposed waste transport route will be notified to the local Council, where necessary, and truck dispatch shall be logged and recorded by the Contractor for each load leaving the site.

7. Waste Exceeding the Disposal Threshold

If spoil is assessed to have exceeded the threshold criteria for disposal as Restricted Solid Waste (as defined in EPA 2014) and cannot be directly disposed of off-site, these materials will be held on site pending the determination of alternative disposal arrangements.

The contingency plan to manage contaminated spoil materials that fail to meet the off-site disposal criteria is therefore as follows:

1. Excavated material which cannot be disposed of in a landfill directly i.e. those which are awaiting TCLP results or which fail the combined specific concentration and TCLP test, or require storage pending treatment, will be placed in separate demarcated stockpiles.
2. Disposal arrangements will be determined based on sampling results as follows:
   - Material which meets the disposal levels of EPA (2014) shall be collected and disposed directly to a landfill, pending Principal approval;
   - Material which exceeds the disposal guideline levels shall be tested for TCLP. If the TCLP and total concentration are within the disposal requirements of General Solid Waste or Restricted Solid Waste, the materials will be dispatched off-site, pending Principal approval. Materials which fail the criteria will be segregated into separate stockpiles for alternate disposal arrangements; and
   - Those materials which exceed the leachability criteria for landfill disposal, shall be stockpiled separately on an impermeable surface, be bunded to prevent leachate generation, and be subject to further treatment as directed by the Environmental Consultant.
3. Consent as to the appropriateness of the treatment and disposal method for materials exceeding the leaching guidelines may need to be obtained from the NSW EPA, and if required a disposal consent must be sought from the Authority prior to the removal of such wastes from the site.

8. Unexpected Asbestos Finds Protocol

It is possible that asbestos-based materials may be uncovered. In the event that this occurs the following 'Unexpected Asbestos Finds Protocol' has been established:

1. Upon discovery of suspected asbestos containing material, the Site Manager is to be notified and the affected area closed off by the use of barrier tape and warning signs. Warning signs shall be specific to asbestos hazards and shall comply with the Australian Standard 1319-1994 – Safety Signs for the Occupational Environment;
2. An Occupational Hygienist is to be notified to inspect the area and confirm the presence of asbestos (and type of asbestos) and determine the extent of remediation works to be undertaken. A report detailing this information will be compiled by the Occupational Hygienist and provided to the Site Manager;
3. SafeWork NSW is required to be notified in the event that more than 10 m^2 of bonded asbestos is encountered, or if any friable asbestos is encountered, and further works in relation to the asbestos will generally not be permitted until a permit has been issued by SafeWork NSW which may take up to 5 days;
4. If deemed an appropriate strategy by the Occupational Hygienist and Principal, the impacted soil will be stockpiled for waste classification purposes (including sampling and chemical analysis). In dry and windy conditions the stockpile will be lightly wetted and covered with plastic sheeting whilst awaiting disposal;

5. All work associated with asbestos in soil will be undertaken by a Contractor holding a class AS1 Licence (if only bonded asbestos is found) and all workers working in the asbestos impacted zone must meet the following minimum PPE requirement (unless otherwise advised by the Occupational Hygienist):
   - Steel-capped lace-less boots;
   - Hard hat meeting AS1801-1981 and AS/NZS 1801:1997/Amdt 1:1999 requirements;
   - High visibility clothing;
   - Half-face P2 rated respirator or similar;
   - Disposable full length body coveralls with elasticated hood and cuffs (Tyvek suit or equivalent); and
   - Gloves.
6. If deemed necessary by the Occupational Hygienist (e.g. asbestos fibres are detected and/or there are nearby sensitive receptors) monitoring for airborne asbestos fibres is to be carried out during the soil excavation. Asbestos air monitoring will be undertaken in accordance with *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC: 3003 (2005)] and sampling density and locations will be determined by the Occupational Hygienist. All filters will be submitted to a NATA accredited laboratory for analysis. Air samples will be collected from the breathing zone of a person, over a minimum of four hours duration;
7. The stockpile(s) will be disposed of or contained in accordance with Sections 5.1, 5.2 and 7 of this UFP.
8. Documentary evidence (weighbridge dockets) of correct disposal is to be provided to the Site Manager;
9. At the completion of the excavation, a clearance inspection is to be carried out and written certification is to be provided by the Occupational Hygienist that the area is safe to be accessed. Clearance will include soil samples and asbestos analysis. If required, the filling material remaining in the inspected area can be covered/sealed by an appropriate physical barrier layer of non-asbestos containing material prior to sign–off;
10. Details of the incident are to be recorded in the site record system;
11. The area may be re-opened for further excavation or construction work.

9. Groundwater Monitoring Contingency Plan

In the event that future investigations, remediation and/or civil works identify a significant potential risk of groundwater contamination, and/or if an underground storage tank (UST) is discovered at the site, a groundwater assessment may be required. The groundwater assessment (if required) would comprise the following:

1. The installation of an appropriate number of groundwater monitoring wells (to be determined by the Environmental Consultant) to allow collection of groundwater samples;

2. The measurement of water levels prior to development and prior to sampling using an electronic interface probe which can detect the presence of separate phase liquid in the water column;
3. Field parameters will be measured using a calibrated multi-parameter instrument, with probes placed inside a flow-through cell. The field parameters measured will include temperature, dissolved oxygen, conductivity, specific conductance, total dissolved solids, pH and oxidation reduction potential;
4. Samples will be collected in laboratory prepared bottles and vials. Groundwater samples collected for heavy metals testing will be filtered in the field through a 45 µm membrane filter into nitric acid preserved bottles; and
5. Decontaminating all re-usable sampling equipment prior to collecting each sample using a 3% solution of phosphate free detergent (Decon 90) and distilled water.

Handling and transport of the groundwater samples must be carried out as set out below:

- Sample containers (supplied by the laboratory) must be labelled with individual and unique identification, including project number and sample number;
- Samples must be placed in insulated coolers and maintained at a temperature of approximately 4°C until transported to the analytical laboratory; and
- Chain-of-custody documentation must be maintained at all times and countersigned by the receiving laboratory on transfer of samples.

The groundwater analysis will generally include the following:

- Heavy metals, TRH, BTEX, PAH and VOC;
- Intra-laboratory duplicates for heavy metals, TRH, BTEX, PAH and VOC;
- Trip spikes for BTEX;
- Trip blanks for BTEX and TRH; and
- Equipment rinsate samples for BTEX, PAH, lead, VOC and TRH.

Note: The above analytical suite may be subject to change subject to the identification of other potential contaminants (i.e. pesticides).

Results of the groundwater analysis will be incorporated into a groundwater monitoring validation report.

In the event that no groundwater contamination risks are identified, no groundwater monitoring programme will be considered necessary.

It is noted that dewatering will be the responsibility of the Contractor and is to be undertaken to NSW EPA standards.

10. Contingency Plan to Respond to Site Incidents

The key to effective management of incidents is the timely action taken before any situation reaches a reportable or critical level. Therefore, surveillance activities are extremely important, and should be conducted for the measures prescribed herein and any other measures prescribed in any additional Environmental Management Plan developed subsequently. During construction activities on the site, the following inspection or preventative actions should be performed by the main Contractor:

- Regular inspection of works by the Site Manager;
- Completion of routine environmental checklists and follow-up of non-compliance situations;
- Maintenance of controls on-site;
- An induction process for site personnel involved in the remediation works that includes relevant information on environmental requirements, and ensures that all site personnel are familiar with the site emergency procedures.

The Site Manager should be responsible for initiating an immediate emergency response using the resources available on the site. Where external assistance is required, the relevant emergency services should be contacted. A table such as that below (Table 1), containing contact details for key personnel who may be involved in an environmental emergency response should be completed and be readily available to personnel at all times. The table should be completed, and thereafter amended as required.

Table 1: Example Table for Site Contacts for Environmental Emergencies

Name	Contact Details
Emergency Services: Fire Brigade, Ambulance and Police	Tel: 000
Nearest Doctor's Surgery	TBA
Nearest Medical Centre	TBA
Nearest Hospital	TBA
NSW EPA	Pollution Line Tel: 131 555
Local Government Authority – Woollahra Municipal Council	9391 7000
Water Authority	Emergency Line: 13 20 90
Energy Australia	Emergency Line: 131 388
AGL	Emergency Line: 131 909
Waste Disposal and spill clean-up services	TBA
Neighbours	TBA

Note: This table or similar should be completed by the Contractor prior to commencement of works and, subsequently, regularly updated.

11. Limitations

Douglas Partners Pty Ltd (DP) has prepared this UFP for a redevelopment project at Cranbrook School, Bellevue Hill in accordance with instructions received from Cranbrook School. The report is provided for the use of Cranbrook School for this project only and for the purpose(s) described in the report. It should not be used for other projects or by a third party.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Douglas Partners Pty Ltd

Appendix A

About this Report

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

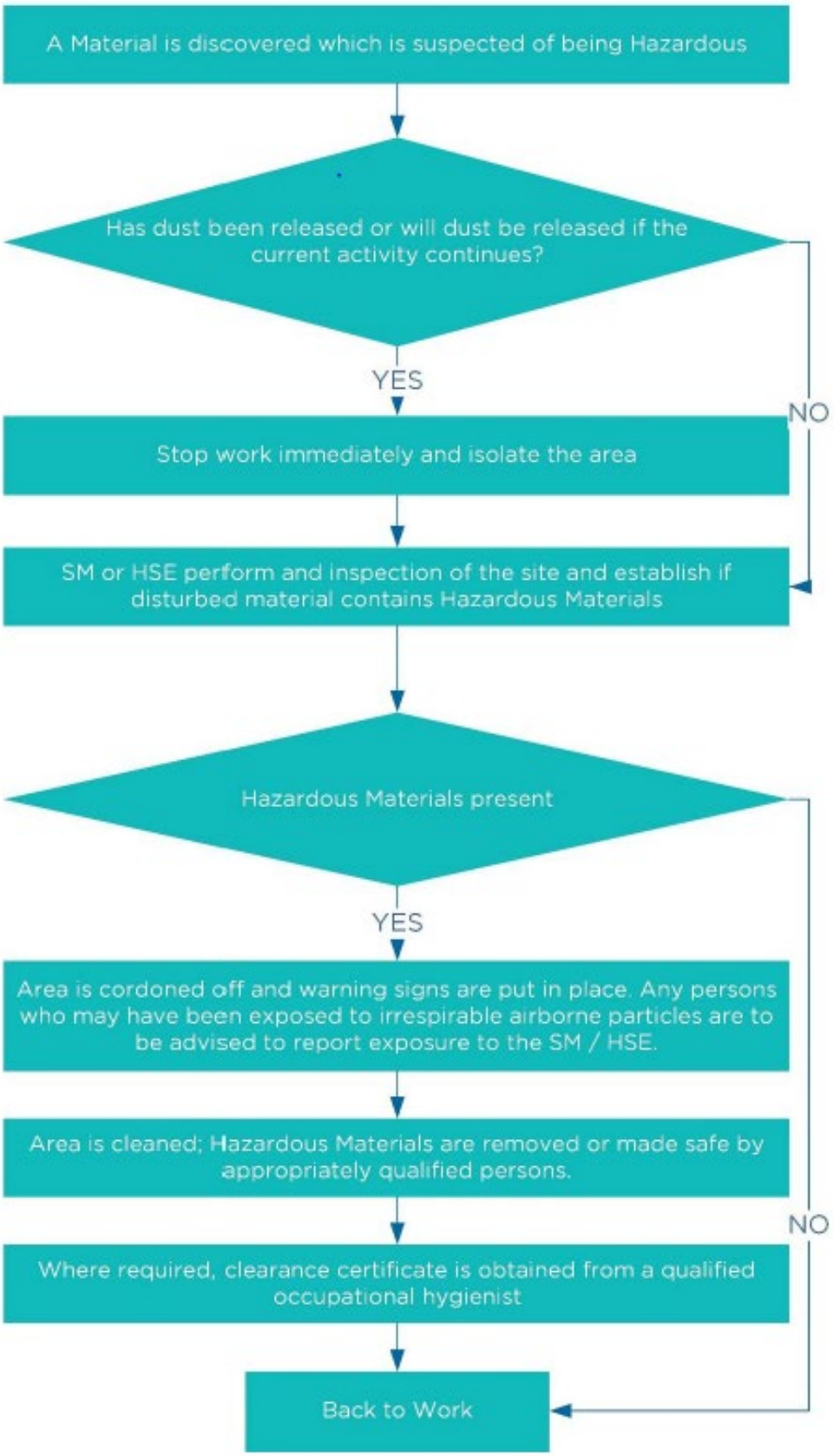
In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

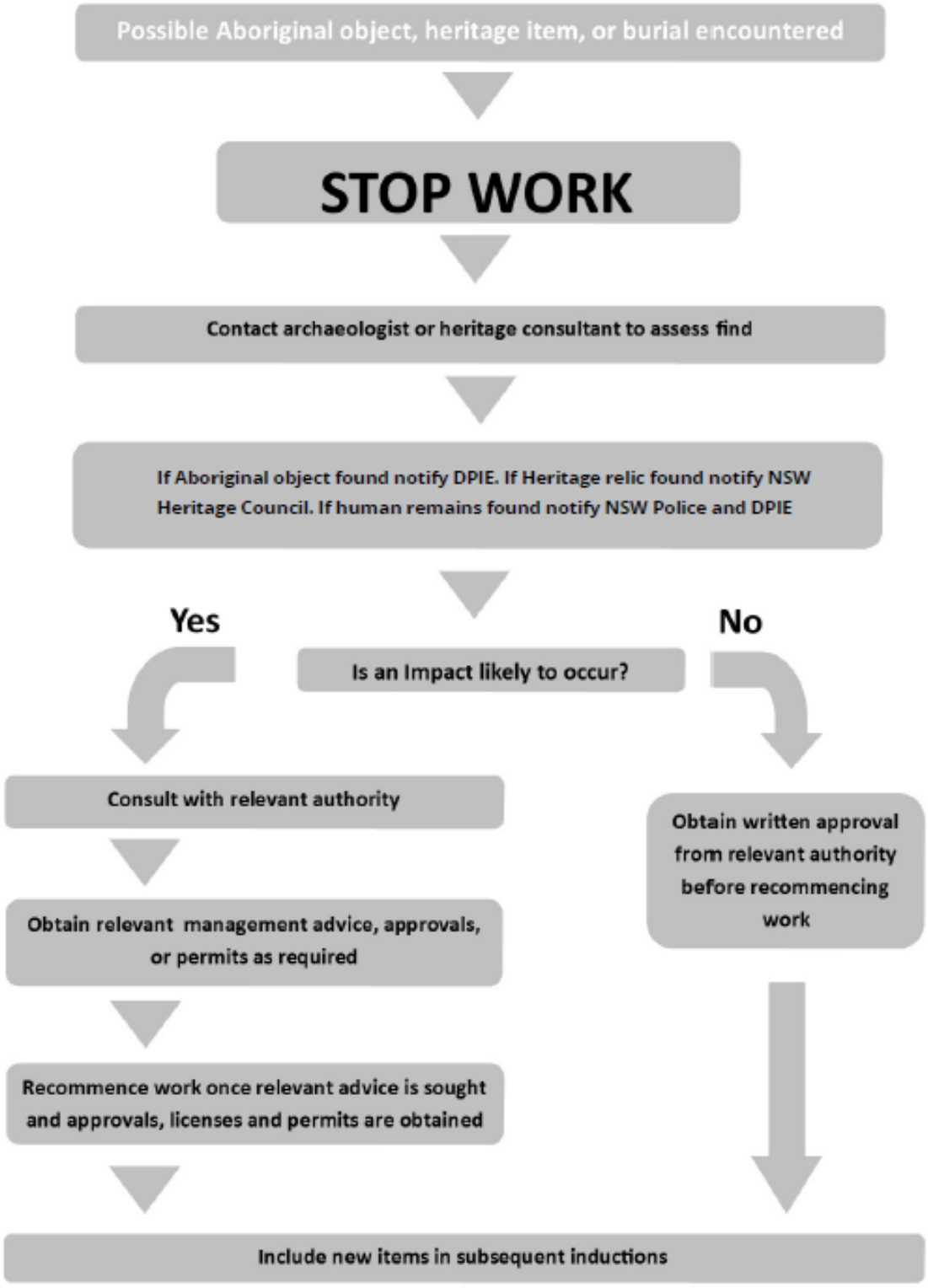
Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.


A Material is discovered which is suspected of being Hazardous
Has dust been released or will dust be released if the current activity continues?
YES
NO
Stop work immediately and isolate the area
SM or HSE perform and inspection of the site and establish if disturbed material contains Hazardous Materials
Hazardous Materials present
YES
Area is cordoned off and warning signs are put in place. Any persons who may have been exposed to irrespirable airborne particles are to be advised to report exposure to the SM / HSE.
Area is cleaned; Hazardous Materials are removed or made safe by appropriately qualified persons.
NO
Where required, clearance certificate is obtained from a qualified occupational hygienist
Back to Work

APPENDIX I – UNEXPECTED FINDS PROTOCOL FOR ABORIGINAL & NON-ABORIGINAL HERITAGE


Possible Aboriginal object, heritage item, or burial encountered
STOP WORK
Contact archaeologist or heritage consultant to assess find
If Aboriginal object found notify DPIE. If Heritage relic found notify NSW Heritage Council. If human remains found notify NSW Police and DPIE
Yes
No
Is an Impact likely to occur?
Consult with relevant authority
Obtain relevant management advice, approvals, or permits as required
Recommence work once relevant advice is sought and approvals, licenses and permits are obtained
Obtain written approval from relevant authority before recommencing work
Include new items in subsequent inductions

APPENDIX J – WASTE CLASSIFICATION AND VALIDATION

Douglas Partners Pty Ltd
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84944.02.R.010.Rev0
30 October 2019
PMO

Cranbrook School
c/- epm Projects
Level 2, 146 Arthur Street
NORTH SYDNEY NSW 2060

Attention: Mr Todd Ewart

Dear Sirs

In Situ Waste Classification & ENM Assessment
Hordern Oval
Cranbrook School, Bellevue Hill

1. Executive Summary

This report describes the methodology and results of an In Situ Waste Classification and Excavated Natural Material (ENM) Assessment undertaken by Douglas Partners Pty Ltd (DP) on Hordern Oval, Cranbrook School, Bellevue Hill. The intention of the assessment was to cover the materials that are to be removed during excavation works for proposed Aquatic and Fitness Centre (AFC). The results are summarised in Tables 1 and 2 which refer to the attached Drawing C1.

Table 1: Summary of Waste Classification Assessment for Yellow Shaded Areas on Drawing C1

In Situ Location	Fill materials that are above natural soil/rock in the yellow shaded areas on Drawing C1
Material Description	Silty sand fill and sand fill as described on the attached borehole logs for BH2 and BH113
Classification	General Solid Waste (non-putrescible) based on CT1 criteria
References	NSW EPA *Waste Classification Guidelines* (2014)

Table 2: Summary of Waste Classification Assessment for Non-Shaded Area on Drawing C1

In Situ Location	Fill materials that are above natural soil/rock in all areas within the excavation footprint except for the yellow shaded areas on Drawing C1
Material Description	Silty sand and silty clay topsoil, and sand fill (including cemented sand/coffee rock) as described on the attached borehole logs
Classification	General Solid Waste (non-putrescible) based on CT1 criteria and Excavated Natural Material (ENM)
References	NSW EPA *Waste Classification Guidelines* (2014) The excavated natural material order/exemption 2014

Reference should be made to the following sections of the report for information on the materials and their location which are subject to this assessment, the sampling and testing methodology, guidelines used, analytical results, and the conditions and limitations associated with this assessment.

2. Introduction

This In Situ Waste Classification & ENM Assessment was commissioned by Cranbrook School to provide information in relation to disposal options for materials that will be removed from Hordern Oval. These materials are likely to include bulk excavation spoil, pile spoil and spoil from ancillary works. The attached Drawing C1 shows the location of the assessment area.

The assessment was undertaken in accordance with the requirements of *The excavated natural material order 2014* issued by the NSW EPA under Part 9, Clause 93 of the *Protection of the Environment Operations (Waste) Regulation 2014*. Where the ENM requirements were not met, the materials were classified in accordance with *Waste Classification Guidelines* (NSW EPA, 2014).

3. Scope of Works

The scope of works for the waste classification was as follows:

- Review the results of previous contamination testing undertaken on the site by Douglas Partners in 2015 and in 2017;
- Undertake additional sampling from 16 test pits excavated by the project archaeologist in October 2019 to gain further information on the contaminant concentrations on the site;
- Collect discrete soil samples from various depths within the boreholes/test pits in general accordance with the ENM Order;
- Dispatch the soil samples to a NATA accredited laboratory (Envirolab Services Pty Ltd) for quantitative analysis for the suite of contaminants outlined in the ENM Order;
- Preparation of this In Situ Waste Classification & ENM Assessment report.

4. Site Information and Potential for Contamination

Cranbrook School opened in 1918 and presumably the oval has been in use since this time. The southern portion of the oval is below a batter slope and the northern portion is supported by a retaining wall. As such, it appears likely that material was excavated from a natural hill in the south and deposited in the lower area to the north to create a large level playing area. To our knowledge, no obviously contaminating activities have been undertaken in this area of the site.

The suite of contaminants required to be assessed under the *ENM Order* is as follows:

- Eight priority metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc;
- Total petroleum hydrocarbons (TPH);
- Benzene, toluene, ethylbenzene and xylenes (BTEX);
- Polycyclic aromatic hydrocarbons (PAH);
- pH;
- Electrical conductivity; and
- Foreign materials.

In addition to these analytes, the following suite was also assessed in accordance with the *Waste Classification Guidelines*:

- Organochlorine pesticides (OCP);
- Organophosphorus pesticides (OPP);
- Polychlorinated biphenyls (PCB);
- Phenol; and
- Asbestos.

5. Field Work Rationale and Methodology

The area of the assessment is shown on Drawing C1 which is attached to this report. The area has been assessed to be approximately 15,000 m^2 and therefore 25 sampling locations are required on the basis of the *ENM Order* and *Sampling Design Guidelines* (NSW EPA, 1995). Samples were obtained from 30 locations which exceeds the minimum number required.

The environmental sampling for the current assessment was performed by Douglas Partners on 23 October 2019, with reference to standard operating procedures outlined in the DP *Field Procedures Manual*. All sampling data was recorded on DP chain-of-custody sheets. The general sampling procedure comprised:

- Collection of representative soil samples from within the boreholes/test pits in general accordance with the requirements of the ENM Order;
- The use of decontaminated equipment for each sampling event;
- Transfer of samples into laboratory-prepared glass jars, capping immediately, minimising the headspace within the sample jar;
- Collection of replicate soil samples in zip-lock bags for asbestos screening purposes;
- Labelling of sample containers with individual and unique identification, including project number, sample location and sample depth;

- Placing the glass jars into a cooled, insulated and sealed container for transport to the laboratories; and
- Use of chain of custody documentation ensuring that sample tracking and custody could be cross-checked at any point in the transfer of samples from the field to the laboratory. Copies of completed chain of custody forms are attached.

6. Field Work and Laboratory Test Results

The materials encountered during the various stages of the field work are described in the borehole and test pit logs attached to this report. A summary of the laboratory test results is provided in Tables 3 and 4, also attached, along with the detailed laboratory result reports. The foreign materials results were all below the laboratory detection limits.

7. Waste Classification Assessment

The *Waste Classification Guidelines* include the following six-step process for waste classification:

- Establish if the waste is 'special waste'
- Establish if the waste is 'liquid waste'
- Establish if the waste is 'pre-classified' by the EPA
- Establish if the waste possesses hazardous characteristics
- Determine the contaminant concentrations of the waste
- Establish if the waste is putrescible

Visual inspection and the laboratory analysis indicated that asbestos was not present in the soil samples tested. The soil samples did not contain clinical waste or tyres and therefore the soils on the site are not classified as special waste.

The samples analysed were not in liquid form and therefore could not be described as liquid waste.

The EPA has pre-classified glass, plastic, rubber, bricks, concrete, building and demolition waste, and asphalt waste as General Solid Waste (non-putrescible). The materials within the samples were typically soil and therefore not pre-classified.

The samples analysed did not possess any obvious hazardous characteristics and could not be described as hazardous waste prior to chemical analysis. All samples analysed were assessed on a visual and tactile basis as being incapable of significant biological transformation and are therefore considered to be non-putrescible.

Due to the number of samples used for this assessment, the sample mean, sample standard deviation and 95% UCL concentrations were used to compare the contaminant concentrations with the contaminant threshold (CT) criteria provided in the guidelines. All sample mean, sample standard deviation and 95% UCL concentrations were within the CT1 criteria.

On this basis, all samples of fill would be classified as General Solid Waste (non-putrescible) and would need to be disposed of at a site that is licenced to receive this category of waste. Any materials encountered on the site that are different to those described herein may have a different classification.

The natural soils and, where encountered, rock below the fill should be able to be described as virgin excavated natural material (VENM) upon excavation, providing they are not cross-contaminated during excavation/piling works. Validation of this status will be required once the overburden has been removed from the site. VENM can usually be transported to a site for use as fill rather than requiring disposal at landfill.

8. ENM Assessment

The excavated natural material order 2014 defines ENM as naturally occurring rock and soil that has:

- been excavated from the ground; and
- contains at least 98% (by weight) natural material; and
- does not meet the definition of Virgin Excavated Natural Material.

Further, ENM does not include material located in a hotspot, material that has been processed, or material that contains asbestos, acid sulphate soils (actual and potential) or sulfidic ores. The *ENM Order* also describes sampling frequency, contaminants to be analysed and test methods to be used.

The testing described in this report was carried out in general accordance with the requirements for in situ assessment as outlined in the ENM Order. The laboratory test results, sample receipt and chain-of-custody documentation are attached to this report. A summary of the results of the testing, as well as the ENM criteria for the various analytes, are provided in Tables 3 to 5 which are attached to this report.

All sample analysis was conducted by Envirolab Services Pty Ltd in accordance with the chain-of-custody prepared by DP. Based on a review of the laboratory reported QC results, it is considered that the laboratory test data obtained are reliable and useable for this assessment.

As shown in Tables 3 to 5, the majority of the samples analysed met the requirements of the *ENM Order*. Only the samples from previous boreholes BH2 and BH113 did not due to slightly elevated concentrations of Arsenic or Benzo(a)pyrene. These areas have been delineated in yellow shading in the attached Drawing C1.

Based on the observations at the time of sampling and the reported analytical results, the materials outside the areas of yellow shading can be described as *Excavated Natural Material* (ENM) upon excavation and can be disposed of at a site that is licenced to receive this type of material.

9. Additional Comments

Division 4, Section 45, of *The Protection of the Environment Operations (Waste) Regulation 2014* states that it is an offence for waste to be transported to a place that cannot lawfully be used as a facility to accept that waste. It is the duty of the owner and transporter of the waste to ensure that the waste is disposed of appropriately. DP does not accept liability for the unlawful disposal of waste materials from any site. DP accepts no responsibility for the material tracking, loading, management, transport or disposal of waste from the site. Before disposal of the material to a licensed landfill is undertaken, the waste producer will be required to obtain prior consent from the landfill.

The requirements of the ENM Order and ENM Exemption must be followed if any material is disposed of as ENM, and these documents are attached to this report for information.

Both the receiving site and the site disposing of the material should satisfy the requirements of the licence before disposal of the material is undertaken. Note that appropriate prior arrangement with the receiving site/relevant authorities should be obtained prior to the disposal of any material off site. The receiving site should check to ensure that the material received matches the description provided in this report and contains no cross contamination.

The results provided in the report are indicative of the sub-surface conditions only at the specific sampling locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change as a result of human influences, and such changes may occur after DP's field testing has been completed. Furthermore, fill is by its nature heterogeneous and therefore some parts of the fill may not be represented by the visual and analytical results reported herein.

10. Limitations

Douglas Partners (DP) has prepared this report for this project at Cranbrook School, Bellevue Hill, in accordance with instructions from Cranbrook School. This report is provided for the use of Cranbrook School for this project only and for the purposes as described in the report. It should not be used for other projects or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Please contact the writer for clarification of the above as necessary.

Yours faithfully
Douglas Partners Pty Ltd

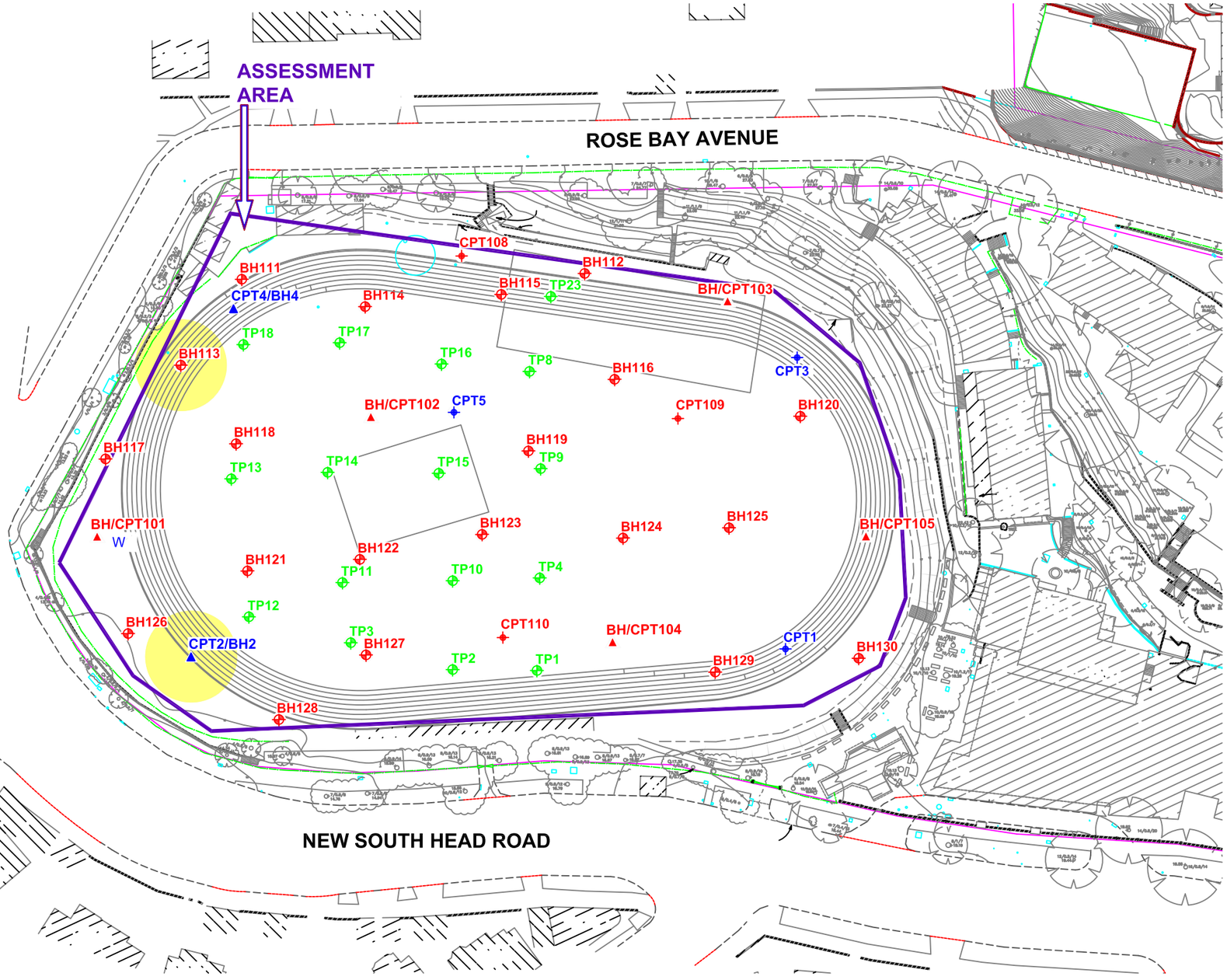
Reviewed by

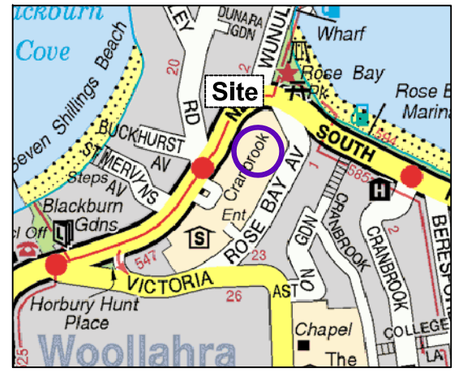
Peter Oitmaa
Principal

pp **J M Nash**
Principal

Attachments: Drawing C1
Summary of Laboratory Test Results
Current and Previous Borehole/Test Pit Logs
NATA Laboratory Certificates, Chain-of-Custody Documentation & Sample Receipt Advice
ENM Order and ENM Exemption
Notes About this Report

Drawing C1





Locality Plan

LEGEND

- Previous borehole 2015
- Previous CPT 2015
- Previous borehole & CPT 2015
- Previous borehole & CPT 2017
- Previous CPT 2017
- Previous borehole 2017
- W Groundwater well
- Current test pit location
- Area of GSW (not ENM)

NOTE:
1. Base drawing from Hill & Blume Pty Ltd (Ref. 41104, dated 14.5.2010)

0 10 20 30 40 50 75 100m
1:1000 @ A3

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: Cranbrook School		TITLE: **Locations of Tests - Hordern Oval** **In Situ Waste Classification & ENM Assessment** **Cranbrook School, BELLEVUE HILL**
OFFICE: Sydney	DRAWN BY: PSCH	
SCALE: 1:1000 @A3	DATE: 30.10.2019	

PROJECT No: 84944.02
DRAWING No: C1
REVISION: 0

Summary of Laboratory Test Results

Table 3: Contaminant Concentrations in Filling

Sample/ Depth (m)	B	T	E	X	TRH_{6-9}	TRH_{10-36}	+PAH	B(a)P	+OCP	+PCB	Phenol	Asbestos	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	pH	EC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	(Y/N)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	units	dS/m
Filling (2015)																						
BH2/1.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	41	<0.4	3	5	3	<0.1	<1	36	6.3	0.021
BH2/2.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	2	1	3	<0.1	<1	3	6.5	0.013
BH2/3.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	<1	1	<0.1	<1	1	6.5	0.013
BH2/4.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	2	<1	1	<0.1	<1	<1	5.8	0.014
BH4/1.0	<0.2	<0.5	<1	<3	<25	<250	5.8	0.3	NIL	NIL	<5	N	<4	<0.4	2	2	5	<0.1	<1	3	6.3	0.014
BH4/2.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	1	9	<0.1	<1	3	6.1	0.012
BH4/3.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	<1	4	<0.1	<1	2	6.0	0.011
BH4/4.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	2	1	14	<0.1	<1	4	6.2	0.014
Filling (2017)																						
BH101/0.5	<0.2	<0.5	<1	<3	<25	<250	3.0	0.3	NIL	NIL	<5	N	6	<0.4	2	18	22	<0.1	1	12	6.4	0.022
BH102/0.5	<0.2	<0.5	<1	<3	<25	<250	1.2	0.2	NIL	NIL	<5	N	11	<0.4	7	18	28	0.3	3	24	6.2	0.027
BH103/0.1	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	42	15	14	<0.1	21	24	5.3	0.200
BH111/0.45-0.5	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	<1	<1	1	<0.1	<1	1	6.3	0.012
BH113/1.0-1.05	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	41	<0.4	1	2	2	<0.1	<1	4	6.1	0.012
BH115/0.1	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	14	<0.4	5	5	6	<0.1	3	16	6.1	0.032
BH117/1.95-2.0	<0.2	<0.5	<1	<3	<25	<250	0.2	<0.05	NIL	NIL	<5	N	<4	<0.4	1	3	7	<0.1	<1	6	6.1	0.014
BH118/0.1-0.15	<0.2	<0.5	<1	<3	<25	<250	0.78	0.06	NIL	NIL	<5	N	5	<0.4	4	5	11	0.2	2	9	5.8	0.027
BH124/0.1	<0.2	<0.5	<1	<3	<25	<250	0.59	0.1	NIL	NIL	<5	N	5	<0.4	4	5	12	0.2	2	13	6.2	0.028
BH126/2.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	<1	1	2	<0.1	<1	3	6.4	0.008
BH128/1.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	2	1	<0.1	<1	5	6.2	0.011
BH130/0.1	<0.2	<0.5	<1	<3	<25	<250	2.3	0.2	NIL	NIL	<5	N	19	0.5	9	19	50	<0.1	4	42	5.7	0.025
Filling (2019)																						
TP1/0-0.3	<0.2	<0.5	<1	<3	<25	<250	0.05	0.05	NIL	NIL	<5	NT	9	<0.4	2	4	5	<0.1	1	9	5.9	0.032
TP2/0.4-0.5	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NT	NT	NT	N	7	<0.4	2	3	4	<0.1	1	7	6.5	0.022
TP3/0.4-0.5	<0.2	<0.5	<1	<3	<25	<250	1.0	0.1	NIL	NIL	<5	NT	<4	<0.4	3	2	6	<0.1	2	5	6.0	0.014
TP4/0.4-0.5	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NIL	NIL	<5	N	<4	<0.4	2	3	6	<0.1	<1	7	6.4	0.016
TP8/1.6-1.8	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NT	NT	NT	N	6	<0.4	1	<1	1	<0.1	<1	2	6.3	0.009
TP8/4.6-4.8	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NT	NT	NT	NT	<4	<0.4	1	<1	1	<0.1	<1	3	5.9	0.011
TP9/0-0.3	<0.2	<0.5	<1	<3	<25	<250	0.92	0.2	NIL	NIL	<5	N	<4	<0.4	4	6	10	<0.1	2	13	6.2	0.016

Table 3: Contaminant Concentrations in Filling (Continued)

Sample/ Depth (m)	B	T	E	X	TRH_{6-9}	TRH_{10-36}	+PAH	B(a)P	+OCP	+PCB	Phenol	Asbestos	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	pH	EC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	(Y/N)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	units	dS/m
TP10/0-0.3	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NIL	NIL	<5	NT	6	<0.4	4	5	10	0.1	2	14	6.6	0.016
TP11/0-0.3	<0.2	<0.5	<1	<3	<25	<250	1.8	0.2	NIL	NIL	<5	NT	8	<0.4	4	9	20	0.1	2	12	5.9	0.023
TP11/0.8-1.0	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NT	NT	NT	N	<4	<0.4	1	2	<1	<0.1	<1	14	5.6	0.008
TP12/1.6-1.8	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NT	NT	NT	NT	8	<0.4	<1	<1	1	<0.1	<1	2	6.1	0.010
TP12/3.6-3.8	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NT	NT	NT	NT	<4	<0.4	2	<1	1	<0.1	<1	<1	5.8	0.012
TP13/0-0.3	<0.2	<0.5	<1	<3	<25	<250	1.4	0.2	NIL	NIL	<5	N	7	<0.4	3	7	17	0.1	2	13	5.9	0.020
TP13/2.8-3.0	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NT	NT	NT	NT	<4	<0.4	<1	<1	<1	<0.1	<1	<1	5.5	0.012
TP14/0.4-0.5	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NIL	NIL	<5	NT	6	<0.4	2	4	6	<0.1	<1	4	6.1	0.012
TP15/0.4-0.6	<0.2	<0.5	<1	<3	<25	<250	0.05	0.05	NIL	NIL	<5	N	<4	<0.4	2	4	8	<0.1	1	5	6.4	0.031
TP16/0.4-0.6	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NT	NT	NT	NT	<4	<0.4	1	2	3	<0.1	<1	4	6.3	0.012
TP17/0-0.3	<0.2	<0.5	<1	<3	<25	<250	0.05	0.05	NIL	NIL	<5	N	5	<0.4	7	6	12	0.1	2	13	5.8	0.025
TP17/0.4-0.5	<0.2	<0.5	<1	<3	<25	<250	0.3	0.08	NT	NT	NT	N	6	<0.4	3	9	11	0.2	1	11	6.0	0.010
TP18/0.4-0.5	<0.2	<0.5	<1	<3	<25	<250	0.05	0.05	NT	NT	NT	NT	5	<0.4	<1	7	12	<0.1	<1	4	6.4	0.011
TP23/0-0.3	<0.2	<0.5	<1	<3	<25	<250	0.2	0.06	NIL	NIL	<5	N	10	<0.4	5	8	17	0.2	2	19	6.7	0.020
TP23/0.4-0.6	<0.2	<0.5	<1	<3	<25	<250	<0.05	<0.05	NT	NT	NT	NT	4	<0.4	1	<1	3	<0.1	<1	2	6.4	0.013
Statistical Analysis of Contaminant Concentrations in Filling (mg/kg)																						
Maximum	NA	NA	NA	NA	NA	NA	29	1.6	NA	NA	NA	NA	41	0.5	42	22	50	0.3	21	42	9.9	0.200
Minimum	NA	NA	NA	NA	NA	NA	NIL	<0.05	NA	NA	NA	NA	<4	<0.4	<1	<1	<1	<0.1	<1	<1	5.3	0.008
Average	NA	NA	NA	NA	NA	NA	1.1	0.09	NA	NA	NA	NA	5.3	NA	3.3	4.8	8.4	NA	1.3	8.9	6.2	0.023
Std. Deviation	NA	NA	NA	NA	NA	NA	4.5	0.25	NA	NA	NA	NA	9.2	NA	6.4	5.7	9.2	NA	3.3	9.1	0.7	0.031
95% UCL	NA	NA	NA	NA	NA	NA	4.1	0.26	NA	NA	NA	NA	11.4	NA	7.5	8.6	14.5	NA	3.4	15.0	6.4	0.043

Notes: B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene; TRH = total recoverable hydrocarbons; +PAH = Positive polycyclic aromatic hydrocarbons; B(a)P = Benzo(a)pyrene; OCP = Organochlorine pesticides; PCB = Polychlorinated biphenyls; As = Arsenic; Cd = Cadmium; Cr = Chromium; Cu = Copper; Pb = Lead; Hg = Mercury; Ni = Nickel; Zn = Zinc; EC = electrical conductivity; NT = Not tested; NA = not applicable
YELLOW shading refers to an exceedance as shown in Table 5

Table 4: Contaminant Concentrations in Natural Soil

Sample/ Depth (m)	B	T	E	X	TRH_{6-9}	TRH_{10-36}	+PAH	B(a)P	+OCP	+PCB	Phenol	Asbestos	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	pH	EC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	(Y/N)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	units	dS/m
Natural Soil (2017)																						
BH101/4.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	2	<1	<0.1	<1	2	6.1	0.008
BH102/2.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	2	3	<0.1	<1	3	6.0	0.009
BH103/1.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	<1	2	<1	<0.1	<1	3	5.7	0.031
BH104/1.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	<1	2	<0.1	<1	4	5.8	0.011
BH105/1.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	3	3	<0.1	<1	4	6.5	0.018
BH111/2.9-3.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	<1	3	<0.1	<1	2	6.1	0.010
BH112/0.5	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	4	4	10	<0.1	2	11	5.6	0.064
BH114/1.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	2	1	3	<0.1	<1	4	6.0	0.013
BH116/1.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	0.6	<1	1	7	<0.1	<1	3	6.4	0.014
BH119/0.5	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	<1	2	2	<0.1	<1	5	5.8	0.012
BH120/0.5	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	9	<0.4	8	7	16	0.1	3	17	8.0	0.130
BH121/1.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	2	3	<0.1	<1	7	6.6	0.012
BH122/1.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	8	4	6	<0.1	8	7	6.6	0.018
BH123/0.5	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	<1	1	3	<0.1	<1	2	6.4	0.015
BH125/0.5	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	2	7	4	<0.1	2	9	6.1	0.017
BH127/0.5	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	1	2	3	<0.1	1	13	5.9	0.013
BH129/0.5	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	2	2	2	<0.1	1	12	6.0	0.016
BH129/2.0	<0.2	<0.5	<1	<3	<25	<250	NIL	<0.05	NIL	NIL	<5	N	<4	<0.4	2	<1	1	<0.1	<1	1	6.1	0.015
Statistical Analysis of Contaminant Concentrations in Natural Soil (mg/kg)																						
Maximum	NA	NA	NA	NA	NA	NA	0.1	NA	NA	NA	NA	NA	9	0.6	8	7	16	0.1	8	17	8.0	0.130
Minimum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<4	<0.4	<1	<1	<1	<0.1	<1	1	5.6	0.008
Average	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.9	2.3	3.9	NA	0.9	6.1	6.2	23.7
Std. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.4	2.1	3.9	NA	2.0	4.6	0.5	29.4
95% UCL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.4	4.4	7.9	NA	3.0	8.7	6.4	53.9

Notes: B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene; TRH = total recoverable hydrocarbons; +PAH = Positive polycyclic aromatic hydrocarbons; B(a)P = Benzo(a)pyrene; OCP = Organochlorine pesticides; PCB = Polychlorinated biphenyls; As = Arsenic; Cd = Cadmium; Cr = Chromium; Cu = Copper; Pb = Lead; Hg = Mercury; Ni = Nickel; Zn = Zinc; EC = electrical conductivity; NT = Not tested; NA = not applicable

Table 5: Comparative Criteria

Description	B	T	E	X	TRH_{6-9}	TRH_{10-36}	+PAH	B(a)P	+OCP	+PCB	Phenol	Asbestos	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	pH	EC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	(Y/N)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	units	dS/m
Waste Classification Guidelines (2014)																						
CT1	10	288	600	1000	650	10000	200	0.8	Various	50	288	N	100	20	100	NA	100	4	40	NA		
ENM Order (2014)																						
Max. Average	NA	NA	NA	NA	NA	250	20	0.5	NA	NA	NA	N	20	0.5	75	100	50	0.5	30	150	5-9	1.5
Absolute Max.	0.5	65	25	15	NA	500	40	1.0	NA	NA	NA	N	40	1	150	200	100	1	60	300	4.5-10	3

Current and Previous Borehole Logs

TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP01
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.0				
	0.3	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.3 0.4 0.5				
	0.6	Pit discontinued at 0.6m; Limit of investigation							

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP02
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.3				
	0.4	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.4 0.6				
	1.0	Pit discontinued at 1.0m; Limit of investigation							

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP03
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.0				
	0.3	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.3 0.4 0.5				
	1.0	Pit discontinued at 1.0m; Limit of investigation							

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP04
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B					
	0.3	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.3 0.4 0.5				
	0.7	Pit discontinued at 0.7m; Limit of investigation							

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP08
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.3	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist							
		FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B*	0.6 0.8				
				E/B	1.6 1.8				
				E/B	2.6 2.8				
				E/B	3.6 3.8				
				E/B	4.6 4.8				
	6.0	SAND SW: fine to medium grained, grey to dark grey, moist, aeolian		E/B	6.4				
	6.5	Pit discontinued at 6.5m; Limit of investigation			6.5				

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: * BD1/20191023 taken at 0.6-0.8m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP09
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.3				
	0.4	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.8 1.0				
	1.5	Pit discontinued at 1.5m; Limit of investigation							

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP10
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.0		*BD2/20191024 taken at 0-0.3m		
	0.4	Pit discontinued at 0.4m; Limit of investigation			0.3				

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP11
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.0				
	0.3	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist			0.3				
				E/B	0.8				
	1.0	Pit discontinued at 1.0m; Limit of investigation			1.0				

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP12
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.3	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist							
		FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.6 - 0.8				
				E/B	1.6 - 1.8				
				E/B	2.6 - 2.8				
				E/B	3.6 - 3.8				
	4.6	SAND SW:fine to medium grained, yellow, moist, aeolian		E/B	4.6 - 4.8				
	5.0	Pit discontinued at 5.0m; Limit of investigation							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP13
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.0				
	0.3	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist			0.3				
				E/B	0.8				
	1				1.0				
	2								
				E/B	2.8				
	3				3.0				
	3.2	Pit discontinued at 3.2m; Limit of investigation							
	4								
	5								
	6								
	7								

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP14
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.0				
	0.3	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.3 0.4 0.5				
	0.8	Pit discontinued at 0.8m; Limit of investigation							

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP15
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, with clay, trace rootlets, dry to moist		E/B	0.0 - 0.3		Irrigation pipe trench with fine to medium igenous gravel fill at 0.4.6m		
	0.4	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.4 - 0.6				
	0.6	Pit discontinued at 0.6m; Limit of investigation							

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP16
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.0 - 0.3				
	0.4	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.4 - 0.5				
	0.6	Pit discontinued at 0.6m; Limit of investigation							

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP17
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.0				
	0.3	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.3 0.4 0.5				
	0.6	Pit discontinued at 0.6m; Limit of investigation							

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP18
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.0				
	0.3	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.3 0.4				
	0.5	Pit discontinued at 0.5m; Limit of investigation			0.5				

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
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TEST PIT LOG

CLIENT: Cranbrook School
PROJECT: In Situ Waste Classification & ENM Assessment
LOCATION: Cranbrook School, Bellevue Hill

SURFACE LEVEL: --
EASTING:
NORTHING:

PIT No: TP23
PROJECT No: 84944.02
DATE: 23/10/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILL/Silty SAND SM: fine to medium grained, brown, trace rootlets, dry to moist		E/B	0.0				
	0.4	FILL/SAND SW: fine to medium grained, yellow-brown mottled grey sand, trace brown-yellow clayey sand (crushed coffee rock), moist		E/B	0.4				
	0.8	SAND SW: fine to medium grained, grey, moist, aeolian		E/B	0.8				
	1.5	Pit discontinued at 1.5m; Limit of investigation			1.0				

RIG: 15t Excavator

LOGGED: JJH

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.13 AHD
EASTING: 338378.84
NORTHING: 6250846.18
DIP/AZIMUTH: 90°/--

BORE No: BH101
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
16	0	TOPSOIL - dark brown, fine to medium silty sand topsoil, moist							A/E			
	0.4	FILLING - yellow-brown, fine to medium sand filling, dry to moist							A/E			
15	1	0.7m: as above, grey-brown and yellow-brown							A			
		1.5m: as above, grey-brown and yellow brown mottled dark brown										
14	2								A/E			
13	3								A/E			
	3.2	SAND - yellow-brown, fine to medium sand, dry to moist										
12	4								A/E			
11	5											
10	6											
9	7											
8	8											
7	9											

RIG: Scout 2 **DRILLER:** JS **LOGGED:** SI/RW **CASING:** HW to 5.4m

TYPE OF BORING: Solid flight auger to 5.5m; Rotary to 14.35m; NMLC-Coring to 17.4m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Standpipe installed to 13.7m (screen 10.7-13.7m; gravel 9.7-13.7m; bentonite 8.7-9.7m; backfill to 0.1m below ground level; grass over gatic cover)

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.13 AHD
EASTING: 338378.84
NORTHING: 6250846.18
DIP/AZIMUTH: 90°/--

BORE No: BH101
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
6	11	SAND - yellow-brown, fine to medium sand, dry to moist *(continued)*						Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°				
5	12											
4	13											
3	14											
2	14.35	SANDSTONE - medium and high strength, moderately weathered, slightly fractured and unbroken, red-brown and brown, medium to coarse grained sandstone						14.7m: B0°, fe 15.2m: B10°, cly vn, ti 15.72 & 15.75m: Cs	C	100	99	PL(A) = 4.14 PL(A) = 0.66 PL(A) = 1.52 PL(A) = 0.91
1	15											
0	16											
-1	17											
	17.4	Bore discontinued at 17.4m										
-2	18											
-3	19											

RIG: Scout 2 **DRILLER:** JS **LOGGED:** SI/RW **CASING:** HW to 5.4m

TYPE OF BORING: Solid flight auger to 5.5m; Rotary to 14.35m; NMLC-Coring to 17.4m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Standpipe installed to 13.7m (screen 10.7-13.7m; gravel 9.7-13.7m; bentonite 8.7-9.7m; backfill to 0.1m below ground level; grass over gatic cover)

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.28 AHD
EASTING: 338374.19
NORTHING: 6250784.3
DIP/AZIMUTH: 90°/--

BORE No: BH102
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
16	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist							A/E			
	0.6	FILLING - dark brown, fine to medium sand filling with clay, dry							A/E			
	1	SAND - dark brown, fine to medium sand, dry to moist (possibly filling)							A/E			
15	1.1	SAND - grey fine to medium sand, dry to moist 1.4m: as above but becoming yellow-brown 1.8m: as above but grey-brown							A/E			
14	2											
13	3											
12	4											
11	5											
10	6											
9	7											
8	8											
7	9											

RIG: Scout 2 **DRILLER:** JS **LOGGED:** SI/RW **CASING:** HW 11.6m

TYPE OF BORING: Solid flight auger (TC-bit) to 5.5m; Rotary to 11.6m; NMLC-Coring to 17.45m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.28 AHD
EASTING: 338374.19
NORTHING: 6250784.3
DIP/AZIMUTH: 90°/--

BORE No: BH102
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
6	11	SAND - grey fine to medium sand, dry to moist *(continued)*						Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°				
5		11.35m: yellow brown, fine to medium grained clayey sand										
4	11.6	SANDSTONE - medium strength, highly weathered, slightly fractured, brown, coarse grained sandstone with some quartz gravel						11.86m: CORE LOSS: 140mm 12.4-12.6M: dS	C	86	50	PL(A) = 0.82
3	12 12.0							12.8m: J60°, pl, ro, cln 12.85m: B0°, cly				PL(A) = 0.23
2	12.4	SANDSTONE - very low and low strength, highly to moderately weathered, slightly fractured, light grey and red-brown, fine to medium grained sandstone with some extremely low strength bands						13.52-13.58m: Ds 13.65m: J60°- 70°, cu, ro, fe	C	100	92	PL(A) = 0.22
1	13											
0	14							14.35m: B0°, cly, 10mm 14.4-14.45m: Cs 14.5-14.62m: B (x3) 0°-5°, fe, cly co				PL(A) = 0.83
-1	14.4	SANDSTONE - medium and medium to high strength, moderately weathered, slightly fractured, brown to red-brown, medium grained sandstone						15.4m: J30°, he				PL(A) = 0.55
	15								C	100	92	
	16							16.15 & 16.42m: B (x2) 5°, fe				PL(A) = 2.87
	17							16.9m: B5°, fe, cly, 10mm				PL(A) = 0.84
-2	17.45	Bore discontinued at 17.45m										
	18											
-3	19											

RIG: Scout 2 **DRILLER:** JS **LOGGED:** SI/RW **CASING:** HW 11.6m

TYPE OF BORING: Solid flight auger (TC-bit) to 5.5m; Rotary to 11.6m; NMLC-Coring to 17.45m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.75 AHD
EASTING: 338361.5
NORTHING: 6250706.3
DIP/AZIMUTH: 90°/--

BORE No: BH103
PROJECT No: 84944.01
DATE: 11/4/2017
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
16	0	TOPSOIL - dark brown, silty clay topsoil with rootlets, dry							A/E			
	0.5	SAND - yellow-brown mottled dark brown, iron indurated, fine to medium sand, dry to moist							A			
15	1								A/E			
	1.3	SAND - yellow-brown, fine to medium sand, dry to moist										
14	2								A/E			
13	3											
12	4											
11	5											
10	6											
9	7							Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°				
8	8											
	8.5	SANDSTONE - medium strength, slightly weathered then fresh stained, fractured and slightly fractured, light grey, medium grained sandstone with some extremely low and very low strength bands and traces of carbonaceous laminations						8.96m: B0°- 5°, un, ro, fe stn 9.45m: J20°, pl, ro, fe stn 9.6m: Cs, 50mm 9.65m: CORE LOSS:	C	93	89	PL(A) = 0.55 PL(A) = 0.43
7	9											
	9.85											

RIG: Scout 2 **DRILLER:** JS **LOGGED:** RW/JN **CASING:** HQ to 8.5m

TYPE OF BORING: Solid flight auger (TC-bit) to 8.5m; NMLC-Coring to 14.4m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.75 AHD
EASTING: 338361.5
NORTHING: 6250706.3
DIP/AZIMUTH: 90°/--

BORE No: BH103
PROJECT No: 84944.01
DATE: 11/4/2017
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
6	11	SANDSTONE - medium strength, slightly weathered then fresh stained, fractured and slightly fractured, light grey, medium grained sandstone with some extremely low and very low strength bands and traces of carbonaceous laminations *(continued)*						200mm 10.10, 10.15m: J45°, un, ro, cln 10.13m: J70°, un, ro, cln 10.26m: Ds, 20mm	C	93	89	PL(A) = 0.7
5	12							11.66m: B0°- 5°, un, ro, cbs, st 11.68m: J0°- 30°, cu, ro, cbs, st 11.97m: J0°- 30°, cu, ro, fe stn				PL(A) = 0.36
4	12.52							12.52m: J30°, pl, ro, cln CORE LOSS: 450mm	C	85	75	PL(A) = 0.31
3	13 12.97											PL(A) = 0.54
2	14							13.68m: Cs, 10mm 13.72, 13.76m: J30°, pl, ro, cln 13.8m: Ds, 50mm 13.88m: Cs, 30mm 14.12m: Cs, 80mm				PL(A) = 0.47
1	14.4	Bore discontinued at 14.4m - target depth reached										
0	15											
-1	16											
-2	17											
-3	18											
	19											

RIG: Scout 2 **DRILLER:** JS **LOGGED:** RW/JN **CASING:** HQ to 8.5m

TYPE OF BORING: Solid flight auger (TC-bit) to 8.5m; NMLC-Coring to 14.4m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.34 AHD
EASTING: 338308.87
NORTHING: 6250760.78
DIP/AZIMUTH: 90°/--

BORE No: BH104
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
16	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, moist							A/E			
		SAND - dark brown mottled brown, iron indurated, fine to medium sand, moist (possibly filling)							A/E			
15	1	0.8m: as above but brown and grey-brown mottled dark brown							A/E			
	1.3	SAND - yellow brown mottled brown and dark brown, grey fine to medium sand, moist										
14	2								A/E			
13	3											
12	4											
11	5					▼						
10	6							Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°				
9	6.8 / 6.9	SANDSTONE - medium strength, moderately weathered, fractured and slightly fractured, light grey and red-brown, medium grained sandstone						6.8m: CORE LOSS: 100mm 7.3-7.45m: B (x3) 0°, cly co, 1-2mm 7.9 & 7.95m: B0°, fe				PL(A) = 0.71 PL(A) = 0.36
8	8.0	SANDSTONE - high strength, fresh, slightly fractured and unbroken, light grey, medium grained sandstone							C	97	90	PL(A) = 1.19
7	9							9.4m: B0°, cly, 5mm	C	100	100	PL(A) = 1.2

RIG: DT100 **DRILLER:** SS **LOGGED:** RW/SI **CASING:** HW to 6.8m

TYPE OF BORING: Solid flight auger (TC-bit) to 5.5m; Rotary to 6.8m; NMLC-Coring to 12.4m

WATER OBSERVATIONS: Free groundwater observed at 5.0m whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.34 AHD
EASTING: 338308.87
NORTHING: 6250760.78
DIP/AZIMUTH: 90°/--

BORE No: BH104
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
11		SANDSTONE - high strength, fresh, slightly fractured and unbroken, light grey, medium grained sandstone *(continued)*										PL(A) = 1.17
									C	100	100	
												PL(A) = 1.01
12								11.9m: B0°, cly, 10mm				
												PL(A) = 1.08
	12.4	Bore discontinued at 12.4m										
13												
14												
15												
16												
17												
18												
19												

RIG: DT100 **DRILLER:** SS **LOGGED:** RW/SI **CASING:** HW to 6.8m

TYPE OF BORING: Solid flight auger (TC-bit) to 5.5m; Rotary to 6.8m; NMLC-Coring to 12.4m

WATER OBSERVATIONS: Free groundwater observed at 5.0m whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.54 AHD
EASTING: 338303.82
NORTHING: 6250703.09
DIP/AZIMUTH: 90°/--

BORE No: BH105
PROJECT No: 84944.01
DATE: 10/4/2017
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
16	0.6	TOPSOIL - dark brown, silty sand topsoil filling with some rootlets, damp							A/E			
		SAND - grey-brown medium sand with some coarse graining, moist (possible filling)				▽			A/E			
15	1.5	SAND - brown to dark brown medium sand, damp (possible filling)							A/E			
14	2.7	SAND - light brown to orange-brown medium sand, damp						Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°	A/E			
13	4.1	4.1m: becoming extremely weathered sandstone										
12	4.15	SANDSTONE - medium strength, moderately to slightly weathered, slightly fractured, light grey-brown to red-brown, medium grained sandstone						4.1m: CORE LOSS: 50mm 4.15-4.3m: Cs 4.35m: J35°, he 4.4m: B20°, pl, ro, cln 4.93, 5.05 & 5.18m: B (x3) 0°- 5°, fe 5.28m: J70°, un, ro, fe 5.44, 5,81, 5.86m: B (x3) 0°- 5°, fe, cly 5.93m: J60° & 85°, st, ro, fe	C	98	84	PL(A) = 0.5 PL(A) = 0.49 PL(A) = 0.31
10	6.75	SANDSTONE - medium and high strength, moderately to slightly weathered and fresh, slightly fractured, light grey-brown, medium grained sandstone						6.63m: J (x2) 70°, un, ro, fe, partially he 6.75-6.77m: Cs 7.16m: J70°, he 7.82m: B0°, cly, 5mm 8.12m: J30°, pl, sm, cln 8.6m: J20°, pl, ro, cln 9.35m: B5°, fe, cly, 5mm 9.45m: J25°, pl, ro, fe 9.85-10.10m: Cs	C	100	91	PL(A) = 1.31 PL(A) = 0.61 PL(A) = 0.49

RIG: Scout 2 **DRILLER:** JS **LOGGED:** RM/SI **CASING:** HQ to 4.1m

TYPE OF BORING: Solid flight auger (TC-bit) to 4.1m; NMLC-Coring to 15.48m

WATER OBSERVATIONS: Some seepage from 0.5m

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.54 AHD
EASTING: 338303.82
NORTHING: 6250703.09
DIP/AZIMUTH: 90°/--

BORE No: BH105
PROJECT No: 84944.01
DATE: 10/4/2017
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
6		SANDSTONE - medium and high strength, moderately to slightly weathered and fresh, slightly fractured, light grey-brown, medium grained sandstone *(continued)*							C	100	91	PL(A) = 0.65
		10.35-10.66m: very low strength						10.45-10.47m: Ds				PL(A) = 0.1
11	10.96	10.66-10.96m: extremely low strength						10.66-10.96m: Ds				
		SANDSTONE - high then medium strength, slightly weathered and fresh, slightly fractured and unbroken, light grey to light grey-brown, medium grained sandstone with some extremely low to very low strength bands										
5								11.7m: J25°, ,pl, ro, cln	C	100	72	PL(A) = 1.26
12								12.15m: J30°, pl, ro, fe, cly				
4								12.22-12.36m: Cs				
								12.4-12.48m: Cs				PL(A) = 1.06
13								12.6m: J70°, pl, ro, cln				
3												PL(A) = 1.26
14								13.86m: B5°, cly, 10mm				
								14.15m: B5°, cbs co	C	100	88	
2												PL(A) = 1.03
15								14.75-14.9m: Cs				
												PL(A) = 0.92
1	15.48	Bore discontinued at 15.48m										
16												
0												
17												
-1												
18												
-2												
19												
-3												

RIG: Scout 2 **DRILLER:** JS **LOGGED:** RM/SI **CASING:** HQ to 4.1m

TYPE OF BORING: Solid flight auger (TC-bit) to 4.1m; NMLC-Coring to 15.48m

WATER OBSERVATIONS: Some seepage from 0.5m

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 38.47 AHD
EASTING: 338318.63
NORTHING: 6250640.39
DIP/AZIMUTH: 90°/--

BORE No: BH106
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
38	0.08	FILLING - brick pavers							A			
	0.3	FILLING - brown silty sand filling with some fine to medium grained sandstone gravel, moist							A			
	0.65	FILLING - sandstone boulder filling							A			
	0.8	FILLING - concrete slab										
37	1	SAND - very loose, light grey medium grained sand, moist							S			1,1,1 N = 2
36	2											
									S			1,1,2 N = 3
35	3											
34	4								S			4,5,5 N = 10
	4.0	SAND - loose, pale yellow medium grained sand, moist										
	5											
33	5.5	SAND - dense, yellow medium grained sand, moist							S			2,3,3 N = 6
32	6											
	7								S			5,10,10 N = 20
31												
30	8								S			6,11,15 N = 26
	9											
29												

RIG: Bobcat **DRILLER:** GM **LOGGED:** JN **CASING:** HW to 8.5m; HQ to 12.45m

TYPE OF BORING: Solid flight auger (TC-bit) to 8.5m; Rotary (mud) to 12.45m; NMLC-Coring to 15.55m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Standpipe installed to 12.5m (screen 9.5-12.5m; gravel 8.5-12.5m; backfill to GL with gatic cover)

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 38.47 AHD
EASTING: 338318.63
NORTHING: 6250640.39
DIP/AZIMUTH: 90°/--

BORE No: BH106
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering	Graphic Log	Rock Strength	Water	Fracture Spacing (m)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
28	11	SAND - dense, yellow medium grained sand, moist *(continued)* 10.0m: becoming wet	EW HW MW SW FS FR		Ex Low Very Low Low Medium High Very High Ex High		0.01 0.05 0.10 0.50 1.00		S			10,17,19 N = 36
27								Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°	S			10,14,18 N = 32
26	12.45	SANDSTONE - medium then low strength, slightly weathered then fresh stained, slightly fractured then unbroken, orange and light grey medium grained sandstone with traces of very low strength bands						12.85-13.08m: J60°-90°, un, ro, cln, partially he 13.08m: Ds, 20mm 13.5, 13.9, 14.06m: B0°-5°, pl, ro, cly, 1mm 14.5m: B5°, pl, ro, fe stn	C	100	99	PL(A) = 0.63 PL(A) = 0.56 PL(A) = 0.53 PL(A) = 0.28
25	13											
24	14											
23	15											
	15.55	Bore discontinued at 15.55m - target depth reached										
22	16											
21	17											
20	18											
19	19											

RIG: Bobcat **DRILLER:** GM **LOGGED:** JN **CASING:** HW to 8.5m; HQ to 12.45m

TYPE OF BORING: Solid flight auger (TC-bit) to 8.5m; Rotary (mud) to 12.45m; NMLC-Coring to 15.55m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Standpipe installed to 12.5m (screen 9.5-12.5m; gravel 8.5-12.5m; backfill to GL with gatic cover)

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 39.22 AHD
EASTING: 338301.69
NORTHING: 6250640.1
DIP/AZIMUTH: 90°/--

BORE No: BH107
PROJECT No: 84944.01
DATE: 13/4/2017
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
39	0.05	FILLING - brick pavers							A			
		FILLING - brown silty sand filling with some fine to medium sandstone gravel, moist							A			
									A			
38	1.0	SAND - very loose then loose, light grey medium grained sand, moist							S			1,1,1 N = 2
37	2											
									S			1,1,1 N = 2
36	3											
35	4							Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°	S			2,3,5 N = 8
									S			10/149mm refusal
34	4.9	SANDSTONE - medium strength, slightly weathered, slightly fractured, orange and light grey medium grained sandstone						5.3m: CORE LOSS: 410mm	C	58	56	PL(A) = 0.48
	5.71							5.73m: CORE LOSS: 180mm				
33	5.91							5.91m: J45°, pl, ro, cln 6.2m: J20°, un, ro, cln				PL(A) = 0.54
32	7							6.8m: J30°, pl, ro, cly, 5mm 6.88m: J45°- 60°, un, ro, cln				
31	8							7.57, 7.64m: J20°, pl, ro, cly, 2mm 8.03-8.35m: J70°, un, ro, fe stn, partially he	C	100	92	PL(A) = 0.46 PL(A) = 0.45
30	9.05	SANDSTONE - medium strength, fresh, slightly fractured then unbroken, light grey medium grained sandstone with traces of carbonaceous laminations						8.93, 8.94m: B10°, pl, ro, cly, 1mm	C	100	100	PL(A) = 0.48

RIG: Bobcat **DRILLER:** GM **LOGGED:** JN **CASING:** HW to 4.9m; HQ to 4.9m

TYPE OF BORING: Solid flight auger (TC-bit) to 4.9m; NMLC-Coring to 14.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 39.22 AHD
EASTING: 338301.69
NORTHING: 6250640.1
DIP/AZIMUTH: 90°/--

BORE No: BH107
PROJECT No: 84944.01
DATE: 13/4/2017
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
29		SANDSTONE - medium strength, fresh, slightly fractured then unbroken, light grey medium grained sandstone with traces of carbonaceous laminations *(continued)*						10.4m: B0°, pl, ro, cly, 1mm 10.54m: Cs, 10mm				PL(A) = 0.5
28	11								C	100	100	
								11.37m: B5°, pl, ro, cly, 2mm				
27	12							11.87m: B5°, pl, ro, fe stn				PL(A) = 0.64
												PL(A) = 0.49
26	13								C	100	100	
												PL(A) = 0.71
	14 14.0	Bore discontinued at 14.0m - target depth reached										
25												
24	15											
23	16											
22	17											
21	18											
20	19											

RIG: Bobcat **DRILLER:** GM **LOGGED:** JN **CASING:** HW to 4.9m; HQ to 4.9m

TYPE OF BORING: Solid flight auger (TC-bit) to 4.9m; NMLC-Coring to 14.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.28 AHD
EASTING: 338412.68
NORTHING: 6250794.55
DIP/AZIMUTH: 90°/--

BORE No: BH111
PROJECT No: 84944.01
DATE: 13/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.3	TOPSOIL - brown medium sand filling with trace red-brown clay and rootlets		A/E	0.1 0.15				
		FILLING - dark brown medium sand filling (possibly natural)		A/E	0.45 0.5				
	0.8	FILLING - pale brown mottled dark brown, medium sand filling (possibly natural)		A/E	1.0 1.05				
15	1								1
				A/E	1.9 2.0				
14	2								2
	2.6	SAND - pale brown and yellow, medium sand, moist		A/E	2.9 3.0				
	3								3
	3.1	Bore discontinued at 3.1m - target depth reached							
13	4								4
12	5								5
11	6								6
10	7								7
9	8								8
8	9								9

RIG: DT100 **DRILLER:** SS **LOGGED:** AT **CASING:** Uncased

TYPE OF BORING: Auger to 3.1m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.61 AHD
EASTING: 338380.55
NORTHING: 6250730.19
DIP/AZIMUTH: 90°/--

BORE No: BH112
PROJECT No: 84944.01
DATE: 11/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.4	TOPSOIL - dark brown, silty clay topsoil with rootlets, dry		A/E	0.1				
		SAND - dark brown mottled yellow-brown, fine to medium grained sand, dry to moist (possibly filling)		A	0.5				
15	1.0	SAND - yellow-brown mottled dark brown, fine to medium sand, dry to moist 1.5m: as above but yellow-brown		A/E	1.0				
14	2.0	Bore discontinued at 2.0m - target depth reached		A/E	2.0				
13	3								
12	4								
11	5								
10	6								
9	7								
8	8								
7	9								

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 2.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.22 AHD
EASTING: 338402.54
NORTHING: 6250814
DIP/AZIMUTH: 90°/--

BORE No: BH113
PROJECT No: 84944.01
DATE: 13/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.2	FILLING - brown, medium grained sand filling (topsoil) with some red-brown clay, traces of rootlets		A/E	0.1 0.15				
		FILLING - dark brown, medium sand filling		A/E	0.5 0.55				
	0.7	FILLING - pale brown mottled dark brown, medium sand filling		A/E	1.0 1.05				
15	1								1
				A/E	1.95 2.0				
14	2								2
	2.3	SAND - pale brown and yellow, medium sand, moist							
13	3			A/E	3.0				3
	3.0	Bore discontinued at 3.0m - target depth reached							
12	4								4
11	5								5
10	6								6
9	7								7
8	8								8
7	9								9

RIG: DT100 **DRILLER:** SS **LOGGED:** AT **CASING:** Uncased

TYPE OF BORING: Auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.40 AHD
EASTING: 338395.64
NORTHING: 6250774.08
DIP/AZIMUTH: 90°/--

BORE No: BH114
PROJECT No: 84944.01
DATE: 11/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, moist		A/E	0.1				
		SAND - dark brown mottled-brown, fine to medium sand, moist (possibly filling)		A/E	0.5				
15	1			A/E	1.0				
	1.8	SAND - dark brown mottled yellow-brown, fine to medium sand with iron indurated pockets, moist		A/E	2.0				
14	2								
	3.0	Bore discontinued at 3.0m - target depth reached		A/E	3.0				
13	3								
12	4								
11	5								
10	6								
9	7								
8	8								
7	9								

RIG: Scout 2 **DRILLER:** JS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.43 AHD
EASTING: 338384.73
NORTHING: 6250747.66
DIP/AZIMUTH: 90°/--

BORE No: BH115
PROJECT No: 84944.01
DATE: 11/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1				
		SAND - grey-brown, fine to medium sand, dry to moist (possibly filling)		A/E	0.5				
	1	0.8m: as above but becoming dark brown and grey-brown		A/E	1.0				1
15	1.1	SAND - pale grey, fine to medium sand, dry to moist							
	2	2.0 Bore discontinued at 2.0m - target depth reached		A/E	2.0				2
14	3								3
13	4								4
12	5								5
11	6								6
10	7								7
9	8								8
8	9								9
7									

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 2.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.45 AHD
EASTING: 338357.98
NORTHING: 6250734.72
DIP/AZIMUTH: 90°/--

BORE No: BH116
PROJECT No: 84944.01
DATE: 11/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1				
	0.7	SAND - dark brown and yellow-brown, fine to medium sand, dry to moist (possibly filling)		A/E	0.5				
15	1	SAND - dark grey, fine to medium sand, moist		A/E	1.0				
		1.5m: as above but becoming pale grey							
	2			A/E	2.0				
14	2.2	SAND - dark brown mottled brown, fine to medium sand, iron indurated, dry to moist							
	3			A/E	3.0				
13	3.0	Bore discontinued at 3.0m - target depth reached							
12	4								
11	5								
10	6								
9	7								
8	8								
7	9								

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.04 AHD
EASTING: 338392.47
NORTHING: 6250837.21
DIP/AZIMUTH: 90°/--

BORE No: BH117
PROJECT No: 84944.01
DATE: 13/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.2	TOPSOIL - grey and dark brown, silty sand filling (topsoil), traces of rootlets		A/E	0.1 0.15				
		FILLING - dark brown, medium sand filling		A/E	0.45 0.5				
15	1			A/E	0.95 1.0				
14	2			A/E	1.95 2.0				
	2.5	FILLING - pale grey and dark brown, medium sand filling							
13	3			A/E	2.95 3.0				
	3.2	SAND - pale grey, brown and brown, medium sand (possibly filling)							
12	4								
	4.0	Bore discontinued at 4.0m - target depth reached							
11	5								
10	6								
9	7								
8	8								
7	9								

RIG: Scout 2 **DRILLER:** JS **LOGGED:** AT **CASING:** Uncased

TYPE OF BORING: Auger to 4.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.14 AHD
EASTING: 338382.59
NORTHING: 6250811.43
DIP/AZIMUTH: 90°/--

BORE No: BH118
PROJECT No: 84944.01
DATE: 13/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.2	TOPSOIL - grey-brown, medium silty sand (topsoil), traces of rootlets, organic odour		A/E	0.1 0.15				
		FILLING - dark brown medium sand filling, traces of silt		A/E	0.45 0.5				
	0.7	SAND - pale brown and yellow, medium sand, moist		A/E	0.95 1.0				
15	1								1
	1.8	SAND - pale brown and brown, medium sand, moist		A/E	1.95 2.0				
14	2								2
	2.5	Bore discontinued at 2.5m - target depth reached							
13	3								3
12	4								4
11	5								5
10	6								6
9	7								7
8	8								8
7	9								9

RIG: DT100 **DRILLER:** SS **LOGGED:** AT **CASING:** Uncased

TYPE OF BORING: Auger to 2.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.38 AHD
EASTING: 338353.07
NORTHING: 6250757.73
DIP/AZIMUTH: 90°/--

BORE No: BH119
PROJECT No: 84944.01
DATE: 10/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1				
	0.6	SAND - grey-brown, fine to medium sand, dry to moist (possibly filling)		A/E	0.5				
	1	SAND - yellow, fine to medium sand, dry to moist 1.0m: as above but dark brown		A/E	1.0				
15		1.5m: as above but grey-brown mottled yellow-brown 1.9m: as above but dark grey							
	2 2.0	Bore discontinued at 2.0m - target depth reached		A/E	2.0				
14	3								
13	4								
12	5								
11	6								
10	7								
9	8								
8	9								
7									

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 2.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.70 AHD
EASTING: 338333.04
NORTHING: 6250703.65
DIP/AZIMUTH: 90°/--

BORE No: BH120
PROJECT No: 84944.01
DATE: 11/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A	0.1				
		SAND - brown-yellow, fine to medium sand, dry to moist (possibly filling)		A	0.5				
	0.7	SAND - dark brown and yellow-brown, fine to medium sand, iron indurated, dry to moist		A	1.0				
15	1			E	1.5				
	2.0	Bore discontinued at 2.0m - target depth reached		A/E	2.0				
14	2								
	3								
13	4								
	5								
12	6								
	7								
11	8								
	9								
10									
9									
8									
7									

RIG: Scout 2 **DRILLER:** JS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 2.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.11 AHD
EASTING: 338357.75
NORTHING: 6250821.77
DIP/AZIMUTH: 90°/--

BORE No: BH121
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1				
		FILLING - yellow-brown fine to medium sand filling, dry to moist		A/E	0.5				
	0.75	SAND - yellow-brown and grey-brown mottled dark brown, fine to medium sand, dry to moist (possibly filling)		A/E	1.0				
15	1								1
14	2			A/E	2.0				2
	2.2	SAND - yellow-brown, fine to medium sand, dry to moist							
13	3			A/E	3.0				3
	3.0	Bore discontinued at 3.0m - target depth reached							
12	4								4
11	5								5
10	6								6
9	7								7
8	8								8
7	9								9

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.22 AHD
EASTING: 338349.17
NORTHING: 6250799.56
DIP/AZIMUTH: 90°/--

BORE No: BH122
PROJECT No: 84944.01
DATE: 11/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.3	FILLING - dark brown, fine to medium silty sand filling, dry to moist		A/E	0.1				
		SAND - dark brown mottled grey, fine to medium sand, dry to moist (possibly filling)		A/E	0.5				
15	1.2	SAND - yellow-brown, fine to medium sand, dry to moist		A/E	1.0				
14	2.0	Bore discontinued at 2.0m - target depth reached		A/E	2.0				

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 2.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.31 AHD
EASTING: 338341.92
NORTHING: 6250774.57
DIP/AZIMUTH: 90°/--

BORE No: BH123
PROJECT No: 84944.01
DATE: 11/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1				
		SAND - grey-brown, fine to medium sand, dry to moist (possibly filling)		A/E	0.5				
	0.7	SAND - dark brown, fine to medium sand, iron indurated, dry to moist		A/E	1.0				
15	1.5	SAND - yellow-brown, fine to medium sand, dry to moist							
14	2.0	Bore discontinued at 2.0m - target depth reached		A/E	2.0				
13									
12									
11									
10									
9									
8									
7									

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 2.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.51 AHD
EASTING: 338327.48
NORTHING: 6250748.48
DIP/AZIMUTH: 90°/--

BORE No: BH124
PROJECT No: 84944.01
DATE: 10/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A	0.1				
		SAND - grey-brown, fine to medium sand, dry to moist (possible filling)		A/E	0.5				
	0.75	SAND - grey-brown mottled yellow-brown, fine to medium sand with occasional dark brown pockets of iron indurated sand, dry to moist		A	1.0				
15	1								1
	2.0	Bore discontinued at 2.0m - target depth reached		A/E	2.0				2
14	2								
	3								3
13									
	4								4
12									
	5								5
11									
	6								6
10									
	7								7
9									
	8								8
8									
	9								9
7									

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 2.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.50 AHD
EASTING: 338319.11
NORTHING: 6250727.97
DIP/AZIMUTH: 90°/--

BORE No: BH125
PROJECT No: 84944.01
DATE: 10/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A	0.1				
		SAND - dark brown and grey-brown, fine to medium sand, dry to moist (possibly filling)		A	0.5				
	0.7	SAND - grey mottled yellow-brown, fine to medium sand, dry to moist		A/E	1.0				
15	1	1.2m: as above but yellow-brown mottled brown							
	2 2.0	Bore discontinued at 2.0m - target depth reached		A/E	2.0				
14	3								
13	4								
12	5								
11	6								
10	7								
9	8								
8	9								
7									

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 2.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.10 AHD
EASTING: 338357.72
NORTHING: 6250849.98
DIP/AZIMUTH: 90°/--

BORE No: BH126
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, trace gravel, dry to moist		A/E	0.1				
		FILLING - yellow brown, fine to medium sand filling, dry to moist		A/E	0.5				
15	1	1.3m: as above but grey-brown		A/E	1.0				1
14	2	2.4m: as above but becoming grey-brown and dark brown		A/E	2.0				2
13	3			A/E	3.0				3
	3.4	SAND - yellow-brown, fine to medium sand, moist							
12	4	4.0 Bore discontinued at 4.0m - target depth reached		A	4.0				4
11	5								5
10	6								6
9	7								7
8	8								8
7	9								9

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 4.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.07 AHD
EASTING: 338330.67
NORTHING: 6250807.63
DIP/AZIMUTH: 90°/--

BORE No: BH127
PROJECT No: 84944.01
DATE: 11/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1				
		SAND - dark brown mottled yellow-brown, fine to medium sand with iron indurated pockets, dry to moist (possibly filling)		A/E	0.5				
15	1			A/E	1.0				1
	1.2	SAND - yellow-brown, fine to medium sand, moist							
14	2			A/E	2.0				2
	2.0	Bore discontinued at 2.0m - target depth reached							
13	3								3
12	4								4
11	5								5
10	6								6
9	7								7
8	8								8
7	9								9

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 2.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 15.95 AHD
EASTING: 338327.14
NORTHING: 6250830.2
DIP/AZIMUTH: 90°/--

BORE No: BH128
PROJECT No: 84944.01
DATE: 12/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
15	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, moist		A/E	0.1				
		FILLING - yellow-brown mottled dark brown, fine to medium sand filling, dry to moist		A/E	0.5				
	1			A/E	1.0				1
14	1.4	SAND - mottled yellow-brown, dark brown and grey-brown, fine to medium sand, dry to moist (possibly filling)							
	2			A/E	2.0				2
13	2.2	SAND - yellow-brown, fine to medium grained sand, dry to moist							
	3			A/E	3.0				3
	3.0	Bore discontinued at 3.0m - target depth reached							
12	4								4
11	5								5
10	6								6
9	7								7
8	8								8
7	9								9

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.35 AHD
EASTING: 338293.77
NORTHING: 6250744.3
DIP/AZIMUTH: 90°/--

BORE No: BH129
PROJECT No: 84944.01
DATE: 10/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1				
		SAND - grey-dark brown, fine to medium sand, dry to moist (possibly filling)		A/E	0.5				
	1			A/E	1.0				1
15	1.2	SAND - mottled grey-brown and yellow-brown sand with pockets of iron induration, moist							
	2			A/E	2.0				2
14		2.5m: as above but grey-brown							
	3			A	3.0				3
13	3.5	SAND - yellow-brown, fine to medium sand with clay, wet							
		3.9m: as above but pale-grey							
12	4	4.0 Bore discontinued at 4.0m - target depth reached		A	4.0				4
11	5								5
10	6								6
9	7								7
8	8								8
7	9								9

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 4.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Cranbrook School ECI
LOCATION: New South Head Road, Bellevue Hill

SURFACE LEVEL: 16.44 AHD
EASTING: 338282.32
NORTHING: 6250716.51
DIP/AZIMUTH: 90°/--

BORE No: BH130
PROJECT No: 84944.01
DATE: 10/4/2017
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
16	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1				
		SAND - yellow-brown mottled dark brown, fine to medium sand, dry to moist (possible filling)		A	0.5				
	1	1.0m: as above but dark brown		A/E	1.0				1
15	1.3	SAND - yellow-brown and grey-brown, fine to medium sand with clay, wet							
	2	2.0 Bore discontinued at 2.0m - target depth reached		A/E	2.0				2
14	3								3
13	4								4
12	5								5
11	6								6
10	7								7
9	8								8
8	9								9
7									

RIG: DT100 **DRILLER:** SS **LOGGED:** RW **CASING:** Uncased

TYPE OF BORING: Auger to 2.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Stage 1 Development
LOCATION: Victoria Road, Bellevue Hill

SURFACE LEVEL: 16.10 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 2
PROJECT No: 84944
DATE: 7/7/2015
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
16	0.15	TOPSOIL - dark brown, silty sand topsoil with trace rootlets, damp										
		FILLING - poorly compacted, dark brown and light grey-brown mottled, silty sand, damp							E			
15	1								S			1,0,1 N = 1
									E			
14	2											
									S			0,0,1 N = 1
13	3								E			
									E			
12	4								S			1,1,1 N = 2
	4.85	SAND - light yellow-brown, medium grained sand, damp										
11	5								E			
10	6											
9	7											
8	8											
7	9											

RIG: Bobcat **DRILLER:** SY **LOGGED:** MP/SI **CASING:** HQ to 9.5m

TYPE OF BORING: Solid flight auger to 9.5m; Rotary to 11.25m; NMLC-Coring to 14.3m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Stage 1 Development
LOCATION: Victoria Road, Bellevue Hill

SURFACE LEVEL: 16.10 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 2
PROJECT No: 84944
DATE: 7/7/2015
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
6		SAND - light yellow-brown, medium grained sand, damp *(continued)*						Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°				
5	10.85	SILTY CLAY - light grey, silty clay										
4	11.25	SANDSTONE - medium and medium to high strength, moderately weathered then fresh, slightly fractured and unbroken, red-brown then light grey-brown, medium grained sandstone with some very low strength bands						12.34-12.37m: Cs 12.58-12.60m: fg	C	100	86	PL(A) = 0.5 PL(A) = 0.7
3	13											PL(A) = 1.2
2	14	13.85-14.15m: very low strength siltstone bands						13.83m: J65°, un, ro, cly 14.1m: B5°, cly co 14.15m: J30°, pl, sm, cly				PL(A) = 0.4
1	14.3	Bore discontinued at 14.3m										
0	15											
-1	16											
-2	17											
-3	18											
	19											

RIG: Bobcat **DRILLER:** SY **LOGGED:** MP/SI **CASING:** HQ to 9.5m

TYPE OF BORING: Solid flight auger to 9.5m; Rotary to 11.25m; NMLC-Coring to 14.3m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Stage 1 Development
LOCATION: Victoria Road, Bellevue Hill

SURFACE LEVEL: 16.35 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 4
PROJECT No: 84944
DATE: 3/7/2015
SHEET 1 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
16	0.0	TOPSOIL - dark brown, silty sand topsoil with trace rootlets, damp							E			
	0.6	FILLING - dark brown and grey-brown, silty sand filling, damp										
15	1								S			2,2,3 N = 5
14	2	- becoming slightly silty and yellow-brown mottled below 2.0m							E			
									S			3,4,4 N = 8
13	3								E			
	4	4.0-4.5m: trace organic material							E			
12									S			1,2,3 N = 5
	4.5	SILTY SAND - brown and brown-grey, fine to medium grained sand, damp										
11	5											
	6											
10												
	7											
9	7.0	SAND - yellow-brown, medium grained sand, damp										
	8											
8												
	9											
7												

RIG: Bobcat **DRILLER:** SY **LOGGED:** MP/SI **CASING:** HW to 11.5m

TYPE OF BORING: Solid flight auger to 9.5m; Rotary to 18.0m; NMLC-Coring to 21.1m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U$_x$	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Stage 1 Development
LOCATION: Victoria Road, Bellevue Hill

SURFACE LEVEL: 16.35 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 4
PROJECT No: 84944
DATE: 3/7/2015
SHEET 2 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
		SAND - yellow-brown, medium grained sand, damp *(continued)*										
	16.8	SILTY CLAY - light grey, silty clay						Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°				
	17.9 18.0	SANDSTONE - very low strength, light grey-brown, fine to medium grained sandstone										
		SANDSTONE - low and medium strength, highly to moderately then slightly weathered, slightly fractured, red-brown then light brown, medium grained sandstone with some very low strength bands						18.27 & 18.46m: B (x2) 5°- 10°, cly vn, ti 19.2m: B10°, fe, cly 19.5-19.55m: Cs	C	100	91	PL(A) = 0.5 PL(A) = 0.2

RIG: Bobcat **DRILLER:** SY **LOGGED:** MP/SI **CASING:** HW to 11.5m

TYPE OF BORING: Solid flight auger to 9.5m; Rotary to 18.0m; NMLC-Coring to 21.1m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cranbrook School
PROJECT: Stage 1 Development
LOCATION: Victoria Road, Bellevue Hill

SURFACE LEVEL: 16.35 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 4
PROJECT No: 84944
DATE: 3/7/2015
SHEET 3 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
-4	21	SANDSTONE - low and medium strength, highly to moderately then slightly weathered, slightly fractured, red-brown then light brown, medium grained sandstone with some very low strength bands *(continued)*						20.2m: B10°, cly vn, ti 20.45m: J70°, pl, ro, fe, cly 20.82m: B0°, cly	C	100	91	PL(A) = 0.5 PL(A) = 0.4
-5	21.1	Bore discontinued at 21.1m										
-6	22											
-7	23											
-8	24											
-9	25											
-10	26											
-11	27											
-12	28											
-13	29											

RIG: Bobcat **DRILLER:** SY **LOGGED:** MP/SI **CASING:** HW to 11.5m

TYPE OF BORING: Solid flight auger to 9.5m; Rotary to 18.0m; NMLC-Coring to 21.1m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

Current and Previous Laboratory Test Results

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
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www.envirolab.com.au

CERTIFICATE OF ANALYSIS 229219

Client Details

Client	Douglas Partners Pty Ltd
Attention	Joel James-Hall, Peter Oitmaa
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84944.02, Cranbrook School In-Situ Assessment**
Number of Samples	26 Soil
Date samples received	24/10/2019
Date completed instructions received	24/10/2019

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	29/10/2019
Date of Issue	29/10/2019

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Aida Marner
Authorised by Asbestos Approved Signatory: Lucy Zhu

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Josh Williams, Chemist
Loren Bardwell, Senior Chemist
Lucy Zhu, Senior Asbestos Analyst
Priya Samarawickrama, Senior Chemist
Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		229219-1	229219-2	229219-3	229219-4	229219-5
Your Reference	UNITS	TP1/0-0.3	TP2/0.4-0.5	TP3/0.4-0.5	TP4/0.4-0.5	TP8/1.6-1.8
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	77	71	82	86	81

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		229219-6	229219-7	229219-8	229219-9	229219-10
Your Reference	UNITS	TP8/4.6-4.8	TP9/0-0.3	TP10/0-0.3	TP11/0-0.3	TP11/1.8-1.0
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	73	84	72	70	88

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		229219-11	229219-12	229219-13	229219-14	229219-15
Your Reference	UNITS	TP12/1.6-1.8	TP12/3.6-3.8	TP13/0-0.3	TP13/2.8-3.0	TP14/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	67	86	88	65	85

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		229219-16	229219-17	229219-18	229219-19	229219-20
Your Reference	UNITS	TP15/0.4-0.6	TP16/0.4-0.6	TP17/0-0.3	TP17/0.4-0.5	TP18/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	77	83	87	87	89

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		229219-21	229219-22	229219-23	229219-24
Your Reference	UNITS	TP23/0-0.3	TP23/0.4-0.6	BD1/20191023	BD2/20191023
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	76	87	86	80

svTRH (C10-C40) in Soil						
Our Reference		229219-1	229219-2	229219-3	229219-4	229219-5
Your Reference	UNITS	TP1/0-0.3	TP2/0.4-0.5	TP3/0.4-0.5	TP4/0.4-0.5	TP8/1.6-1.8
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	101	99	98	99	96

svTRH (C10-C40) in Soil						
Our Reference		229219-6	229219-7	229219-8	229219-9	229219-10
Your Reference	UNITS	TP8/4.6-4.8	TP9/0-0.3	TP10/0-0.3	TP11/0-0.3	TP11/1.8-1.0
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	98	103	118	98	97

svTRH (C10-C40) in Soil						
Our Reference		229219-11	229219-12	229219-13	229219-14	229219-15
Your Reference	UNITS	TP12/1.6-1.8	TP12/3.6-3.8	TP13/0-0.3	TP13/2.8-3.0	TP14/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	97	96	99	112	97

svTRH (C10-C40) in Soil						
Our Reference		229219-16	229219-17	229219-18	229219-19	229219-20
Your Reference	UNITS	TP15/0.4-0.6	TP16/0.4-0.6	TP17/0-0.3	TP17/0.4-0.5	TP18/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	29/10/2019	29/10/2019	29/10/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	98	97	100	99	98

svTRH (C10-C40) in Soil					
Our Reference		229219-21	229219-22	229219-23	229219-24
Your Reference	UNITS	TP23/0-0.3	TP23/0.4-0.6	BD1/20191023	BD2/20191023
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50
Surrogate o-Terphenyl	%	112	96	99	97

PAHs in Soil						
Our Reference		229219-1	229219-2	229219-3	229219-4	229219-5
Your Reference	UNITS	TP1/0-0.3	TP2/0.4-0.5	TP3/0.4-0.5	TP4/0.4-0.5	TP8/1.6-1.8
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.05	<0.05	0.1	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.05	<0.05	1.0	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	122	123	121	118	110

PAHs in Soil						
Our Reference		229219-6	229219-7	229219-8	229219-9	229219-10
Your Reference	UNITS	TP8/4.6-4.8	TP9/0-0.3	TP10/0-0.3	TP11/0-0.3	TP11/1.8-1.0
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.2	<0.1	0.3	<0.1
Pyrene	mg/kg	<0.1	0.2	<0.1	0.3	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.1	<0.1	0.1	<0.1
Chrysene	mg/kg	<0.1	0.1	<0.1	0.2	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.2	<0.05	0.2	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.1	<0.1	0.2	<0.1
Total +ve PAH's	mg/kg	<0.05	0.92	<0.05	1.8	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	119	116	100	128	110

PAHs in Soil						
Our Reference		229219-11	229219-12	229219-13	229219-14	229219-15
Your Reference	UNITS	TP12/1.6-1.8	TP12/3.6-3.8	TP13/0-0.3	TP13/2.8-3.0	TP14/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.2	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	1.4	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	115	110	105	118	123

PAHs in Soil						
Our Reference		229219-16	229219-17	229219-18	229219-19	229219-20
Your Reference	UNITS	TP15/0.4-0.6	TP16/0.4-0.6	TP17/0-0.3	TP17/0.4-0.5	TP18/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.05	<0.05	0.05	0.08	0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.05	<0.05	0.05	0.3	0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	94	97	97	100	124

PAHs in Soil					
Our Reference		229219-21	229219-22	229219-23	229219-24
Your Reference	UNITS	TP23/0-0.3	TP23/0.4-0.6	BD1/20191023	BD2/20191023
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.06	<0.05	<0.05	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.2	<0.05	<0.05	0.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	114	118	117	117

Organochlorine Pesticides in soil						
Our Reference		229219-1	229219-3	229219-4	229219-7	229219-8
Your Reference	UNITS	TP1/0-0.3	TP3/0.4-0.5	TP4/0.4-0.5	TP9/0-0.3	TP10/0-0.3
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	111	116	108	106	116

Organochlorine Pesticides in soil						
Our Reference		229219-9	229219-13	229219-15	229219-16	229219-18
Your Reference	UNITS	TP11/0-0.3	TP13/0-0.3	TP14/0.4-0.5	TP15/0.4-0.6	TP17/0-0.3
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	130	117	122	118	112

Organochlorine Pesticides in soil		
Our Reference		229219-21
Your Reference	UNITS	TP23/0-0.3
Date Sampled		23/10/2019
Type of sample		Soil
Date extracted	-	28/10/2019
Date analysed	-	29/10/2019
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	107

Organophosphorus Pesticides in Soil						
Our Reference		229219-1	229219-3	229219-4	229219-7	229219-8
Your Reference	UNITS	TP1/0-0.3	TP3/0.4-0.5	TP4/0.4-0.5	TP9/0-0.3	TP10/0-0.3
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	111	116	108	106	116

Organophosphorus Pesticides in Soil						
Our Reference		229219-9	229219-13	229219-15	229219-16	229219-18
Your Reference	UNITS	TP11/0-0.3	TP13/0-0.3	TP14/0.4-0.5	TP15/0.4-0.6	TP17/0-0.3
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	130	117	122	118	112

Organophosphorus Pesticides in Soil		
Our Reference		229219-21
Your Reference	UNITS	TP23/0-0.3
Date Sampled		23/10/2019
Type of sample		Soil
Date extracted	-	28/10/2019
Date analysed	-	29/10/2019
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Parathion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Ethion	mg/kg	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1
Surrogate TCMX	%	107

PCBs in Soil						
Our Reference		229219-1	229219-3	229219-4	229219-7	229219-8
Your Reference	UNITS	TP1/0-0.3	TP3/0.4-0.5	TP4/0.4-0.5	TP9/0-0.3	TP10/0-0.3
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	111	116	108	106	116

PCBs in Soil						
Our Reference		229219-9	229219-13	229219-15	229219-16	229219-18
Your Reference	UNITS	TP11/0-0.3	TP13/0-0.3	TP14/0.4-0.5	TP15/0.4-0.6	TP17/0-0.3
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	130	117	122	118	112

PCBs in Soil		
Our Reference		229219-21
Your Reference	UNITS	TP23/0-0.3
Date Sampled		23/10/2019
Type of sample		Soil
Date extracted	-	28/10/2019
Date analysed	-	29/10/2019
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	107

Acid Extractable metals in soil						
Our Reference		229219-1	229219-2	229219-3	229219-4	229219-5
Your Reference	UNITS	TP1/0-0.3	TP2/0.4-0.5	TP3/0.4-0.5	TP4/0.4-0.5	TP8/1.6-1.8
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Arsenic	mg/kg	9	7	<4	<4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	2	2	3	2	1
Copper	mg/kg	4	3	2	3	<1
Lead	mg/kg	5	4	6	6	1
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	1	2	<1	<1
Zinc	mg/kg	9	7	5	7	2

Acid Extractable metals in soil						
Our Reference		229219-6	229219-7	229219-8	229219-9	229219-10
Your Reference	UNITS	TP8/4.6-4.8	TP9/0-0.3	TP10/0-0.3	TP11/0-0.3	TP11/1.8-1.0
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Arsenic	mg/kg	<4	<4	6	8	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	4	4	4	1
Copper	mg/kg	<1	6	5	9	2
Lead	mg/kg	1	10	10	20	<1
Mercury	mg/kg	<0.1	<0.1	0.1	0.1	<0.1
Nickel	mg/kg	<1	2	2	2	<1
Zinc	mg/kg	3	13	14	12	14

Acid Extractable metals in soil						
Our Reference		229219-11	229219-12	229219-13	229219-14	229219-15
Your Reference	UNITS	TP12/1.6-1.8	TP12/3.6-3.8	TP13/0-0.3	TP13/2.8-3.0	TP14/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Arsenic	mg/kg	8	<4	7	<4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	2	3	<1	2
Copper	mg/kg	<1	<1	7	<1	4
Lead	mg/kg	1	1	17	<1	6
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	2	<1	<1
Zinc	mg/kg	2	<1	13	<1	4

Acid Extractable metals in soil						
Our Reference		229219-16	229219-17	229219-18	229219-19	229219-20
Your Reference	UNITS	TP15/0.4-0.6	TP16/0.4-0.6	TP17/0-0.3	TP17/0.4-0.5	TP18/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Arsenic	mg/kg	<4	<4	5	6	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	2	1	7	3	<1
Copper	mg/kg	4	2	6	9	7
Lead	mg/kg	8	3	12	11	12
Mercury	mg/kg	<0.1	<0.1	0.1	0.2	<0.1
Nickel	mg/kg	1	<1	2	1	<1
Zinc	mg/kg	5	4	13	11	4

Acid Extractable metals in soil					
Our Reference		229219-21	229219-22	229219-23	229219-24
Your Reference	UNITS	TP23/0-0.3	TP23/0.4-0.6	BD1/20191023	BD2/20191023
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Arsenic	mg/kg	10	4	<4	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	1	4	4
Copper	mg/kg	8	<1	6	7
Lead	mg/kg	17	3	10	15
Mercury	mg/kg	0.2	<0.1	<0.1	0.1
Nickel	mg/kg	2	<1	2	2
Zinc	mg/kg	19	2	14	15

Misc Soil - Inorg						
Our Reference		229219-1	229219-3	229219-4	229219-7	229219-8
Your Reference	UNITS	TP1/0-0.3	TP3/0.4-0.5	TP4/0.4-0.5	TP9/0-0.3	TP10/0-0.3
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		229219-9	229219-13	229219-15	229219-16	229219-18
Your Reference	UNITS	TP11/0-0.3	TP13/0-0.3	TP14/0.4-0.5	TP15/0.4-0.6	TP17/0-0.3
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg		
Our Reference		229219-21
Your Reference	UNITS	TP23/0-0.3
Date Sampled		23/10/2019
Type of sample		Soil
Date prepared	-	28/10/2019
Date analysed	-	28/10/2019
Total Phenolics (as Phenol)	mg/kg	<5

Misc Inorg - Soil						
Our Reference		229219-1	229219-2	229219-3	229219-4	229219-5
Your Reference	UNITS	TP1/0-0.3	TP2/0.4-0.5	TP3/0.4-0.5	TP4/0.4-0.5	TP8/1.6-1.8
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
pH 1:5 soil:water	pH Units	5.9	6.5	6.0	6.4	6.3
Electrical Conductivity 1:5 soil:water	µS/cm	32	22	14	16	9

Misc Inorg - Soil						
Our Reference		229219-6	229219-7	229219-8	229219-9	229219-10
Your Reference	UNITS	TP8/4.6-4.8	TP9/0-0.3	TP10/0-0.3	TP11/0-0.3	TP11/1.8-1.0
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
pH 1:5 soil:water	pH Units	5.9	6.2	6.6	5.9	5.6
Electrical Conductivity 1:5 soil:water	µS/cm	11	16	16	23	8

Misc Inorg - Soil						
Our Reference		229219-11	229219-12	229219-13	229219-14	229219-15
Your Reference	UNITS	TP12/1.6-1.8	TP12/3.6-3.8	TP13/0-0.3	TP13/2.8-3.0	TP14/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
pH 1:5 soil:water	pH Units	6.1	5.8	5.9	5.5	6.1
Electrical Conductivity 1:5 soil:water	µS/cm	10	12	20	12	12

Misc Inorg - Soil						
Our Reference		229219-16	229219-17	229219-18	229219-19	229219-20
Your Reference	UNITS	TP15/0.4-0.6	TP16/0.4-0.6	TP17/0-0.3	TP17/0.4-0.5	TP18/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
pH 1:5 soil:water	pH Units	6.4	6.3	5.8	6.0	6.4
Electrical Conductivity 1:5 soil:water	µS/cm	31	12	25	10	11

Misc Inorg - Soil			
Our Reference		229219-21	229219-22
Your Reference	UNITS	TP23/0-0.3	TP23/0.4-0.6
Date Sampled		23/10/2019	23/10/2019
Type of sample		Soil	Soil
Date prepared	-	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019
pH 1:5 soil:water	pH Units	6.7	6.4
Electrical Conductivity 1:5 soil:water	µS/cm	20	13

Moisture						
Our Reference		229219-1	229219-2	229219-3	229219-4	229219-5
Your Reference	UNITS	TP1/0-0.3	TP2/0.4-0.5	TP3/0.4-0.5	TP4/0.4-0.5	TP8/1.6-1.8
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Moisture	%	0.2	6.2	0.2	0.5	3.8

Moisture						
Our Reference		229219-6	229219-7	229219-8	229219-9	229219-10
Your Reference	UNITS	TP8/4.6-4.8	TP9/0-0.3	TP10/0-0.3	TP11/0-0.3	TP11/1.8-1.0
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Moisture	%	3.7	0.6	1.3	5.6	0.6

Moisture						
Our Reference		229219-11	229219-12	229219-13	229219-14	229219-15
Your Reference	UNITS	TP12/1.6-1.8	TP12/3.6-3.8	TP13/0-0.3	TP13/2.8-3.0	TP14/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Moisture	%	3.4	4.1	1.6	0.6	0.1

Moisture						
Our Reference		229219-16	229219-17	229219-18	229219-19	229219-20
Your Reference	UNITS	TP15/0.4-0.6	TP16/0.4-0.6	TP17/0-0.3	TP17/0.4-0.5	TP18/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019	29/10/2019	29/10/2019	29/10/2019
Moisture	%	2.7	0.3	0.7	0.3	<0.1

Moisture			
Our Reference		229219-21	229219-22
Your Reference	UNITS	TP23/0-0.3	TP23/0.4-0.6
Date Sampled		23/10/2019	23/10/2019
Type of sample		Soil	Soil
Date prepared	-	28/10/2019	28/10/2019
Date analysed	-	29/10/2019	29/10/2019
Moisture	%	5.6	2.0

Asbestos ID - soils NEPM						
Our Reference		229219-4	229219-5	229219-7	229219-10	229219-13
Your Reference	UNITS	TP4/0.4-0.5	TP8/1.6-1.8	TP9/0-0.3	TP11/1.8-1.0	TP13/0-0.3
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Sample mass tested	g	1,477.34	1,466.87	1,404.91	1,571.3	1,320.09
Sample Description	-	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM						
Our Reference		229219-16	229219-18	229219-19	229219-21	229219-25
Your Reference	UNITS	TP15/0.4-0.6	TP17/0-0.3	TP17/0.4-0.5	TP23/0-0.3	TP2/0-0.3
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Sample mass tested	g	1,442.2	1,456.99	1,474.9	1,435.79	1,512.9
Sample Description	-	Grey rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

RTA276 ENM* Foreign Material						
Our Reference		229219-1	229219-2	229219-3	229219-4	229219-5
Your Reference	UNITS	TP1/0-0.3	TP2/0.4-0.5	TP3/0.4-0.5	TP4/0.4-0.5	TP8/1.6-1.8
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Sample Mass Tested	g	4,900	6,400	3,800	4,500	3,000
Foreign Material	%	<0.05	<0.05	<0.05	<0.05	<0.05

RTA276 ENM* Foreign Material						
Our Reference		229219-6	229219-7	229219-8	229219-9	229219-10
Your Reference	UNITS	TP8/4.6-4.8	TP9/0-0.3	TP10/0-0.3	TP11/0-0.3	TP11/1.8-1.0
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Sample Mass Tested	g	5,000	5,600	6,100	3,500	4,500
Foreign Material	%	<0.05	<0.05	<0.05	<0.05	<0.05

RTA276 ENM* Foreign Material						
Our Reference		229219-11	229219-12	229219-13	229219-14	229219-15
Your Reference	UNITS	TP12/1.6-1.8	TP12/3.6-3.8	TP13/0-0.3	TP13/2.8-3.0	TP14/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Sample Mass Tested	g	5,100	5,900	4,700	5,400	5,200
Foreign Material	%	<0.05	<0.05	<0.05	<0.05	<0.05

RTA276 ENM* Foreign Material						
Our Reference		229219-16	229219-17	229219-18	229219-19	229219-20
Your Reference	UNITS	TP15/0.4-0.6	TP16/0.4-0.6	TP17/0-0.3	TP17/0.4-0.5	TP18/0.4-0.5
Date Sampled		23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019	28/10/2019	28/10/2019	28/10/2019
Sample Mass Tested	g	4,300	6,800	5,600	4,200	5,500
Foreign Material	%	<0.05	<0.05	<0.05	<0.05	<0.05

RTA276 ENM* Foreign Material			
Our Reference		229219-21	229219-22
Your Reference	UNITS	TP23/0-0.3	TP23/0.4-0.6
Date Sampled		23/10/2019	23/10/2019
Type of sample		Soil	Soil
Date prepared	-	28/10/2019	28/10/2019
Date analysed	-	28/10/2019	28/10/2019
Sample Mass Tested	g	5,800	6,000
Foreign Material	%	<0.05	<0.05

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
AT-008	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-080 ENM	This method is based on RTA T276 and as per NSW DECC Resource Recovery Exemption Guidelines and correspondence. It includes rubber, plastic, bitumen, paper, cloth, paint and wood (Note wood is construction timber only, naturally occuring wood/twigs/roots are excluded). RTA T276 requires at least 6kg of sample for this test.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.

Method ID	Methodology Summary
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS.
Org-012/017	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS and/or GC-MS/MS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.
RTA276	RTA 276 - Modified to Environmental Operations (Waste) - 2005 General Exemption under Part 6, Clause 51A.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	229219-3
Date extracted	-			28/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			29/10/2019	1	29/10/2019	29/10/2019		29/10/2019	29/10/2019
TRH C_6 - C_9	mg/kg	25	Org-016	<25	1	<25	<25	0	73	84
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	1	<25	<25	0	73	84
Benzene	mg/kg	0.2	Org-016	<0.2	1	<0.2	<0.2	0	72	84
Toluene	mg/kg	0.5	Org-016	<0.5	1	<0.5	<0.5	0	75	73
Ethylbenzene	mg/kg	1	Org-016	<1	1	<1	<1	0	74	88
m+p-xylene	mg/kg	2	Org-016	<2	1	<2	<2	0	73	87
o-Xylene	mg/kg	1	Org-016	<1	1	<1	<1	0	72	87
naphthalene	mg/kg	1	Org-014	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	85	1	77	70	10	80	78

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	229219-22
Date extracted	-			[NT]	13	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			[NT]	13	29/10/2019	29/10/2019		29/10/2019	29/10/2019
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	13	<25	<25	0	80	80
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	13	<25	<25	0	80	80
Benzene	mg/kg	0.2	Org-016	[NT]	13	<0.2	<0.2	0	80	78
Toluene	mg/kg	0.5	Org-016	[NT]	13	<0.5	<0.5	0	84	94
Ethylbenzene	mg/kg	1	Org-016	[NT]	13	<1	<1	0	80	77
m+p-xylene	mg/kg	2	Org-016	[NT]	13	<2	<2	0	78	75
o-Xylene	mg/kg	1	Org-016	[NT]	13	<1	<1	0	78	76
naphthalene	mg/kg	1	Org-014	[NT]	13	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	13	88	89	1	89	85

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	28/10/2019	28/10/2019		[NT]	[NT]
Date analysed	-			[NT]	21	29/10/2019	29/10/2019		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	21	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	21	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	21	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	21	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	21	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	21	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	21	76	91	18	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	229219-3
Date extracted	-			28/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			29/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	1	<50	<50	0	107	124
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	1	<100	<100	0	112	130
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	1	<100	<100	0	121	107
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	1	<50	<50	0	107	124
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	1	<100	<100	0	112	130
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	1	<100	<100	0	121	107
Surrogate o-Terphenyl	%		Org-003	98	1	101	104	3	107	120

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	229219-22
Date extracted	-			[NT]	13	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			[NT]	13	28/10/2019	28/10/2019		29/10/2019	29/10/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	13	<50	<50	0	108	110
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	13	<100	<100	0	113	116
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	13	<100	<100	0	106	99
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	13	<50	<50	0	108	110
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	13	<100	<100	0	113	116
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	13	<100	<100	0	106	99
Surrogate o-Terphenyl	%		Org-003	[NT]	13	99	98	1	106	96

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	28/10/2019	28/10/2019		[NT]	[NT]
Date analysed	-			[NT]	21	29/10/2019	29/10/2019		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	21	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	21	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	21	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	21	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	21	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	21	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	21	112	98	13	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	229219-3
Date extracted	-			28/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			29/10/2019	1	29/10/2019	29/10/2019		29/10/2019	29/10/2019
Naphthalene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	110	112
Acenaphthylene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	102	104
Phenanthrene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	102	122
Anthracene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	98	121
Pyrene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	100	119
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	104	114
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	<0.05	1	0.05	0.05	0	106	112
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	121	1	122	114	7	106	104

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	229219-22
Date extracted	-			[NT]	13	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			[NT]	13	29/10/2019	29/10/2019		29/10/2019	29/10/2019
Naphthalene	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	122	101
Acenaphthylene	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	86	81
Phenanthrene	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	110	95
Anthracene	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	[NT]	13	0.3	0.3	0	104	89
Pyrene	mg/kg	0.1	Org-012/017	[NT]	13	0.3	0.3	0	108	93
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	[NT]	13	0.1	0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	[NT]	13	0.2	0.2	0	112	97
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	[NT]	13	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	[NT]	13	0.2	0.2	0	116	105
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	[NT]	13	0.1	0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	[NT]	13	0.2	0.2	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	13	105	121	14	114	100

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	28/10/2019	28/10/2019		[NT]	[NT]
Date analysed	-			[NT]	21	29/10/2019	29/10/2019		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012/017	[NT]	21	0.1	0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	[NT]	21	0.06	0.1	50	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	21	114	120	5	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	229219-3
Date extracted	-			28/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			29/10/2019	1	29/10/2019	29/10/2019		29/10/2019	29/10/2019
alpha-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	106	97
HCB	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	94	79
gamma-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	88	85
delta-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	106	112
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	100	97
gamma-Chlordane	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	102	99
Dieldrin	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	120	112
Endrin	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	106	102
Endosulfan II	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	100	93
Endrin Aldehyde	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	96	74
Methoxychlor	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	114	1	111	114	3	99	103

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			[NT]	13	28/10/2019	28/10/2019		28/10/2019	[NT]
Date analysed	-			[NT]	13	29/10/2019	29/10/2019		29/10/2019	[NT]
alpha-BHC	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	94	[NT]
HCB	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	82	[NT]
gamma-BHC	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	90	[NT]
delta-BHC	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	114	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	106	[NT]
gamma-Chlordane	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	112	[NT]
Dieldrin	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	116	[NT]
Endrin	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	76	[NT]
Endosulfan II	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	104	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	100	[NT]
Methoxychlor	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	13	117	114	3	101	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	28/10/2019	28/10/2019		[NT]	[NT]
Date analysed	-			[NT]	21	29/10/2019	29/10/2019		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	21	107	113	5	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	229219-3
Date extracted	-			28/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			29/10/2019	1	29/10/2019	29/10/2019		29/10/2019	29/10/2019
Dichlorvos	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	130	109
Dimethoate	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	82	88
Diazinon	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	110	103
Fenitrothion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	108	75
Malathion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	112	126
Chlorpyriphos	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	124	118
Parathion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	128	101
Bromophos-ethyl	mg/kg	0.1	AT-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	110	83
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	114	1	111	114	3	99	103

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			[NT]	13	28/10/2019	28/10/2019		28/10/2019	[NT]
Date analysed	-			[NT]	13	29/10/2019	29/10/2019		29/10/2019	[NT]
Dichlorvos	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	128	[NT]
Dimethoate	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	87	[NT]
Diazinon	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	116	[NT]
Fenitrothion	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	88	[NT]
Malathion	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	118	[NT]
Chlorpyriphos	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	126	[NT]
Parathion	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	116	[NT]
Bromophos-ethyl	mg/kg	0.1	AT-008	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	108	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	13	117	114	3	101	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	28/10/2019	28/10/2019		[NT]	[NT]
Date analysed	-			[NT]	21	29/10/2019	29/10/2019		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	AT-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	21	107	113	5	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	229219-3
Date extracted	-			28/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			29/10/2019	1	29/10/2019	29/10/2019		29/10/2019	29/10/2019
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	80	80
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	114	1	111	114	3	99	103

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			[NT]	13	28/10/2019	28/10/2019		28/10/2019	[NT]
Date analysed	-			[NT]	13	29/10/2019	29/10/2019		29/10/2019	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	13	<0.1	<0.1	0	91	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	13	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	13	117	114	3	101	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	28/10/2019	28/10/2019		[NT]	[NT]
Date analysed	-			[NT]	21	29/10/2019	29/10/2019		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	21	107	113	5	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	229219-3
Date prepared	-			28/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			28/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Arsenic	mg/kg	4	Metals-020	<4	1	9	10	11	109	107
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	108	109
Chromium	mg/kg	1	Metals-020	<1	1	2	2	0	110	105
Copper	mg/kg	1	Metals-020	<1	1	4	4	0	108	110
Lead	mg/kg	1	Metals-020	<1	1	5	5	0	108	104
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	102	96
Nickel	mg/kg	1	Metals-020	<1	1	1	1	0	104	106
Zinc	mg/kg	1	Metals-020	<1	1	9	9	0	105	104

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	229219-22
Date prepared	-			[NT]	13	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			[NT]	13	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Arsenic	mg/kg	4	Metals-020	[NT]	13	7	8	13	111	111
Cadmium	mg/kg	0.4	Metals-020	[NT]	13	<0.4	<0.4	0	109	110
Chromium	mg/kg	1	Metals-020	[NT]	13	3	3	0	115	110
Copper	mg/kg	1	Metals-020	[NT]	13	7	7	0	112	112
Lead	mg/kg	1	Metals-020	[NT]	13	17	18	6	113	107
Mercury	mg/kg	0.1	Metals-021	[NT]	13	0.1	0.1	0	103	92
Nickel	mg/kg	1	Metals-020	[NT]	13	2	2	0	104	109
Zinc	mg/kg	1	Metals-020	[NT]	13	13	13	0	109	108

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	21	28/10/2019	28/10/2019		[NT]	[NT]
Date analysed	-			[NT]	21	28/10/2019	28/10/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	21	10	11	10	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	21	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	21	5	6	18	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	21	8	7	13	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	21	17	16	6	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	21	0.2	0.2	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	21	2	2	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	21	19	19	0	[NT]	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	229219-3
Date prepared	-			28/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Date analysed	-			28/10/2019	1	28/10/2019	28/10/2019		28/10/2019	28/10/2019
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	103	107

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	21	28/10/2019	28/10/2019		[NT]	[NT]
Date analysed	-			[NT]	21	28/10/2019	28/10/2019		[NT]	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	21	<5	<5	0	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			28/10/2019	3	28/10/2019	28/10/2019		28/10/2019	[NT]
Date analysed	-			28/10/2019	3	28/10/2019	28/10/2019		28/10/2019	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	3	6.0	6.0	0	102	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	3	14	15	7	101	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			[NT]	11	28/10/2019	28/10/2019		28/10/2019	[NT]
Date analysed	-			[NT]	11	28/10/2019	28/10/2019		28/10/2019	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	11	6.1	6.1	0	102	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	[NT]	11	10	9	11	100	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	20	28/10/2019	28/10/2019		[NT]	[NT]
Date analysed	-			[NT]	20	28/10/2019	28/10/2019		[NT]	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	20	6.4	6.4	0	[NT]	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	[NT]	20	11	11	0	[NT]	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sam

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84944.02	**Suburb:**	Bellevue Hill	**To:**	EnviroLab
Project Name:	Cranbrook School In-situ assessment	**Order Number**			12 Ashley Street, Chatswood 2067
Project Manager:	Peter Oitmaa	**Sampler:**	Joel J-H	**Attn:**	Aileen Hie
Emails:	peter.oitmaa@douglaspartners.com.au; joel.james-hall@douglaspartners.com			**Phone:**	(02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☑ Standard ☐			**Email:**	Ahie@envirolab.com.au
Prior Storage:	☑ Esky ☑ Fridge ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: Combo 8	Combo 3	AF/FA	pH, EC	Foreign Materials (ENM)					Notes/preservation
TP1/0-0.3	1	23/10/19	S	G/P	X			X	X					
TP2/0.4-0.5	2	23/10/19	S	G/P		X		X	X					
TP3/0.4-0.5	3	23/10/19	S	G/P	X			X	X					
TP4/0.4-0.5	4	23/10/19	S	G/P	X		X	X	X					
TP8/1.6-1.8	5	23/10/19	S	G/P	—	X	X	X	X					
TP8/4.6-4.8	6	23/10/19	S	G/P		X		X	X					
TP9/0-0.3	7	23/10/19	S	G/P	X		X	X	X					
TP10/0-0.3	8	23/10/19	S	G/P	X			X	X					
TP11/0-0.3	9	23/10/19	S	G/P	X			X	X					
TP11/0.8-1.0	10	23/10/19	S	G/P		X	X	X	X					
TP12/1.6-1.8	11	23/10/19	S	G/P		X		X	X					
TP12/3.6-3.8	12	23/10/19	S	G/P		X		X	X					
TP13/0-0.3	13	23/10/19	S	G/P	X		X	X	X					
TP13/2.8-3.0	14	23/10/19	S	G/P		X		X	X					
TP14/0.4-0.5	15	23/10/19	S	G/P	X			X	X					
														ANZECC PQLs req'd for all water analytes ☐

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 229219
Date Received: 24/10/19
Time Received: 1805
Received by: JB
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Lab Report/Reference No: 229219

Metals to Analyse: 8HM unless specified here:

Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**

Signed: **Received by:** Jason Dong ECS SYD **Date & Time:** 1803 24/10/19

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84944.02	**Suburb:**	Bellevue Hill	**To:**	EnviroLab
Project Name:	Cranbrook School In-situ assessment	**Order Number**			12 Ashley Street, Chatswood 2067
Project Manager:	Peter Oitmaa	**Sampler:**	Joel J-H	**Attn:**	Aileen Hie
Emails:	peter.oitmaa@douglaspartners.com.au; joel.james-hall@douglaspartners.com			**Phone:**	(02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☑ Standard ☐			**Email:**	Ahie@envirolab.com.au
Prior Storage:	☑ Esky ☑ Fridge ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil W - water)	Container Type (G - glass P - plastic)	Analytes: Combo 8	Combo 3	AF/FA	pH, EC	Foreign Materials (ENM)					Notes/preservation
TP15/0.4-0.6	16	23/10/19	S	G/P	X		X	X	X					
TP16/0.4-0.6	17	23/10/19	S	G/P		X		X	X					
TP17/0-0.3	18	23/10/19	S	G/P	X		X	X	X					
TP17/0.4-0.5	19	23/10/19	S	G/P		X	X	X	X					
TP18/0.4-0.5	20	23/10/19	S	G/P		X		X	X					
TP23/0-0.3	21	23/10/19	S	G/P	X		X	X	X					
TP23/0.4-0.6	22	23/10/19	S	G/P		X		X	X					
BD1/20191023	23	23/10/19	S	G		X		X	X					
BD2/20191023	24	23/10/19	S	G		X		X	X					
TP2/0-0.3	25	23/10/19	S	P			X							
TP11_0-0.3 extra ENM	26	231019												
PQL (S) mg/kg													**ANZECC PQLs req'd for all water analytes** ☐	

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No: 229219

Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**

Signed: **Received by:** Jason Day ECS SYD **Date & Time:** 1803 24/10/19

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Joel James-Hall, Peter Oitmaa

Sample Login Details

Your reference	84944.02, Cranbrook School In-Situ Assessment
Envirolab Reference	229219
Date Sample Received	24/10/2019
Date Instructions Received	24/10/2019
Date Results Expected to be Reported	29/10/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	26 Soil
Turnaround Time Requested	3 days
Temperature on Receipt (°C)	9.0
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Misc Inorg - Soil	Asbestos ID - soils NEPM	RTA276 ENM*Foreign Material	On Hold
TP1/0-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
TP2/0.4-0.5	✓	✓	✓				✓		✓		✓	
TP3/0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
TP4/0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TP8/1.6-1.8	✓	✓	✓				✓		✓	✓	✓	
TP8/4.6-4.8	✓	✓	✓				✓		✓		✓	
TP9/0-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TP10/0-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
TP11/0-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
TP11/1.8-1.0	✓	✓	✓				✓		✓	✓	✓	
TP12/1.6-1.8	✓	✓	✓				✓		✓		✓	
TP12/3.6-3.8	✓	✓	✓				✓		✓		✓	
TP13/0-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TP13/2.8-3.0	✓	✓	✓				✓		✓		✓	
TP14/0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
TP15/0.4-0.6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TP16/0.4-0.6	✓	✓	✓				✓		✓		✓	
TP17/0-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TP17/0.4-0.5	✓	✓	✓				✓		✓	✓	✓	
TP18/0.4-0.5	✓	✓	✓				✓		✓		✓	
TP23/0-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TP23/0.4-0.6	✓	✓	✓				✓		✓		✓	
BD1/20191023	✓	✓	✓				✓					
BD2/20191023	✓	✓	✓				✓					
TP2/0-0.3										✓		
TP11/0-0.3												✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
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Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 165477

Client:

Douglas Partners Pty Ltd
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Peter Oitmaa

Sample log in details:

Your Reference:	**84944.01, Bellevue Hill**		
No. of samples:	30 soils		
Date samples received / completed instructions received	19/04/17	/	19/04/17

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	27/04/17	/	27/04/17
Date of Preliminary Report:	Not Issued		

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Accredited for compliance with ISO/IEC 17025 - Testing **Tests not covered by NATA are denoted with *.**

Results Approved By:

David Springer
General Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	---------- -	BH101	BH101	BH102	BH102	BH103
Depth	----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRHC_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPHC_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	92	100	93	98

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	---------- -	BH103	BH104	BH105	BH111	BH111
Depth	----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRHC_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPHC_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	94	93	99	97

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	---------- -	BH112	BH113	BH114	BH115	BH116
Depth	----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	101	100	94	100

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	---------- -	BH117	BH118	BH119	BH120	BH121
Depth	----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	99	97	102	98	86

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	---------- -	BH122	BH123	BH124	BH125	BH126
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	101	98	100	94	91

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	---------- -	BH127	BH128	BH129	BH129	BH130
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	21/04/2017	21/04/2017
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	94	87	96	96	94

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	---------- -	BH101	BH101	BH102	BH102	BH103
Depth	----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	84	84	85	82	87

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	---------- -	BH103	BH104	BH105	BH111	BH111
Depth	----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	83	83	84	83	82

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	---------- -	BH112	BH113	BH114	BH115	BH116
Depth	----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	21/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	82	84	85	84	81

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	---------- -	BH117	BH118	BH119	BH120	BH121
Depth	----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	83	81	83	81	83

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	---------- -	BH122	BH123	BH124	BH125	BH126
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	86	82	83	82	83

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	---------- -	BH127	BH128	BH129	BH129	BH130
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	84	84	86	85	86

PAHs in Soil Our Reference: Your Reference	UNITS ----------	165477-1 BH101	165477-2 BH101	165477-3 BH102	165477-4 BH102	165477-5 BH103
Depth	----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.6	<0.1	0.2	<0.1	<0.1
Pyrene	mg/kg	0.5	<0.1	0.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.3	<0.1	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.5	<0.2	0.3	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.3	<0.05	0.2	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3	<0.1	0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	3.0	<0.05	1.2	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	97	90	94	93	99

PAHs in Soil Our Reference: Your Reference	UNITS ----------	165477-6 BH103	165477-7 BH104	165477-8 BH105	165477-9 BH111	165477-10 BH111
Depth	----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	95	92	92	95	94

PAHs in Soil Our Reference: Your Reference	UNITS ----------	165477-11 BH112	165477-12 BH113	165477-13 BH114	165477-14 BH115	165477-15 BH116
Depth	----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	98	93	95	93	92

PAHs in Soil Our Reference: Your Reference	UNITS ----------	165477-16 BH117	165477-17 BH118	165477-18 BH119	165477-19 BH120	165477-20 BH121
Depth	----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.2	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	0.2	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.06	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	0.2	0.78	<0.05	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	94	94	95	97	91

PAHs in Soil Our Reference: Your Reference	UNITS ----------	165477-21 BH122	165477-22 BH123	165477-23 BH124	165477-24 BH125	165477-25 BH126
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.1	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	<0.05	<0.05	0.59	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	93	91	98	93	91

PAHs in Soil Our Reference: Your Reference	UNITS ----------	165477-26 BH127	165477-27 BH128	165477-28 BH129	165477-29 BH129	165477-30 BH130
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.5
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	2.3
Surrogate p-Terphenyl-d14	%	97	93	97	93	93

Organochlorine Pesticides in soil						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	----------	BH101	BH101	BH102	BH102	BH103
	-					
Depth	----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	99	102	100	99	99

Organochlorine Pesticides in soil						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	----------	BH103	BH104	BH105	BH111	BH111
	-					
Depth	----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	102	96	98	99

Organochlorine Pesticides in soil						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	----------	BH112	BH113	BH114	BH115	BH116
	-					
Depth	----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	97	98	98	97

Organochlorine Pesticides in soil						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	---------- -	BH117	BH118	BH119	BH120	BH121
Depth	----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	94	100	96	95

Organochlorine Pesticides in soil						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	---------- -	BH122	BH123	BH124	BH125	BH126
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	99	103	97	99	99

Organochlorine Pesticides in soil						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	---------- -	BH127	BH128	BH129	BH129	BH130
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	101	99	100	96

Organophosphorus Pesticides						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	----------	BH101	BH101	BH102	BH102	BH103
	-					
Depth	----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	99	102	100	99	99

Organophosphorus Pesticides						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	----------	BH103	BH104	BH105	BH111	BH111
	-					
Depth	----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	102	96	98	99

Organophosphorus Pesticides						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	---------- -	BH112	BH113	BH114	BH115	BH116
Depth	----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	97	98	98	97

Organophosphorus Pesticides						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	---------- -	BH117	BH118	BH119	BH120	BH121
Depth	----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	94	100	96	95

Organophosphorus Pesticides						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	---------- -	BH122	BH123	BH124	BH125	BH126
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	99	103	97	99	99

Organophosphorus Pesticides						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	---------- -	BH127	BH128	BH129	BH129	BH130
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	101	99	100	96

PCBs in Soil						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	----------	BH101	BH101	BH102	BH102	BH103
Depth	- ----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	99	102	100	99	99

PCBs in Soil						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	----------	BH103	BH104	BH105	BH111	BH111
Depth	- ----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	98	102	96	98	99

PCBs in Soil						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	----------	BH112	BH113	BH114	BH115	BH116
Depth	- ----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	98	97	98	98	97

PCBs in Soil						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	----------	BH117	BH118	BH119	BH120	BH121
Depth	- ----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	100	94	100	96	95

PCBs in Soil						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	----------	BH122	BH123	BH124	BH125	BH126
	-					
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	99	103	97	99	99

PCBs in Soil						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	----------	BH127	BH128	BH129	BH129	BH130
	-					
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	100	101	99	100	96

Acid Extractable metals in soil						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	----------	BH101	BH101	BH102	BH102	BH103
	-					
Depth	----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	6	<4	11	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	2	1	7	1	42
Copper	mg/kg	18	2	18	2	15
Lead	mg/kg	22	<1	28	3	14
Mercury	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Nickel	mg/kg	1	<1	3	<1	21
Zinc	mg/kg	12	2	24	3	24

Acid Extractable metals in soil						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	----------	BH103	BH104	BH105	BH111	BH111
	-					
Depth	----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	1	1	<1	1
Copper	mg/kg	2	<1	3	<1	<1
Lead	mg/kg	<1	2	3	1	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	3	4	4	1	2

Acid Extractable metals in soil						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	---------- -	BH112	BH113	BH114	BH115	BH116
Depth	----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	41	<4	14	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	0.6
Chromium	mg/kg	4	1	2	5	<1
Copper	mg/kg	4	2	1	5	1
Lead	mg/kg	10	2	3	6	7
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	<1	<1	3	<1
Zinc	mg/kg	11	4	4	16	3

Acid Extractable metals in soil						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	---------- -	BH117	BH118	BH119	BH120	BH121
Depth	----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	5	<4	9	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	4	<1	8	1
Copper	mg/kg	3	5	2	7	2
Lead	mg/kg	7	11	2	16	3
Mercury	mg/kg	<0.1	0.2	<0.1	0.1	<0.1
Nickel	mg/kg	<1	2	<1	3	<1
Zinc	mg/kg	6	9	5	17	7

Acid Extractable metals in soil						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	---------- -	BH122	BH123	BH124	BH125	BH126
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	<4	5	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	<1	4	2	<1
Copper	mg/kg	4	1	5	7	1
Lead	mg/kg	6	3	12	4	2
Mercury	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Nickel	mg/kg	8	<1	2	2	<1
Zinc	mg/kg	7	2	13	9	3

Acid Extractable metals in soil						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	---------- -	BH127	BH128	BH129	BH129	BH130
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	<4	<4	<4	19
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	0.5
Chromium	mg/kg	1	1	2	2	9
Copper	mg/kg	2	2	2	<1	19
Lead	mg/kg	3	1	2	1	50
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	<1	1	<1	4
Zinc	mg/kg	13	5	12	1	42

Acid Extractable metals in soil				
Our Reference:	UNITS	165477-31	165477-32	165477-33
Your Reference	----------	BH101 - [TRIPLICATE]	BH112 - [TRIPLICATE]	BH122 - [TRIPLICATE]
	-			
Depth	----------	0.5	0.5	1.0
Date Sampled		12/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	2	2	53
Copper	mg/kg	14	1	5
Lead	mg/kg	11	7	6
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	1	<1	16
Zinc	mg/kg	7	6	8

Misc Soil - Inorg						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	----------	BH101	BH101	BH102	BH102	BH103
	-					
Depth	----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	----------	BH103	BH104	BH105	BH111	BH111
	-					
Depth	----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	----------	BH112	BH113	BH114	BH115	BH116
	-					
Depth	----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	----------	BH117	BH118	BH119	BH120	BH121
	-					
Depth	----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	----------	BH122	BH123	BH124	BH125	BH126
	-					
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	----------	BH127	BH128	BH129	BH129	BH130
	-					
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Moisture						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	----------	BH101	BH101	BH102	BH102	BH103
	-					
Depth	----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	9.7	9.7	15	18	20

Moisture						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	----------	BH103	BH104	BH105	BH111	BH111
	-					
Depth	----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	5.5	9.0	17	5.6	5.5

Moisture						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	----------	BH112	BH113	BH114	BH115	BH116
	-					
Depth	----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	6.7	4.0	5.1	15	10

Moisture						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	----------	BH117	BH118	BH119	BH120	BH121
	-					
Depth	----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	6.3	15	4.0	9.5	19

Moisture						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	----------	BH122	BH123	BH124	BH125	BH126
	-					
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	5.0	4.4	9.2	6.3	20

Moisture						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	----------	BH127	BH128	BH129	BH129	BH130
	-					
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	4.1	20	6.2	7.0	15

Asbestos ID - soils						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	---------- -	BH101	BH101	BH102	BH102	BH103
Depth	----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 35g	Approx. 40g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	---------- -	BH103	BH104	BH105	BH111	BH111
Depth	----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 35g	Approx. 20g	Approx. 40g	Approx. 30g	Approx. 30g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	---------- -	BH112	BH113	BH114	BH115	BH116
Depth	----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	---------- -	BH117	BH118	BH119	BH120	BH121
Depth	----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 50g	Approx. 50g	Approx. 40g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	---------- -	BH122	BH123	BH124	BH125	BH126
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 50g	Approx. 40g	Approx. 40g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	---------- -	BH127	BH128	BH129	BH129	BH130
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 30g	Approx. 40g	Approx. 40g	Approx. 35g	Approx. 35g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Misc Inorg - Soil						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	---------- -	BH101	BH101	BH102	BH102	BH103
Depth	----------	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	6.4	6.1	6.2	6.0	5.3
Electrical Conductivity 1:5 soil:water	µS/cm	22	8	27	9	200

Misc Inorg - Soil						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	---------- -	BH103	BH104	BH105	BH111	BH111
Depth	----------	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	5.7	5.8	6.5	6.3	6.1
Electrical Conductivity 1:5 soil:water	µS/cm	31	11	18	12	10

Misc Inorg - Soil						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	---------- -	BH112	BH113	BH114	BH115	BH116
Depth	----------	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	5.6	6.1	6.0	6.1	6.4
Electrical Conductivity 1:5 soil:water	µS/cm	64	12	13	32	14

Misc Inorg - Soil						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	---------- -	BH117	BH118	BH119	BH120	BH121
Depth	----------	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	6.1	5.8	5.8	8.0	6.6
Electrical Conductivity 1:5 soil:water	µS/cm	14	27	12	130	12

Misc Inorg - Soil						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	---------- -	BH122	BH123	BH124	BH125	BH126
Depth	----------	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	6.6	6.4	6.2	6.1	6.4
Electrical Conductivity 1:5 soil:water	µS/cm	18	15	28	17	8

Misc Inorg - Soil						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	---------- -	BH127	BH128	BH129	BH129	BH130
Depth	----------	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	5.9	6.2	6.0	6.1	5.7
Electrical Conductivity 1:5 soil:water	µS/cm	13	11	16	15	25

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.

Method ID	Methodology Summary
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
Date analysed	-			21/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	21/04/2017
TRHC$_6$ - C$_9$	mg/kg	25	Org-016	<25	165477-1	<25 || <25	LCS-6	111%
TRHC$_6$ - C$_{10}$	mg/kg	25	Org-016	<25	165477-1	<25 || <25	LCS-6	111%
Benzene	mg/kg	0.2	Org-016	<0.2	165477-1	<0.2 || <0.2	LCS-6	116%
Toluene	mg/kg	0.5	Org-016	<0.5	165477-1	<0.5 || <0.5	LCS-6	103%
Ethylbenzene	mg/kg	1	Org-016	<1	165477-1	<1 || <1	LCS-6	110%
m+p-xylene	mg/kg	2	Org-016	<2	165477-1	<2 || <2	LCS-6	113%
o-Xylene	mg/kg	1	Org-016	<1	165477-1	<1 || <1	LCS-6	110%
naphthalene	mg/kg	1	Org-014	<1	165477-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	100	165477-1	98 || 97 || RPD: 1	LCS-6	104%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
Date analysed	-			21/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	21/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	165477-1	<50 || <50	LCS-6	110%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	165477-1	<100 || <100	LCS-6	104%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	165477-1	<100 || <100	LCS-6	94%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	165477-1	<50 || <50	LCS-6	110%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	165477-1	<100 || <100	LCS-6	104%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	165477-1	<100 || <100	LCS-6	94%
Surrogate o-Terphenyl	%		Org-003	87	165477-1	84 || 87 || RPD: 4	LCS-6	104%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
Date analysed	-			21/04/2017	165477-1	21/04/2017 || 21/04/2017	LCS-6	21/04/2017
Naphthalene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1 || <0.1	LCS-6	89%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1 || <0.1	LCS-6	84%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	165477-1	0.1 || <0.1	LCS-6	89%
Anthracene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	165477-1	0.6 || 0.4 || RPD: 40	LCS-6	85%
Pyrene	mg/kg	0.1	Org-012	<0.1	165477-1	0.5 || 0.3 || RPD: 50	LCS-6	82%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	165477-1	0.2 || 0.1 || RPD: 67	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	165477-1	0.3 || 0.2 || RPD: 40	LCS-6	79%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012	<0.2	165477-1	0.5 || 0.3 || RPD: 50	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	165477-1	0.3 || 0.2 || RPD: 40	LCS-6	83%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	165477-1	0.3 || 0.2 || RPD: 40	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	165477-1	0.2 || 0.1 || RPD: 67	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	96	165477-1	97 || 96 || RPD: 1	LCS-6	122%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
Date analysed	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
HCB	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	LCS-6	103%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	LCS-6	96%
Heptachlor	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	LCS-6	100%
delta-BHC	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	LCS-6	92%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	LCS-6	103%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	LCS-6	114%
Dieldrin	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	LCS-6	110%
Endrin	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	LCS-6	104%
pp-DDD	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	LCS-6	109%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	LCS-6	81%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	101	165477-1	99 || 98 || RPD: 1	LCS-6	114%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
Date analysed	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	LCS-6	92%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	LCS-6	84%
Dimethoate	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	LCS-6	105%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	LCS-6	111%
Malathion	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	LCS-6	79%
Parathion	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	LCS-6	90%
Ronnel	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1 || <0.1	LCS-6	83%
Surrogate TCMX	%		Org-008	101	165477-1	99 || 98 || RPD: 1	LCS-6	98%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
Date analysed	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1 || <0.1	LCS-6	109%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	101	165477-1	99 || 98 || RPD: 1	LCS-6	98%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
Date analysed	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-6	20/04/2017
Arsenic	mg/kg	4	Metals-020	<4	165477-1	6 || 5 || RPD: 18	LCS-6	108%
Cadmium	mg/kg	0.4	Metals-020	<0.4	165477-1	<0.4 || <0.4	LCS-6	96%
Chromium	mg/kg	1	Metals-020	<1	165477-1	2 || 2 || RPD: 0	LCS-6	105%
Copper	mg/kg	1	Metals-020	<1	165477-1	18 || 15 || RPD: 18	LCS-6	104%
Lead	mg/kg	1	Metals-020	<1	165477-1	22 || 11 || RPD: 67	LCS-6	99%
Mercury	mg/kg	0.1	Metals-021	<0.1	165477-1	<0.1 || <0.1	LCS-6	108%
Nickel	mg/kg	1	Metals-020	<1	165477-1	1 || 1 || RPD: 0	LCS-6	96%
Zinc	mg/kg	1	Metals-020	<1	165477-1	12 || 7 || RPD: 53	LCS-6	98%

QUALITY CONTROL Misc Soil - Inorg	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-1	20/04/2017
Date analysed	-			20/04/2017	165477-1	20/04/2017 || 20/04/2017	LCS-1	20/04/2017
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	165477-1	<5 || <5	LCS-1	100%

QUALITY CONTROL Misc Inorg - Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			22/04/2017	165477-1	22/04/2017 || 22/04/2017	LCS-6	22/04/2017
Date analysed	-			22/04/2017	165477-1	22/04/2017 || 22/04/2017	LCS-6	22/04/2017
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	165477-1	6.4 || 6.1 || RPD: 5	LCS-6	102%
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	165477-1	22 || 21 || RPD: 5	LCS-6	107%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
$TRHC_6 - C_9$	mg/kg	165477-11	<25 || <25	LCS-5	102%
$TRHC_6 - C_{10}$	mg/kg	165477-11	<25 || <25	LCS-5	102%
Benzene	mg/kg	165477-11	<0.2 || <0.2	LCS-5	108%
Toluene	mg/kg	165477-11	<0.5 || <0.5	LCS-5	94%
Ethylbenzene	mg/kg	165477-11	<1 || <1	LCS-5	101%
m+p-xylene	mg/kg	165477-11	<2 || <2	LCS-5	103%
o-Xylene	mg/kg	165477-11	<1 || <1	LCS-5	100%
naphthalene	mg/kg	165477-11	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	165477-11	98 || 97 || RPD: 1	LCS-5	97%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	165477-11	<50 || <50	LCS-5	109%
TRHC$_{15}$ - C$_{28}$	mg/kg	165477-11	<100 || <100	LCS-5	104%
TRHC$_{29}$ - C$_{36}$	mg/kg	165477-11	<100 || <100	LCS-5	106%
TRH>C$_{10}$-C$_{16}$	mg/kg	165477-11	<50 || <50	LCS-5	109%
TRH>C$_{16}$-C$_{34}$	mg/kg	165477-11	<100 || <100	LCS-5	104%
TRH>C$_{34}$-C$_{40}$	mg/kg	165477-11	<100 || <100	LCS-5	106%
Surrogate o-Terphenyl	%	165477-11	82 || 83 || RPD: 1	LCS-5	105%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	21/04/2017 || 21/04/2017	LCS-5	21/04/2017
Naphthalene	mg/kg	165477-11	<0.1 || <0.1	LCS-5	88%
Acenaphthylene	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	165477-11	<0.1 || <0.1	LCS-5	83%
Phenanthrene	mg/kg	165477-11	<0.1 || <0.1	LCS-5	89%
Anthracene	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	165477-11	<0.1 || <0.1	LCS-5	85%
Pyrene	mg/kg	165477-11	<0.1 || <0.1	LCS-5	81%
Benzo(a)anthracene	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	165477-11	<0.1 || <0.1	LCS-5	79%
Benzo(b,j+k)fluoranthene	mg/kg	165477-11	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	165477-11	<0.05 || <0.05	LCS-5	80%
Indeno(1,2,3-c,d)pyrene	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	165477-11	98 || 97 || RPD: 1	LCS-5	118%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
HCB	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	165477-11	<0.1 || <0.1	LCS-5	103%
gamma-BHC	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	165477-11	<0.1 || <0.1	LCS-5	95%
Heptachlor	mg/kg	165477-11	<0.1 || <0.1	LCS-5	99%
delta-BHC	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	165477-11	<0.1 || <0.1	LCS-5	90%
Heptachlor Epoxide	mg/kg	165477-11	<0.1 || <0.1	LCS-5	102%
gamma-Chlordane	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	165477-11	<0.1 || <0.1	LCS-5	111%
Dieldrin	mg/kg	165477-11	<0.1 || <0.1	LCS-5	108%
Endrin	mg/kg	165477-11	<0.1 || <0.1	LCS-5	103%
pp-DDD	mg/kg	165477-11	<0.1 || <0.1	LCS-5	107%
Endosulfan II	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	165477-11	<0.1 || <0.1	LCS-5	82%
Methoxychlor	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	165477-11	98 || 98 || RPD: 0	LCS-5	112%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	165477-11	<0.1 || <0.1	LCS-5	93%
Chlorpyriphos-methyl	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	165477-11	<0.1 || <0.1	LCS-5	101%
Dimethoate	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	165477-11	<0.1 || <0.1	LCS-5	105%
Fenitrothion	mg/kg	165477-11	<0.1 || <0.1	LCS-5	112%
Malathion	mg/kg	165477-11	<0.1 || <0.1	LCS-5	79%
Parathion	mg/kg	165477-11	<0.1 || <0.1	LCS-5	94%
Ronnel	mg/kg	165477-11	<0.1 || <0.1	LCS-5	85%
Surrogate TCMX	%	165477-11	98 || 98 || RPD: 0	LCS-5	100%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
Aroclor 1016	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	165477-11	<0.1 || <0.1	LCS-5	111%
Aroclor 1260	mg/kg	165477-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	165477-11	98 || 98 || RPD: 0	LCS-5	100%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017 || 20/04/2017	LCS-5	20/04/2017
Arsenic	mg/kg	165477-11	<4 || <4	LCS-5	107%
Cadmium	mg/kg	165477-11	<0.4 || <0.4	LCS-5	99%
Chromium	mg/kg	165477-11	4 || 2 || RPD: 67	LCS-5	104%
Copper	mg/kg	165477-11	4 || 1 || RPD: 120	LCS-5	103%
Lead	mg/kg	165477-11	10 || 4 || RPD: 86	LCS-5	100%
Mercury	mg/kg	165477-11	<0.1 || <0.1	LCS-5	111%
Nickel	mg/kg	165477-11	2 || <1	LCS-5	95%
Zinc	mg/kg	165477-11	11 || 5 || RPD: 75	LCS-5	96%

QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165477-11	20/04/2017 || 20/04/2017	LCS-2	20/04/2017
Date analysed	-	165477-11	20/04/2017 || 20/04/2017	LCS-2	20/04/2017
Total Phenolics (as Phenol)	mg/kg	165477-11	<5 || <5	LCS-2	101%
QUALITY CONTROL Misc Inorg - Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165477-11	22/04/2017 || 22/04/2017	LCS-7	22/04/2017
Date analysed	-	165477-11	22/04/2017 || 22/04/2017	LCS-7	22/04/2017
pH 1:5 soil:water	pH Units	165477-11	5.6 || 5.9 || RPD: 5	LCS-7	102%
Electrical Conductivity 1:5 soil:water	µS/cm	165477-11	64 || 68 || RPD: 6	LCS-7	98%
QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
$TRHC_6$ - C_9	mg/kg	165477-21	<25 || <25	165477-2	106%
$TRHC_6$ - C_{10}	mg/kg	165477-21	<25 || <25	165477-2	106%
Benzene	mg/kg	165477-21	<0.2 || <0.2	165477-2	110%
Toluene	mg/kg	165477-21	<0.5 || <0.5	165477-2	99%
Ethylbenzene	mg/kg	165477-21	<1 || <1	165477-2	105%
m+p-xylene	mg/kg	165477-21	<2 || <2	165477-2	108%
o-Xylene	mg/kg	165477-21	<1 || <1	165477-2	105%
naphthalene	mg/kg	165477-21	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	165477-21	101 || 97 || RPD: 4	165477-2	100%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	21/04/2017 || 21/04/2017	165477-2	20/04/2017
$TRHC_{10}$ - C_{14}	mg/kg	165477-21	<50 || <50	165477-2	100%
$TRHC_{15}$ - C_{28}	mg/kg	165477-21	<100 || <100	165477-2	92%
$TRHC_{29}$ - C_{36}	mg/kg	165477-21	<100 || <100	165477-2	73%
$TRH>C_{10}$-C_{16}	mg/kg	165477-21	<50 || <50	165477-2	100%
$TRH>C_{16}$-C_{34}	mg/kg	165477-21	<100 || <100	165477-2	92%
$TRH>C_{34}$-C_{40}	mg/kg	165477-21	<100 || <100	165477-2	73%
Surrogate o-Terphenyl	%	165477-21	86 || 82 || RPD: 5	165477-2	84%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	21/04/2017 || 21/04/2017	165477-2	21/04/2017
Naphthalene	mg/kg	165477-21	<0.1 || <0.1	165477-2	84%
Acenaphthylene	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	165477-21	<0.1 || <0.1	165477-2	78%
Phenanthrene	mg/kg	165477-21	<0.1 || <0.1	165477-2	76%
Anthracene	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	165477-21	<0.1 || <0.1	165477-2	73%
Pyrene	mg/kg	165477-21	<0.1 || <0.1	165477-2	75%
Benzo(a)anthracene	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	165477-21	<0.1 || <0.1	165477-2	70%
Benzo(b,j+k)fluoranthene	mg/kg	165477-21	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	165477-21	<0.05 || <0.05	165477-2	76%
Indeno(1,2,3-c,d)pyrene	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	165477-21	93 || 97 || RPD: 4	165477-2	115%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
HCB	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	165477-21	<0.1 || <0.1	165477-2	120%
gamma-BHC	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	165477-21	<0.1 || <0.1	165477-2	96%
Heptachlor	mg/kg	165477-21	<0.1 || <0.1	165477-2	100%
delta-BHC	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	165477-21	<0.1 || <0.1	165477-2	92%
Heptachlor Epoxide	mg/kg	165477-21	<0.1 || <0.1	165477-2	103%
gamma-Chlordane	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	165477-21	<0.1 || <0.1	165477-2	113%
Dieldrin	mg/kg	165477-21	<0.1 || <0.1	165477-2	109%
Endrin	mg/kg	165477-21	<0.1 || <0.1	165477-2	103%
pp-DDD	mg/kg	165477-21	<0.1 || <0.1	165477-2	108%
Endosulfan II	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	165477-21	<0.1 || <0.1	165477-2	79%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Methoxychlor	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	165477-21	99 || 100 || RPD: 1	165477-2	112%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	165477-21	<0.1 || <0.1	165477-2	89%
Chlorpyriphos-methyl	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	165477-21	<0.1 || <0.1	165477-2	86%
Dimethoate	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	165477-21	<0.1 || <0.1	165477-2	111%
Fenitrothion	mg/kg	165477-21	<0.1 || <0.1	165477-2	101%
Malathion	mg/kg	165477-21	<0.1 || <0.1	165477-2	75%
Parathion	mg/kg	165477-21	<0.1 || <0.1	165477-2	86%
Ronnel	mg/kg	165477-21	<0.1 || <0.1	165477-2	80%
Surrogate TCMX	%	165477-21	99 || 100 || RPD: 1	165477-2	97%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Aroclor 1016	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	165477-21	<0.1 || <0.1	165477-2	107%
Aroclor 1260	mg/kg	165477-21	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	165477-21	99 || 100 || RPD: 1	165477-2	97%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Arsenic	mg/kg	165477-21	<4 || <4	165477-2	99%
Cadmium	mg/kg	165477-21	<0.4 || <0.4	165477-2	104%
Chromium	mg/kg	165477-21	8 || 14 || RPD: 55	165477-2	107%
Copper	mg/kg	165477-21	4 || 5 || RPD: 22	165477-2	104%
Lead	mg/kg	165477-21	6 || 5 || RPD: 18	165477-2	101%
Mercury	mg/kg	165477-21	<0.1 || <0.1	165477-2	108%
Nickel	mg/kg	165477-21	8 || 12 || RPD: 40	165477-2	103%
Zinc	mg/kg	165477-21	7 || 10 || RPD: 35	165477-2	102%

QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017 || 20/04/2017	165477-2	20/04/2017
Total Phenolics (as Phenol)	mg/kg	165477-21	<5 || <5	165477-2	93%

QUALITY CONTROL Misc Inorg - Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	165477-21	22/04/2017 || 22/04/2017
Date analysed	-	165477-21	22/04/2017 || 22/04/2017
pH 1:5 soil:water	pH Units	165477-21	6.6 || 6.6 || RPD: 0
Electrical Conductivity 1:5 soil:water	µS/cm	165477-21	18 || 18 || RPD: 0

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
TRH C_6 - C_9	mg/kg	[NT]	[NT]	165477-22	101%
TRH C_6 - C_{10}	mg/kg	[NT]	[NT]	165477-22	101%
Benzene	mg/kg	[NT]	[NT]	165477-22	106%
Toluene	mg/kg	[NT]	[NT]	165477-22	92%
Ethylbenzene	mg/kg	[NT]	[NT]	165477-22	100%
m+p-xylene	mg/kg	[NT]	[NT]	165477-22	103%
o-Xylene	mg/kg	[NT]	[NT]	165477-22	100%
naphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	165477-22	96%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	21/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	[NT]	[NT]	165477-22	105%
TRHC$_{15}$ - C$_{28}$	mg/kg	[NT]	[NT]	165477-22	98%
TRHC$_{29}$ - C$_{36}$	mg/kg	[NT]	[NT]	165477-22	103%
TRH>C$_{10}$-C$_{16}$	mg/kg	[NT]	[NT]	165477-22	105%
TRH>C$_{16}$-C$_{34}$	mg/kg	[NT]	[NT]	165477-22	98%
TRH>C$_{34}$-C$_{40}$	mg/kg	[NT]	[NT]	165477-22	103%
Surrogate o-Terphenyl	%	[NT]	[NT]	165477-22	93%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	21/04/2017
Naphthalene	mg/kg	[NT]	[NT]	165477-22	84%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	165477-22	78%
Phenanthrene	mg/kg	[NT]	[NT]	165477-22	77%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	165477-22	73%
Pyrene	mg/kg	[NT]	[NT]	165477-22	74%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	165477-22	67%
Benzo(b,j+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	165477-22	77%
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	[NT]	[NT]	165477-22	117%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	165477-22	109%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	165477-22	98%
Heptachlor	mg/kg	[NT]	[NT]	165477-22	101%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	165477-22	94%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	165477-22	106%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	165477-22	116%
Dieldrin	mg/kg	[NT]	[NT]	165477-22	113%
Endrin	mg/kg	[NT]	[NT]	165477-22	104%
pp-DDD	mg/kg	[NT]	[NT]	165477-22	110%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	165477-22	78%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	165477-22	116%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	[NT]	[NT]	[NR]	[NR]
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	[NT]	[NT]	165477-22	93%
Chlorpyriphos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	[NT]	[NT]	165477-22	84%
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	165477-22	113%
Fenitrothion	mg/kg	[NT]	[NT]	165477-22	75%
Malathion	mg/kg	[NT]	[NT]	165477-22	77%
Parathion	mg/kg	[NT]	[NT]	165477-22	86%
Ronnel	mg/kg	[NT]	[NT]	165477-22	83%
Surrogate TCMX	%	[NT]	[NT]	165477-22	98%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
Aroclor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	[NT]	[NT]	165477-22	110%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	165477-22	98%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
Arsenic	mg/kg	[NT]	[NT]	165477-22	97%
Cadmium	mg/kg	[NT]	[NT]	165477-22	100%
Chromium	mg/kg	[NT]	[NT]	165477-22	100%
Copper	mg/kg	[NT]	[NT]	165477-22	104%
Lead	mg/kg	[NT]	[NT]	165477-22	100%
Mercury	mg/kg	[NT]	[NT]	165477-22	116%
Nickel	mg/kg	[NT]	[NT]	165477-22	98%
Zinc	mg/kg	[NT]	[NT]	165477-22	101%

QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
Total Phenolics (as Phenol)	mg/kg	[NT]	[NT]	165477-22	96%

Report Comments:

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 165477-1 for Pb and Zn. Therefore a triplicate result has been issued as laboratory sample number 165477-31.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 165477-11 for Pb and Zn. Therefore a triplicate result has been issued as laboratory sample number 165477-32.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 165477-21 for Cr. Therefore a triplicate result has been issued as laboratory sample number 165477-33.

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.
Note: Samples 165477-11, 19, 23, 24 were sub-sampled from jars and Samples 165477-1 to 10, 12 to 18, 20 to 22, 25 to 30 were sub-sampled from bags provided by the client.

Asbestos ID was analysed by Approved Identifier: Lucy Zhu
Asbestos ID was authorised by Approved Signatory: Paul Ching

INS: Insufficient sample for this test
NR: Test not required
<: Less than
PQL: Practical Quantitation Limit
RPD: Relative Percent Difference
>: Greater than
NT: Not tested
NA: Test not required
LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	Douglas Partners Pty Ltd
Attention	Peter Oitmaa

Sample Login Details	
Your Reference	84944.01, Bellevue Hill
Envirolab Reference	**165477**
Date Sample Received	19/04/2017
Date Instructions Received	19/04/2017
Date Results Expected to be Reported	**27/04/2017**

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	30 soils
Turnaround Time Requested	Standard
Temperature on receipt (°C)	16.0
Cooling Method	Ice
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

Sample and Testing Details on following page

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Sample Id	*vTRH(C6-C10)/BTEXN in Soil*	*svTRH (C10-C40) in Soil*	*PAHs in Soil*	*Organochlorine Pesticides in soil*	*Organophosphorus Pesticides*	*PCBs in Soil*	*Acid Extractable metals in soil*	*Total Phenolics (as Phenol)*	*Asbestos ID - soils*	*Electrical Conductivity 1:5 soil:water*	*pH 1:5 soil:water*
BH101-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH101-4.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH102-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH102-2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH103-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH103-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH104-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH105-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH111-0.45-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH111-2.9-3.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH112-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH113-1.0-1.05	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH114-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH115-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH116-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH117-1.95-2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH118-0.1-0.15	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH119-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH120-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH121-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH122-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH123-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH124-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH125-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH126-2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH127-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH128-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH129-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH129-2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH130-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Bellevue Hill
Project No: 84944.01 Sampler:R Wong
Project Mgr: Peter Oitmaa Mob. Phone: 0412 574 518
Email: Peter.Oitmaa@DouglasPartners.com.au
Date Required: Standard t/a Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth (m)	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes										Notes
						Combo 8a	pH, EC									
BH101	0.5	1	12/4	S	Jar/bag	x	x									
BH101	4.0	2	12/4	S	Jar/bag	x	x									
BH102	0.5	3	12/4	S	Jar/bag	x	x									
BH102	2.0	4	12/4	S	Jar/bag	x	x									
BH103	0.1	5	11/4	S	Jar/bag	x	x									
BH103	1.0	6	11/4	S	Jar/bag	x	x									
BH104	1.0	7	12/4	S	Jar/bag	x	x									
BH105	1.0	8	10/4	S	Jar/bag	x	x									
BH111	0.45-0.5	9	13/4	S	Jar/bag	x	x									
BH111	2.9-3.0	10	13/4	S	Jar/bag	x	x									
BH112	0.5	11	11/4	S	Jar/bag	x	x									
BH113	1.0-1.05	12	13/4	S	Jar/bag	x	x									

ENVIROLAB Group
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 165477.
Date Received: 19/4
Time Received: 15:00.
Received by: AZ.
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Lab Report No.
Send Results to: Peter.Oitmaa@DouglasPartners.com.au Address: 96 Hermitage Road, West Ryde 2114 Phone: (02) 9809 0666 Fax: (02) 9809 4095

Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:
Relinquished by:	Signed:	Date & Time:	Received By: AZ.	Date & Time: 19/4

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Bellevue Hill
Project No: 84944.01 Sampler:R Wong
Project Mgr: Peter Oitmaa Mob. Phone: 0412 574 518
Email: Peter.Oitmaa@DouglasPartners.com.au
Date Required: Standard t/a Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth (m)	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes										Notes
	165477					Combo 8a	pH, EC									
BH114	1.0	13	11/4	S	Jar/bag	x	x									
BH115	0.1	14	11/4	S	Jar/bag	x	x									
BH116	1.0	15	11/4	S	Jar/bag	x	x									
BH117	1.95-2.0	16	13/4	S	Jar/bag	x	x									
BH118	0.1-0.15	17	13/4	S	Jar/bag	x	x									
BH119	0.5	18	10/4	S	Jar/bag	x	x									
BH120	0.5	19	11/4	S	Jar/bag	x	x									
BH121	1.0	20	12/4	S	Jar/bag	x	x									
BH122	1.0	21	11/4	S	Jar/bag	x	x									
BH123	0.5	22	11/4	S	Jar/bag	x	x									
BH124	0.1	23	10/4	S	Jar/bag	x	x									
BH125	0.5	24	10/4	S	Jar/bag	x	x									

Lab Report No.
Phone: (02) 9809 0666
Send Results to: Peter.Oitmaa@DouglasPartners.com.au Address: 96 Hermitage Road, West Ryde 2114 Fax: (02) 9809 4095

Relinquished by:	Signed:	Date & Time:	Received By: ELS	Date & Time: 19/4 1500
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:

Douglas Partners
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CHAIN OF CUSTODY

Project Name: Bellevue Hill
Project No: 84944.01 Sampler:R Wong
Project Mgr: Peter Oitmaa Mob. Phone: 0412 574 518
Email: Peter.Oitmaa@DouglasPartners.com.au
Date Required: Standard t/a Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth (m)	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: Combo 8a	Analytes: pH, EC	Analytes	Analytes	Analytes	Analytes	Analytes	Analytes	Analytes	Analytes	Notes
165477.																
BH126	2.0	25	12/4	S	Jar/bag	x	x									
BH127	0.5	26	11/4	S	Jar/bag	x	x									
BH128	1.0	27	12/4	S	Jar/bag	x	x									
BH129	0.5	28	10/4	S	Jar/bag	x	x									
BH129	2.0	29	10/4	S	Jar/bag	x	x									
BH130	0.1	30	10/4	S	Jar/bag	x	x									

Lab Report No. .....
Phone: (02) 9809 0666
Send Results to: Peter.Oitmaa@DouglasPartners.com.au Address: 96 Hermitage Road, West Ryde 2114 Fax: (02) 9809 4095

Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:
			ELS	19/4 1500
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:

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www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 130980

Client:
Douglas Partners Pty Ltd
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Peter Oitmaa

Sample log in details:

Your Reference:	**84944.00, Bellevue Hill**
No. of samples:	10 Soils
Date samples received / completed instructions received	10/07/2015 / 10/07/2015

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	17/07/15 / 17/07/15
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	110	111	112	111	117

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	----------	BH4	BH4	BH4	BH10	BH10
Depth	----------	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	110	121	106	117	120

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	14/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	81	72	79	76	117

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	----------	BH4	BH4	BH4	BH10	BH10
Depth	----------	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	80	76	78	82	78

PAHs in Soil						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	14/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	14/07/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.4
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.9
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.9
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.5
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.3
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	5.8
Surrogate p-Terphenyl-d14	%	95	84	101	96	95

PAHs in Soil						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	----------	BH4	BH4	BH4	BH10	BH10
Depth	----------	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	0.7	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	0.5	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	6.5	0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	1.8	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	5.0	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	4.7	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	2.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	1.8	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	2.4	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	1.6	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.9	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.7	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	2.3	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	2.3	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	2.3	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	29	0.10
Surrogate p-Terphenyl-d14	%	95	95	104	105	96

Organochlorine Pesticides in soil						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	79	88	83	87

Organochlorine Pesticides in soil						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	----------	BH4	BH4	BH4	BH10	BH10
Depth	----------	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	79	86	85	83	84

Organophosphorus Pesticides						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	79	88	83	87

Organophosphorus Pesticides						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	----------	BH4	BH4	BH4	BH10	BH10
Depth	----------	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	79	86	85	83	84

PCBs in Soil						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	89	79	88	83	87

PCBs in Soil						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	----------	BH4	BH4	BH4	BH10	BH10
Depth	----------	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	79	86	85	83	84

Acid Extractable metals in soil						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Arsenic	mg/kg	41	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	2	1	2	2
Copper	mg/kg	5	1	<1	<1	2
Lead	mg/kg	3	3	1	1	5
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	36	3	1	<1	3

Acid Extractable metals in soil						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	----------	BH4	BH4	BH4	BH10	BH10
Depth	----------	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	1	2	2	2
Copper	mg/kg	1	<1	1	22	<1
Lead	mg/kg	9	4	14	10	2
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	1	1
Zinc	mg/kg	3	2	4	10	1

Acid Extractable metals in soil		
Our Reference:	UNITS	130980-11
Your Reference	----------	BH2 - TRIPLICATE
Depth	----------	1.0
Date Sampled		07/07/2015
Type of sample		Soil
Date digested	-	13/07/2015
Date analysed	-	13/07/2015
Arsenic	mg/kg	20
Cadmium	mg/kg	<0.4
Chromium	mg/kg	2
Copper	mg/kg	4
Lead	mg/kg	5
Mercury	mg/kg	<0.1
Nickel	mg/kg	1

Acid Extractable metals in soil		
Our Reference:	UNITS	130980-11
Your Reference	----------	BH2 - TRIPLICATE
Depth	----------	1.0
Date Sampled		07/07/2015
Type of sample		Soil
Zinc	mg/kg	25

Misc Soil - Inorg						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	----------	BH4	BH4	BH4	BH10	BH10
Depth	----------	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Inorg - Soil						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
pH 1:5 soil:water	pH Units	6.3	6.5	6.5	5.8	6.3
Electrical Conductivity 1:5 soil:water	µS/cm	21	13	13	14	14
Chloride, Cl 1:5 soil:water	mg/kg	<10	<10	<10	<10	<10
Sulphate, SO4 1:5 soil:water	mg/kg	<10	<10	<10	<10	<10

Misc Inorg - Soil						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	----------	BH4	BH4	BH4	BH10	BH10
Depth	----------	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
pH 1:5 soil:water	pH Units	6.1	6.0	6.2	9.9	7.2
Electrical Conductivity 1:5 soil:water	µS/cm	12	11	14	87	36
Chloride, Cl 1:5 soil:water	mg/kg	<10	<10	<10	<10	<10
Sulphate, SO4 1:5 soil:water	mg/kg	<10	<10	<10	38	31

Moisture						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Moisture	%	7.7	4.0	4.6	5.5	4.4

Moisture						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	----------	BH4	BH4	BH4	BH10	BH10
Depth	----------	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Moisture	%	7.4	6.3	20	1.5	1.9

Asbestos ID - soils						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	----------	BH2	BH2	BH2	BH2	BH4
Depth	----------	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	16/07/2015	16/07/2015	16/07/2015	16/07/2015	16/07/2015
Sample mass tested	g	Approx 60g	Approx 70g	Approx 70g	Approx 75g	Approx 65g
Sample Description	-	Brown coarse-grained sandy soil	Brown coarse-grained sandy soil	Brown coarse-grained sandy soil	Brown coarse-grained sandy soil	Brown coarse-grained sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils					
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9
Your Reference	----------	BH4	BH4	BH4	BH10
Depth	----------	2.0	3.0	4.0	1.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	16/07/2015	16/07/2015	16/07/2015	16/07/2015
Sample mass tested	g	Approx 75g	Approx 75g	Approx 60g	Approx 40g
Sample Description	-	Brown coarse-grained sandy soil	Brown coarse-grained sandy soil	Grey coarse-grained sandy soil	Brown coarse-grained sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25oC in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-3	13/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015 || 14/07/2015	LCS-3	14/07/2015
TRHC$_6$ - C$_9$	mg/kg	25	Org-016	<25	130980-1	<25 || <25	LCS-3	124%
TRHC$_6$ - C$_{10}$	mg/kg	25	Org-016	<25	130980-1	<25 || <25	LCS-3	124%
Benzene	mg/kg	0.2	Org-016	<0.2	130980-1	<0.2 || <0.2	LCS-3	125%
Toluene	mg/kg	0.5	Org-016	<0.5	130980-1	<0.5 || <0.5	LCS-3	122%
Ethylbenzene	mg/kg	1	Org-016	<1	130980-1	<1 || <1	LCS-3	122%
m+p-xylene	mg/kg	2	Org-016	<2	130980-1	<2 || <2	LCS-3	125%
o-Xylene	mg/kg	1	Org-016	<1	130980-1	<1 || <1	LCS-3	120%
naphthalene	mg/kg	1	Org-014	<1	130980-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	119	130980-1	110 || 115 || RPD: 4	LCS-3	117%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-3	13/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015 || 14/07/2015	LCS-3	14/07/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	130980-1	<50 || <50	LCS-3	90%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	130980-1	<100 || <100	LCS-3	95%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	130980-1	<100 || 210	LCS-3	77%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	130980-1	<50 || <50	LCS-3	90%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	130980-1	<100 || 160	LCS-3	95%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	130980-1	<100 || 210	LCS-3	77%
Surrogate o-Terphenyl	%		Org-003	82	130980-1	81 || 87 || RPD: 7	LCS-3	89%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-3	13/07/2015
Date analysed	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-3	13/07/2015
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	LCS-3	113%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	LCS-3	95%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	LCS-3	105%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	LCS-3	98%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	LCS-3	103%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	LCS-3	97%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	130980-1	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	130980-1	<0.05 || <0.05	LCS-3	105%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	101	130980-1	95 || 125 || RPD: 27	LCS-3	104%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-3	13/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015 || 14/07/2015	LCS-3	14/07/2015
HCB	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	LCS-3	88%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	LCS-3	85%
Heptachlor	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	LCS-3	88%
delta-BHC	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	LCS-3	96%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	LCS-3	86%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	LCS-3	87%
Dieldrin	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	LCS-3	89%
Endrin	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	LCS-3	97%
pp-DDD	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	LCS-3	94%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	LCS-3	86%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	87	130980-1	89 || 96 || RPD: 8	LCS-3	82%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-3	13/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015 || 14/07/2015	LCS-3	14/07/2015
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	LCS-3	99%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	LCS-3	103%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	LCS-3	104%
Dimethoate	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	LCS-3	123%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	LCS-3	101%
Malathion	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	LCS-3	78%
Parathion	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	LCS-3	108%
Ronnel	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-008	87	130980-1	89 || 96 || RPD: 8	LCS-3	84%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-3	13/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015 || 14/07/2015	LCS-3	14/07/2015
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1 || <0.1	LCS-3	122%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	87	130980-1	89 || 96 || RPD: 8	LCS-3	83%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-8	13/07/2015
Date analysed	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-8	13/07/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	130980-1	41 || 14 || RPD: 98	LCS-8	106%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	130980-1	<0.4 || <0.4	LCS-8	94%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	130980-1	3 || 2 || RPD: 40	LCS-8	103%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	130980-1	5 || 5 || RPD: 0	LCS-8	104%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	130980-1	3 || 7 || RPD: 80	LCS-8	98%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	130980-1	<0.1 || <0.1	LCS-8	90%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	130980-1	<1 || 1	LCS-8	100%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	130980-1	36 || 21 || RPD: 53	LCS-8	102%

QUALITY CONTROL Misc Soil - Inorg	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-1	13/07/2015
Date analysed	-			13/07/2015	130980-1	13/07/2015 || 13/07/2015	LCS-1	13/07/2015
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	130980-1	<5 || <5	LCS-1	109%

QUALITY CONTROL Misc Inorg - Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			14/07/2015	130980-1	14/07/2015 || 14/07/2015	LCS-1	14/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015 || 14/07/2015	LCS-1	14/07/2015
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	130980-1	6.3 || 6.4 || RPD: 2	LCS-1	102%
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	130980-1	21 || 23 || RPD: 9	LCS-1	100%
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	130980-1	<10 || <10	LCS-1	95%
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	130980-1	<10 || <10	LCS-1	98%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	14/07/2015
TRHC6 - C9	mg/kg	[NT]	[NT]	130980-2	118%
TRHC6 - C10	mg/kg	[NT]	[NT]	130980-2	118%
Benzene	mg/kg	[NT]	[NT]	130980-2	118%
Toluene	mg/kg	[NT]	[NT]	130980-2	116%
Ethylbenzene	mg/kg	[NT]	[NT]	130980-2	116%
m+p-xylene	mg/kg	[NT]	[NT]	130980-2	120%
o-Xylene	mg/kg	[NT]	[NT]	130980-2	114%
naphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	130980-2	115%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	130980-5	14/07/2015 || 13/07/2015	130980-2	13/07/2015
Date analysed	-	130980-5	14/07/2015 || 14/07/2015	130980-2	14/07/2015
TRHC10 - C14	mg/kg	130980-5	<50 || <50	130980-2	95%
TRHC15 - C28	mg/kg	130980-5	<100 || 810	130980-2	98%
TRHC29 - C36	mg/kg	130980-5	<100 || 310	130980-2	68%
TRH>C10-C16	mg/kg	130980-5	<50 || 50	130980-2	95%
TRH>C16-C34	mg/kg	130980-5	<100 || 1000	130980-2	98%
TRH>C34-C40	mg/kg	130980-5	<100 || 140	130980-2	68%
Surrogate o-Terphenyl	%	130980-5	117 || 105 || RPD: 11	130980-2	99%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	130980-5	14/07/2015 || 13/07/2015	130980-2	13/07/2015
Date analysed	-	130980-5	14/07/2015 || 13/07/2015	130980-2	13/07/2015
Naphthalene	mg/kg	130980-5	0.2 || 0.4 || RPD: 67	130980-2	104%
Acenaphthylene	mg/kg	130980-5	<0.1 || 0.3	[NR]	[NR]
Acenaphthene	mg/kg	130980-5	0.1 || 5.6 || RPD: 193	[NR]	[NR]
Fluorene	mg/kg	130980-5	<0.1 || 3.7	130980-2	90%
Phenanthrene	mg/kg	130980-5	1.4 || 52 || RPD: 190	130980-2	96%
Anthracene	mg/kg	130980-5	0.3 || 14 || RPD: 192	[NR]	[NR]
Fluoranthene	mg/kg	130980-5	0.9 || 44 || RPD: 192	130980-2	94%
Pyrene	mg/kg	130980-5	0.9 || 42 || RPD: 192	130980-2	99%
Benzo(a)anthracene	mg/kg	130980-5	0.4 || 18 || RPD: 191	[NR]	[NR]
Chrysene	mg/kg	130980-5	0.4 || 14 || RPD: 189	130980-2	88%
Benzo(b,j+k)fluoranthene	mg/kg	130980-5	0.5 || 15 || RPD: 187	[NR]	[NR]
Benzo(a)pyrene	mg/kg	130980-5	0.3 || 14 || RPD: 192	130980-2	87%
Indeno(1,2,3-c,d)pyrene	mg/kg	130980-5	0.2 || 6.2 || RPD: 188	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	130980-5	<0.1 || 1.2	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(g,h,i)perylene	mg/kg	130980-5	0.2 || 4.6 || RPD: 183	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	130980-5	95 || 104 || RPD: 9	130980-2	101%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	14/07/2015
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	130980-2	90%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	130980-2	87%
Heptachlor	mg/kg	[NT]	[NT]	130980-2	98%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	130980-2	88%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	130980-2	90%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	130980-2	88%
Dieldrin	mg/kg	[NT]	[NT]	130980-2	98%
Endrin	mg/kg	[NT]	[NT]	130980-2	98%
pp-DDD	mg/kg	[NT]	[NT]	130980-2	95%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	130980-2	86%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	130980-2	88%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	14/07/2015
Azinphos-methyl (Guthion)	mg/kg	[NT]	[NT]	130980-2	91%
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	[NT]	[NT]	130980-2	106%
Chlorpyriphos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	[NT]	[NT]	130980-2	123%
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	130980-2	120%
Fenitrothion	mg/kg	[NT]	[NT]	130980-2	100%
Malathion	mg/kg	[NT]	[NT]	130980-2	85%
Parathion	mg/kg	[NT]	[NT]	130980-2	100%
Ronnel	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	130980-2	74%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	14/07/2015
Aroclor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	[NT]	[NT]	130980-2	117%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	130980-2	75%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	13/07/2015
Arsenic	mg/kg	[NT]	[NT]	130980-2	101%
Cadmium	mg/kg	[NT]	[NT]	130980-2	103%
Chromium	mg/kg	[NT]	[NT]	130980-2	105%
Copper	mg/kg	[NT]	[NT]	130980-2	110%
Lead	mg/kg	[NT]	[NT]	130980-2	105%
Mercury	mg/kg	[NT]	[NT]	130980-2	91%
Nickel	mg/kg	[NT]	[NT]	130980-2	105%
Zinc	mg/kg	[NT]	[NT]	130980-2	108%

QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	13/07/2015
Total Phenolics (as Phenol)	mg/kg	[NT]	[NT]	130980-2	107%
QUALITY CONTROL Misc Inorg - Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	130980-2	14/07/2015
Date analysed	-	[NT]	[NT]	130980-2	14/07/2015
pH 1:5 soil:water	pH Units	[NT]	[NT]	[NR]	[NR]
Electrical Conductivity 1:5 soil:water	µS/cm	[NT]	[NT]	[NR]	[NR]
Chloride, Cl 1:5 soil:water	mg/kg	[NT]	[NT]	130980-2	101%
Sulphate, SO4 1:5 soil:water	mg/kg	[NT]	[NT]	130980-2	103%

Report Comments:

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 130980-1 for As, Pb and Zn. Therefore a triplicate result has been issued as laboratory sample number 130980-11.

Asbestos: Excessive sample volume was provided for asbestos analysis. A portion of the supplied sample was sub-sampled according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.
Note: Samples 130980-1 to 8 were sub-sampled from bags and 130980-9 from jar provided by the client.

sTRH/PAH in soil: The RPD for duplicate results is accepted due to the non homogenous nature of the sample/s.

Asbestos ID was analysed by Approved Identifier: Paul Ching
Asbestos ID was authorised by Approved Signatory: Paul Ching

INS: Insufficient sample for this test
NA: Test not required
<: Less than

PQL: Practical Quantitation Limit
RPD: Relative Percent Difference
>: Greater than

NT: Not tested
NA: Test not required
LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	Douglas Partners Pty Ltd
Attention	Peter Oitmaa

Sample Login Details	
Your Reference	84944.00, Bellevue Hill
Envirolab Reference	130980
Date Sample Received	10/07/2015
Date Instructions Received	10/07/2015
Date Results Expected to be Reported	17/07/2015

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	10 Soils
Turnaround Time Requested	Standard
Temperature on receipt (°C)	4.0
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

Sample and Testing Details on following page

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enquiries@envirolabservices.com.au
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Sample Id	*Acid Extractable metals in soil*	*Asbestos ID - soils*	*Chloride, Cl 1:5 soil:water*	*Electrical Conductivity 1:5 soil:water*	*Organochlorine Pesticides in soil*	*Organophosphorus Pesticides*	*PAHs in Soil*	*PCBs in Soil*	*pH 1:5 soil:water*	*Sulphate, SO4 1:5 soil:water*	*svTRH (C10-C40) in Soil*	*Total Phenolics (as Phenol)*	*vTRH(C6-C10)/BTEXN in Soil*
BH2-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH2-2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH2-3.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH2-4.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH4-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH4-2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH4-3.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH4-4.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH10-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH10-2.0	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Bellevue Hill
Project No: 84944.00 Sampler: MP
Project Mgr: Peter Oitmaa Mob. Phone: 0412 574 518
Email: peter.oitmaa@douglaspartners.com.au
Date Required: Std. Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2067
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: 8 Heavy metals	TRH BTEX	PAH	OCP PCB OPP	Phenol	Asbesto	PH EC	Cl^- SO_4^{2-}	Notes
BH2	1.0	1	7/7	S	Jar/Bag									
	2.0	2												
	3.0	3												
	4.0	4												
BH4	1.0	5	3/7											
	2.0	6												
	3.0	7												
	4.0	8												
BH10	1.0	9	6/7											
	2.0	10			Jar									

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 130980
Date Received: 10/7/15
Time Received: 18:25
Received by: JYH.
Temp: Cool/Ambient
Cooling: Ice/Icepack 4.0
Security: Intact/Broken/None

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: P. Oitmaa Signed: PMO Date & Time: 10/7 1200hrs Received By: Date & Time: 10/7/15 18:25.
Relinquished by: Signed: Date & Time: Received By: Date & Time:

ENM Order and ENM Exemption

Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014

The excavated natural material order 2014

Introduction

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of excavated natural material to which 'the excavated natural material exemption 2014' applies. The requirements in this order apply in relation to the supply of excavated natural material for application to land as engineering fill or for use in earthworks.

1. Waste to which this order applies

1.1. This order applies to excavated natural material. In this order, excavated natural material means naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

a) been excavated from the ground, and
b) contains at least 98% (by weight) natural material, and
c) does not meet the definition of Virgin Excavated Natural Material in the Act.

Excavated natural material does not include material located in a hotspot; that has been processed; or that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate soils (PASS) or sulfidic ores.

2. Persons to whom this order applies

2.1. The requirements in this order apply, as relevant, to any person who supplies excavated natural material, that has been generated, processed or recovered by the person.

2.2. This order does not apply to the supply of excavated natural material to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

3. Duration

3.1. This order commences on 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

4. Generator requirements

The EPA imposes the following requirements on any generator who supplies excavated natural material.

Sampling requirements

4.1. On or before supplying excavated natural material, the generator must:

4.1.1. Prepare a written sampling plan which includes a description of sample preparation and storage procedures for the excavated natural material.

4.1.2. Undertake sampling and testing of the excavated natural material as required under clauses 4.2, 4.3, and 4.4 below. The sampling must be carried out in accordance with the written sampling plan.

4.2. The generator must undertake sampling and analysis of the material for ASS and PASS, in accordance with the NSW Acid Sulfate Soil Manual, Acid Sulfate Soils Management Advisory Council, 1998 and the updated Laboratory Methods Guidelines version 2.1 – June 2004 where:

4.2.1. the pH measured in the material is below 5, and/or

4.2.2. the review of the applicable Acid Sulfate Soil Risk Maps (published by the former Department of Land and Water Conservation and available at http://www.environment.nsw.gov.au/acidsulfatesoil/riskmaps.htm) indicates the potential presence of ASS.

4.3. For stockpiled material, the generator must:

4.3.1. undertake sampling in accordance with Australian Standard 1141.3.1-2012 Methods for sampling and testing aggregates – Sampling – Aggregates (or equivalent);

4.3.2. undertake characterisation sampling by collecting the number of samples listed in Column 2 of Table 1 with respect to the quantity of the waste listed in Column 1 of Table 1 and testing each sample for the chemicals and other attributes listed in Column 1 of Table 4. For the purposes of characterisation sampling the generator must collect:

4.3.2.1. composite samples for attributes 1 to 10 and 18 in Column 1 of Table 4.

4.3.2.2. discrete samples for attributes 11 to 17 in Column 1 of Table 4.

4.3.2.3. The generator must carry out sampling in a way that ensures that the samples taken are representative of the material from the entire stockpile. All parts of the stockpile must be equally accessible for sampling.

4.3.2.4. for stockpiles greater than 4,000 tonnes the number of samples described in Table 1 must be repeated.

4.3.3. store the excavated natural material appropriately until the characterisation test results are validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 4 and the absolute maximum concentration or other value listed in Column 3 of Table 4.

Table 1

Sampling of Stockpiled Material		
Column 1	**Column 2**	**Column 3**
Quantity (tonnes)	**Number of samples**	**Validation**
<500	3	Required
500 – 1,000	4	
1,000 – 2,000	5	
2,000 – 3,000	7	
3,000 – 4,000	10	

4.4. For in situ material, the generator must:

4.4.1. undertake sampling by collecting discrete samples. Compositing of samples is not permitted for in-situ materials.

4.4.2. undertake characterisation sampling for the range of chemicals and other attributes listed in Column 1 of Table 4 according to the requirements listed in Columns 1, 2 and 3 of Table 2. When the ground surface is not comprised of soil (e.g. concrete slab), samples must be taken at the depth at which the soil commences.

4.4.3. undertake sampling at depth according to Column 1 of Table 3.

4.4.4. collect additional soil samples (and analyse them for the range of chemicals and other attributes listed in Column 1 of Table 4), at any depth exhibiting discolouration, staining, odour or other indicators of contamination inconsistent with soil samples collected at the depth intervals indicated in Table 3.

4.4.5. segregate and exclude hotspots identified in accordance with Table 2, from material excavated for reuse.

4.4.6. subdivide sites larger than 50,000 m² into smaller areas and sample each area as per Table 2.

4.4.7. store the excavated natural material appropriately until the characterisation test results are validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 4 and the absolute maximum concentration or other value listed in Column 3 of Table 4.

Table 2

***In Situ* Sampling at surface**				
Column 1	**Column 2**	**Column 3**	**Column 4**	**Column 5**
Size of *in situ* area (m^2)	**Number of systematic sampling points recommended**	**Distance between two sampling points** (m)	**Diameter of the hot spot that can be detected with 95% confidence** (m)	**Validation**
500	5	10.0	11.8	Required
1000	6	12.9	15.2	
2000	7	16.9	19.9	
3000	9	18.2	21.5	
4000	11	19.1	22.5	
5000	13	19.6	23.1	
6000	15	20.0	23.6	
7000	17	20.3	23.9	
8000	19	20.5	24.2	
9000	20	21.2	25.0	
10,000	21	21.8	25.7	
15,000	25	25.0	28.9	
20,000	30	25.8	30.5	
25,000	35	26.7	31.5	
30,000	40	27.5	32.4	
35,000	45	27.9	32.9	
40,000	50	28.3	33.4	
45,000	52	29.3	34.6	
50,000	55	30.2	35.6	

Table 2 has been taken from NSW EPA 1995, *Contaminated Sites Sampling Design Guidelines*, NSW Environment Protection Authority.

Table 3

***In Situ* Sampling at Depth**	
Column 1	**Column 2**
Sampling Requirements *	**Validation**
1 soil sample at 1.0 m bgl from each surface sampling point followed by 1 soil sample for every metre thereafter. From 1.0 m bgl, sample at the next metre interval until the proposed depth of excavation of the material is reached. If the proposed depth of excavation is between 0.5 to 0.9 m after the last metre interval, sample at the base of the proposed depth of excavation.	Required if the depth of excavation is equal to or greater than 1.0 m bgl

* Refer to Notes for examples

Chemical and other material requirements

4.5. The generator must not supply excavated natural material waste to any person if, in relation to any of the chemical and other attributes of the excavated natural material:

4.5.1. The chemical concentration or other attribute of any sample collected and tested as part of the characterisation of the excavated natural material exceeds the absolute maximum concentration or other value listed in Column 3 of Table 4:

4.5.2. The average concentration or other value of that attribute from the characterisation of the excavated natural material (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 4.

4.6. The absolute maximum concentration or other value of that attribute in any excavated natural material supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 3 of Table 4.

Table 4

Column 1	Column 2	Column 3
Chemicals and other attributes	**Maximum average concentration for characterisation** (mg/kg 'dry weight' unless otherwise specified)	**Absolute maximum concentration** (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	1
2. Cadmium	0.5	1
3. Lead	50	100
4. Arsenic	20	40
5. Chromium (total)	75	150
6. Copper	100	200
7. Nickel	30	60
8. Zinc	150	300
9. Electrical Conductivity	1.5 dS/m	3 dS/m
10. pH *	5 to 9	4.5 to 10
11. Total Polycyclic Aromatic Hydrocarbons (PAHs)	20	40
12. Benzo(a)pyrene	0.5	1
13. Benzene	NA	0.5
14. Toluene	NA	65
15. Ethyl-benzene	NA	25
16. Xylene	NA	15
17. Total Petroleum Hydrocarbons C_{10}-C_{36}	250	500
18. Rubber, plastic, bitumen, paper, cloth, paint and wood	0.05%	0.10%

* The ranges given for pH are for the minimum and maximum acceptable pH values in the excavated natural material.

Test methods

4.7. The generator must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.

4.8. The generator must ensure that the chemicals and other attributes (listed in Column 1 of Table 4) in the excavated natural material it supplies are tested in accordance with the test methods specified below or other equivalent analytical methods. Where an equivalent analytical method is used the detection limit must be equal to or less than that nominated for the given method below.

4.8.1. Test methods for measuring the mercury concentration.

4.8.1.1. Analysis using USEPA SW-846 Method 7471B Mercury in solid or semisolid waste (manual cold vapour technique), or an equivalent analytical method with a detection limit < 20% of the stated absolute maximum concentration in Column 3 of Table 2 (i.e. < 0.20 mg/kg dry weight).

4.8.1.2. Report as mg/kg dry weight.

4.8.2. Test methods for measuring chemicals 2 to 8.

4.8.2.1. Sample preparation by digesting using USEPA SW-846 Method 3051A Microwave assisted acid digestion of sediments, sludges, soils, and oils (or an equivalent analytical method).

4.8.2.2. Analysis using USEPA SW-846 Method 6010C Inductively coupled plasma - atomic emission spectrometry, or an equivalent analytical method with a detection limit < 10% of the stated absolute maximum concentration in Column 3 of Table 2, (e.g. 10 mg/kg dry weight for lead).

4.8.2.3. Report as mg/kg dry weight.

4.8.3. Test methods for measuring electrical conductivity and pH.

4.8.3.1. Sample preparation by mixing 1 part excavated natural material with 5 parts distilled water.

4.8.3.2. Analysis using Method 103 (pH) and 104 (Electrical Conductivity) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).

4.8.3.3. Report electrical conductivity in deciSiemens per metre (dS/m).

4.8.4. Test method for measuring Polynuclear Aromatic Hydrocarbons (PAHs) and benzo(a)pyrene.

4.8.4.1. Analysis using USEPA SW-846 Method 8100 Polynuclear Aromatic Hydrocarbons (or an equivalent analytical method).

4.8.4.2. Calculate the sum of all 16 PAHs for total PAHs.

4.8.4.3. Report total PAHs as mg/kg dry weight.

4.8.4.4. Report benzo(a)pyrene as mg/kg.

4.8.5. Test method for measuring benzene, toluene, ethylbenzene and xylenes (BTEX).

4.8.5.1. Method 501 (Volatile Alkanes and Monocyclic Aromatic Hydrocarbons) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).

4.8.5.2. Report BTEX as mg/kg.

4.8.6. Test method for measuring Total Petroleum Hydrocarbons (TPH).

4.8.6.1. Method 506 (Petroleum Hydrocarbons) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).

4.8.6.2. Report as mg/kg dry weight.

4.8.7. Test method for measuring rubber, plastic, bitumen, paper, cloth, paint and wood.

4.8.7.1. NSW Roads & Traffic Authority Test Method T276 Foreign Materials Content of Recycled Crushed Concrete (or an equivalent method).

4.8.7.2. Report as percent.

Notification

4.9. On or before each transaction, the generator must provide the following to each person to whom the generator supplies the excavated natural material:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the excavated natural material exemption, or a link to the EPA website where the excavated natural material exemption can be found; and
- a copy of the excavated natural material order, or a link to the EPA website where the excavated natural material order can be found.

Record keeping and reporting

4.10. The generator must keep a written record of the following for a period of six years:

- the sampling plan required to be prepared under clause 4.1.1;
- all characterisation sampling results in relation to the excavated natural material supplied;
- the volume of detected hotspot material and the location;
- the quantity of the excavated natural material supplied; and
- the name and address of each person to whom the generator supplied the excavated natural material.

4.11. The generator must provide, on request, the characterisation and sampling results for that excavated natural material supplied to the consumer of the excavated natural material.

5. Definitions

In this order:

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

Bgl means below ground level, referring to soil at depth beneath the ground surface.

composite sample means a sample that combines five discrete sub-samples of equal size into a single sample for the purpose of analysis.

consumer means a person who applies, or intends to apply excavated natural material to land.

discrete sample means a sample collected and analysed individually that will not be composited.

generator means a person who generates excavated natural material for supply to a consumer.

hotspot means a cylindrical volume which extends through the soil profile from the ground surface to the proposed depth of excavation, where the level of any contaminant listed in Column 1 of Table 2 is greater than the absolute maximum concentration in Column 3 of Table 2.

***in situ* material** means material that exists on or below the ground level. It does not include stockpiled material.

***in situ* sampling** means sampling undertaken on *in situ* material.

N/A means not applicable.

stockpiled material means material that has been excavated from the ground and temporarily stored on the ground prior to use.

systematic sampling means sampling at points that are selected at even intervals and are statistically unbiased.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of excavated natural material that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of excavated natural material, the first supply of excavated natural material as required under the arrangement.

Manager Waste Strategy and Innovation

Environment Protection Authority

(by delegation)

Notes

The EPA may amend or revoke this order at any time. It is the responsibility of each of the generator and processor to ensure it complies with all relevant requirements of the most current order. The current version of this order will be available on ' www.epa.nsw.gov.au

In gazetting or otherwise issuing this order, the EPA is not in any way endorsing the supply or use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this order are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this order nor the accompanying exemption guarantee that the environment, human health or agriculture will not be harmed.

Any person or entity which supplies excavated natural material should assess whether the material is fit for the purpose the material is proposed to be used for, and whether this use may cause harm. The supplier may need to seek expert engineering or technical advice.

Regardless of any exemption or order provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The supply of excavated natural material remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of this order, is guilty of an offence and subject to prosecution.

This order does not alter the requirements of any other relevant legislation that must be met in supplying this material, including for example, the need to prepare a Safety Data Sheet. Failure to comply with the conditions of this order constitutes an offence under clause 93 of the Waste Regulation.

Examples

In situ sampling at depth

Example 1.

If the proposed depth of ENM excavation is between 1 m bgl and 1.4 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- No further depth sampling after 1 m bgl, unless required under section 4.4.4.

Example 2.

If the proposed depth of ENM excavation is at 1.75 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- 1 sample at 1.75 m bgl.
- No further depth sampling after 1.75 m bgl, unless required under section 4.4.4.

Example 3.

If the proposed depth of ENM excavation is at 2.25 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- 1 sample at 2 m bgl.
- No further depth sampling after 2 m bgl, unless required under section 4.4.4.

Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014

The excavated natural material exemption 2014

Introduction

This exemption:

- is issued by the Environment Protection Authority (EPA) under clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation); and
- exempts a consumer of excavated natural material from certain requirements under the *Protection of the Environment Operations Act 1997* (POEO Act) and the Waste Regulation in relation to the application of that waste to land, provided the consumer complies with the conditions of this exemption.

This exemption should be read in conjunction with 'the excavated natural material order 2014'.

1. Waste to which this exemption applies

1.1. This exemption applies to excavated natural material that is, or is intended to be, applied to land as engineering fill or for use in earthworks.

1.2. Excavated natural material is naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

a) been excavated from the ground, and
b) contains at least 98% (by weight) natural material, and
c) does not meet the definition of Virgin Excavated Natural Material in the Act.

Excavated natural material does not include material located in a hotspot; that has been processed; or that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate soils (PASS) or sulfidic ores.

2. Persons to whom this exemption applies

2.1. This exemption applies to any person who applies or intends to apply excavated natural material to land as set out in 1.1.

3. Duration

3.1. This exemption commences on 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

4. Premises to which this exemption applies

4.1. This exemption applies to the premises at which the consumer's actual or intended application of excavated natural material is carried out.

5. Revocation

5.1. 'The excavated natural material exemption 2012' which commenced 19 October 2012 is revoked from 24 November 2014.

6. Exemption

6.1. Subject to the conditions of this exemption, the EPA exempts each consumer from the following provisions of the POEO Act and the Waste Regulation in relation to the consumer's actual or intended application of excavated natural material to land as engineering fill or for use in earthworks at the premises:

- section 48 of the POEO Act in respect of the scheduled activities described in clauses 39 of Schedule 1 of the POEO Act;
- Part 4 of the Waste Regulation;
- section 88 of the POEO Act; and
- clause 109 and 110 of the Waste Regulation.

6.2. The exemption does not apply in circumstances where excavated natural material is received at the premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land) or clause 40 'waste disposal' (thermal treatment) of Schedule 1 of the POEO Act.

7. Conditions of exemption

The exemption is subject to the following conditions:

7.1. At the time the excavated natural material is received at the premises, the material must meet all chemical and other material requirements for excavated natural material which are required on or before the supply of excavated natural material under 'the excavated natural material order 2014'.

7.2. The excavated natural material can only be applied to land as engineering fill or for use in earthworks.

7.3. The consumer must keep a written record of the following for a period of six years:

- the quantity of any excavated natural material received; and
- the name and address of the supplier of the excavated natural material received.

7.4. The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request.

7.5. The consumer must ensure that any application of excavated natural material to land must occur within a reasonable period of time after its receipt.

8. Definitions

In this exemption:

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

consumer means a person who applies, or intends to apply excavated natural material to land.

Manager Waste Strategy and Innovation

Environment Protection Authority

(by delegation)

Notes

The EPA may amend or revoke this exemption at any time. It is the responsibility of the consumer to ensure they comply with all relevant requirements of the most current exemption The current version of this exemption will be available on www.epa.nsw.gov.au

In gazetting or otherwise issuing this exemption, the EPA is not in any way endorsing the use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this exemption are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this exemption nor the accompanying order guarantee that the environment, human health or agriculture will not be harmed.

The consumer should assess whether or not the excavated natural material is fit for the purpose the material is proposed to be used for, and whether this use will cause harm. The consumer may need to seek expert engineering or technical advice.

Regardless of any exemption provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The receipt of excavated natural material remains subject to other relevant environmental regulations in the POEO Act and the Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of having an exemption, is guilty of an offence and subject to prosecution.

This exemption does not alter the requirements of any other relevant legislation that must be met in utilising this material, including for example, the need to prepare a Safety Data Sheet (SDS).

Failure to comply with the conditions of this exemption constitutes an offence under clause 91 of the Waste Regulation.

Notes About this Report

About this Report

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Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

Sampling Methods

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Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Soil Descriptions

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Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726, Geotechnical Site Investigations Code. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	20 - 63
Medium gravel	6 - 20
Fine gravel	2.36 - 6
Coarse sand	0.6 - 2.36
Medium sand	0.2 - 0.6
Fine sand	0.075 - 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	20 - 35%	Sandy Clay
Slightly	12 - 20%	Slightly Sandy Clay
With some	5 - 12%	Clay with some sand
With a trace of	0 - 5%	Clay with a trace of sand

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	vs	<12
Soft	s	12 - 25
Firm	f	25 - 50
Stiff	st	50 - 100
Very stiff	vst	100 - 200
Hard	h	>200

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	SPT N value	CPT qc value (MPa)
Very loose	vl	<4	<2
Loose	l	4 - 10	2 -5
Medium dense	md	10 - 30	5 - 15
Dense	d	30 - 50	15 - 25
Very dense	vd	>50	>25

Soil Descriptions

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Filling - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

Rock Strength

Rock strength is defined by the Point Load Strength Index ($Is_{(50)}$) and refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects. The test procedure is described by Australian Standard 4133.4.1 - 1993. The terms used to describe rock strength are as follows:

Term	Abbreviation	Point Load Index $Is_{(50)}$ MPa	Approx Unconfined Compressive Strength MPa*
Extremely low	EL	<0.03	<0.6
Very low	VL	0.03 - 0.1	0.6 - 2
Low	L	0.1 - 0.3	2 - 6
Medium	M	0.3 - 1.0	6 - 20
High	H	1 - 3	20 - 60
Very high	VH	3 - 10	60 - 200
Extremely high	EH	>10	>200

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Extremely weathered	EW	Rock substance has soil properties, i.e. it can be remoulded and classified as a soil but the texture of the original rock is still evident.
Highly weathered	HW	Limonite staining or bleaching affects whole of rock substance and other signs of decomposition are evident. Porosity and strength may be altered as a result of iron leaching or deposition. Colour and strength of original fresh rock is not recognisable
Moderately weathered	MW	Staining and discolouration of rock substance has taken place
Slightly weathered	SW	Rock substance is slightly discoloured but shows little or no change of strength from fresh rock
Fresh stained	Fs	Rock substance unaffected by weathering but staining visible along defects
Fresh	Fr	No signs of decomposition or staining

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with some fragments
Fractured	Core lengths of 40-200 mm with some shorter and longer sections
Slightly Fractured	Core lengths of 200-1000 mm with some shorter and loner sections
Unbroken	Core lengths mostly > 1000 mm

Rock Descriptions

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or better. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

Symbols & Abbreviations

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Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core Drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

Symbols & Abbreviations

Graphic Symbols for Soil and Rock

General


Asphalt


Road base


Concrete


Filling

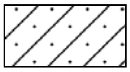
Soils


Topsoil

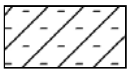

Peat


Clay

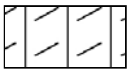

Silty clay

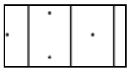

Sandy clay

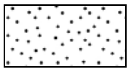

Gravelly clay

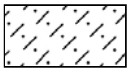

Shaly clay

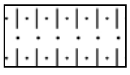

Silt


Clayey silt


Sandy silt

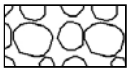

Sand

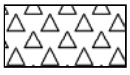

Clayey sand


Silty sand


Gravel


Sandy gravel


Cobbles, boulders

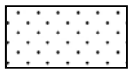

Talus

Sedimentary Rocks

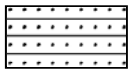

Boulder conglomerate

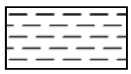

Conglomerate


Conglomeratic sandstone

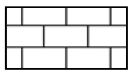

Sandstone


Siltstone


Laminite

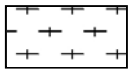

Mudstone, claystone, shale

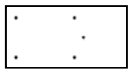

Coal


Limestone

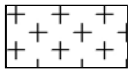
Metamorphic Rocks

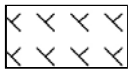

Slate, phyllite, schist

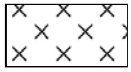

Gneiss

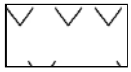

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

APPENDIX K – GROUND WATER MONITORING

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Memorandum

To	Cranbrook School	Mark Flanagan	Via Aconex	
From	Peter Oitmaa		**Date**	16 July 2018
Subject	Groundwater Monitoring Results Cranbrook School, Bellevue Hill		**Project No.**	84944.02

This memorandum outlines the results of groundwater monitoring undertaken in three wells on the above site. A data logger was installed in each well and was programed to record data at hourly intervals. The monitoring commenced on 31 January 2018 and the loggers were removed from the wells on 5 July 2018. The results have also been adjusted for atmospheric pressure which has resulted in very small changes to the previous results reported.

A summary of the monitoring undertaken is provided in Table 1.

Table 1: Summary of Groundwater Monitoring 31 Jan 2018 to 5 July 2018

Details	BH101	BH204	BH205
RL Top of Well	16.1	34.1	27.4
Well Depth	13.7	28.2	23.0
RL Base of Well	2.4	5.9	4.4
Maximum Water Depth	>12.6	22.1	22.7
Minimum Water Depth	>12.6	19.0	19.4
Average Water Depth	>12.6	19.7	19.6
Maximum Water RL	<3.5	15.1	8.0
Minimum Water RL	<3.5	12.0	4.7
Average Water RL	<3.5	14.4	7.9

Note: All depths in m. All RLs in m to AHD

Graphs showing the variations in measurements in BH204 and BH205 are attached. The graphs show very little variation over the monitoring period. Well BH101 was dry to 12.6 m depth throughout the monitoring period and the lower 1.1 m appears to have silted up since installation.

Comparison of measured levels with the borehole logs indicate that the groundwater was within the sands at or slightly above the bedrock surface which is expected.

We trust the above information meets your present requirements.

Yours faithfully,
Douglas Partners Pty Ltd

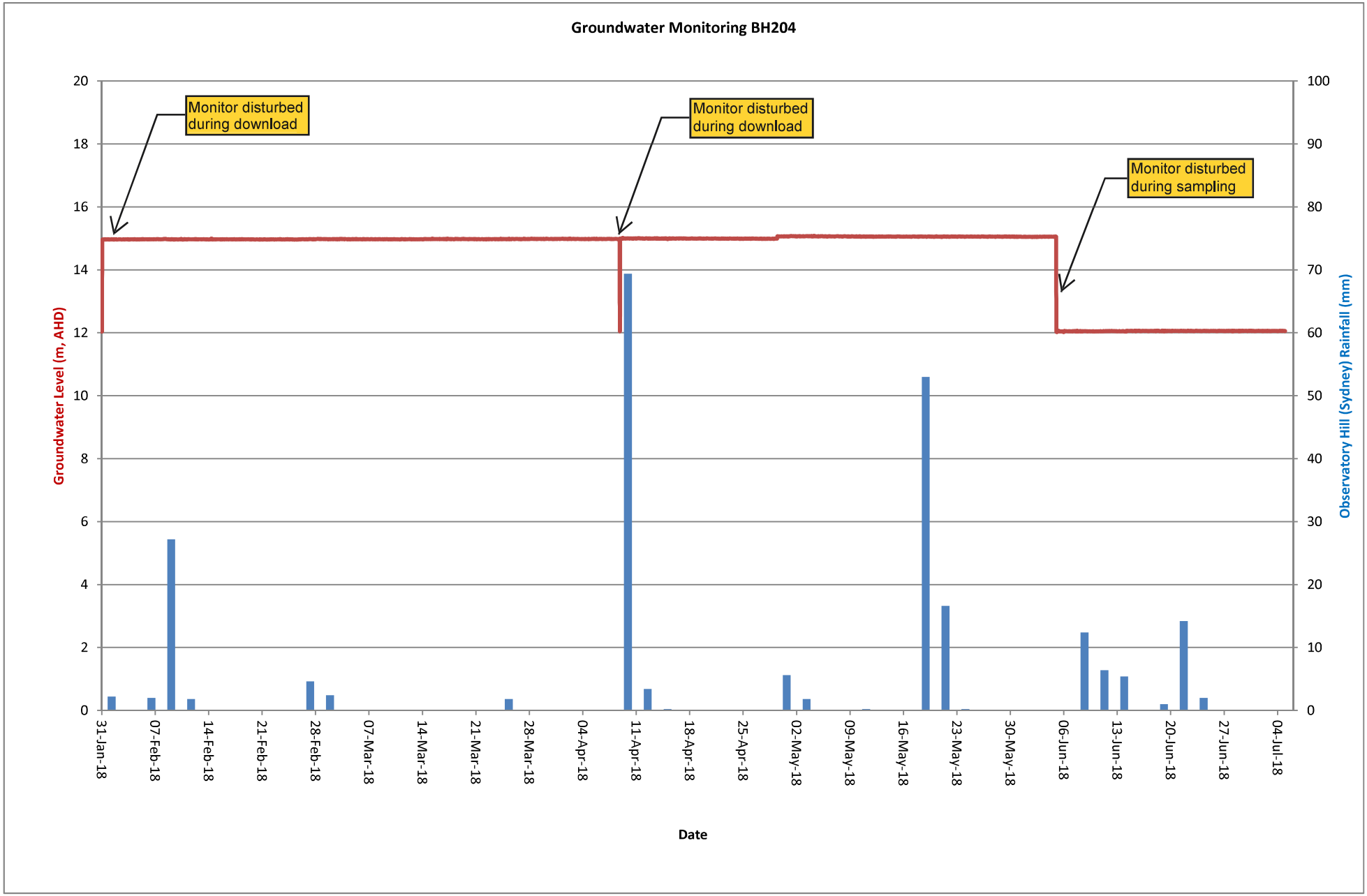
Peter Oitmaa
Principal

Reviewed by

Scott Easton
Principal

Attachments: Graphs for BH204 and BH205
Notes About this Report

Douglas Partners
Geotechnics | Environment | Groundwater



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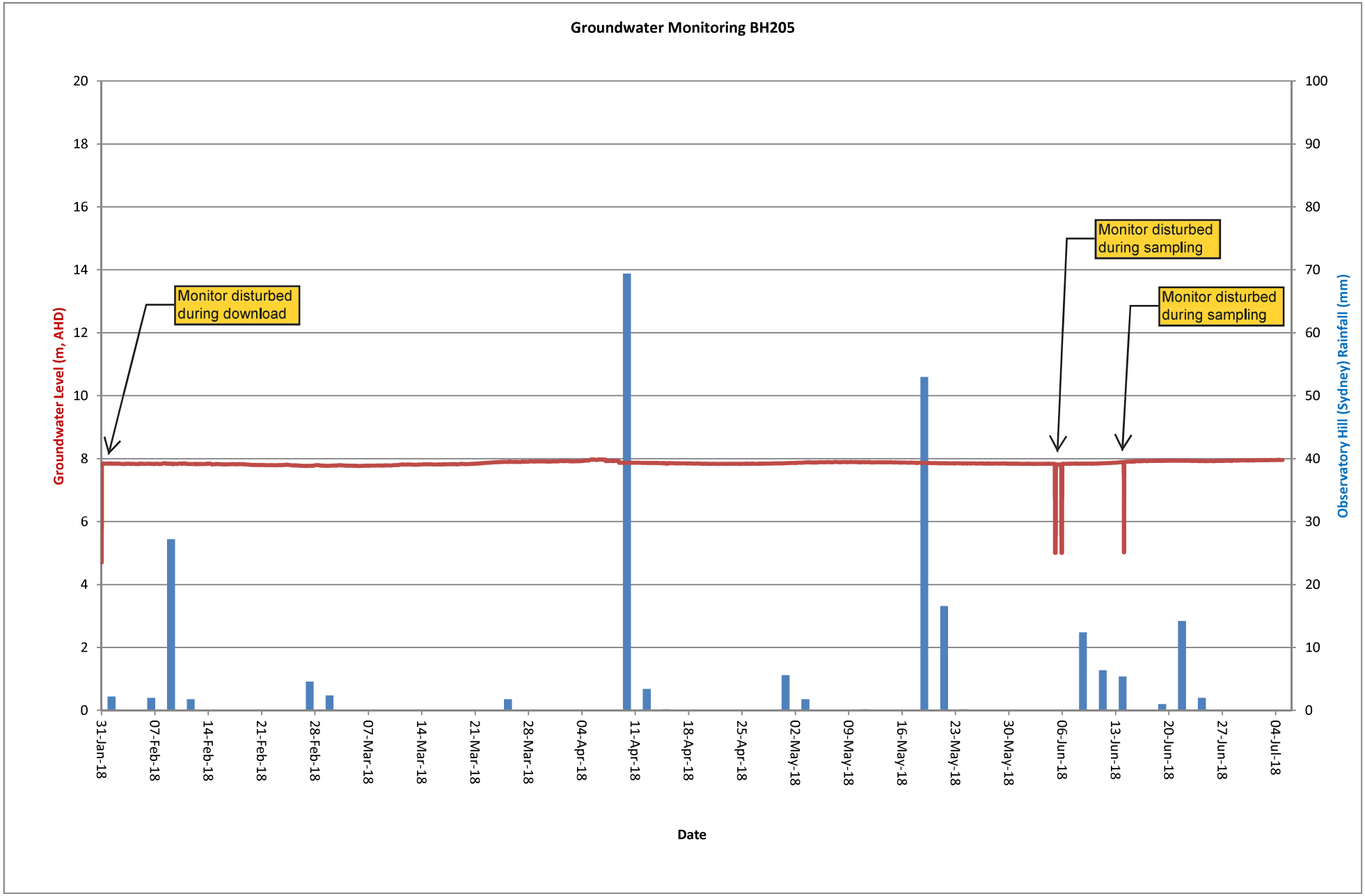

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

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