Detailed Site Investigation
24-26 Railway Parade
Westmead NSW

Drill Pty Ltd

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Executive Summary

First Point Projects, on Behalf of Drill Pty Ltd (Drill), engaged Prensa Pty Ltd (Prensa) to undertake a targeted Detailed Site Investigation (DSI) at Westmead Shopping Village, 24-26 Railway Parade, Westmead NSW (the site). Prensa previously undertook a Preliminary Site Investigation (PSI) at the site in April 2017, which concluded that there was some potential for soil contamination associated with the following potential areas of environmental concern (AEC):

- Operational and abandoned triple interceptor traps (TITs);
- Operation of a dry cleaners on site;
- Fill material surrounding and beneath site buildings; and
- Asbestos materials identified on site.

The objective of the DSI was to investigate these AEC to identify any soil contamination that would impede the redevelopment of the site and to assist in Drills development application. The scope of work for the DSI comprised:

- Drilling of 8 boreholes to 3.0 meters below ground level (mBGL); and
- Collection of soil samples from near surface, 0.5 mBGL, 1.0 mBGL and every meter thereafter.

A summary of the investigation results for each AEC is provided below:

- Areas of former TITs

Based on visual assessment and laboratory data, limited impact associated with TITs was identified. Sample location BH08_0.2-0.3 showed detections of chlorinated hydrocarbon (tetrachloroethene (PCE)), however this was isolated to the surface sample. Although the detection was relatively low, further investigation in this area is required as PCE is a commonly used dry cleaning product, suggesting potential spills from chemicals stored on site.

- Area adjacent dry cleaners

Based on visual assessment and laboratory data, no impact associated with the operation of the dry cleaners at this location was identified.

- Areas surrounding kiosk/buildings

Based on visual assessment and laboratory data, no impact associated with fill material at this location was identified.

Given there was limited access at the site, additional investigation and delineation around BH08 is required to determine the extent of the PCE contamination following demolition of site structures. Decommissioning of the TITs should be undertaken, which should include validation of the excavation footprints. Further assessment of the soil immediately beneath the building footprint should be conducted at the time of demolition. Additionally, asbestos building materials on site will need to be managed appropriately during demolition/construction.

Statement of Limitations

This document has been prepared in response to specific instructions from Drill Pty Ltd to whom the report has been addressed. The work has been undertaken with the usual care and thoroughness of the consulting profession. The work is based on generally accepted standards, practices of the time the work was undertaken. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The report has been prepared for the use by Drill Pty Ltd and the use of this report by other parties may lead to misinterpretation of the issues contained in this report. To avoid misuse of this report, Prensa advise that the report should only be relied upon by Drill Pty Ltd and those parties expressly referred to in the introduction of the report. The report should not be separated or reproduced in part and Prensa should be retained to assist other professionals who may be affected by the issues addressed in this report to ensure the report is not misused in any way.

Prensa is not a professional quantity surveyor (QS) organisation. Any areas, volumes, tonnages or any other quantities noted in this report are indicative estimates only. The services of a professional QS organisation should be engaged if quantities are to be relied upon.

Sampling Risks

Prensa acknowledges that any scientifically designed sampling program cannot guarantee all sub-surface contamination will be detected. Sampling programs are designed based on known or suspected site conditions and the extent and nature of the sampling and analytical programs will be designed to achieve a level of confidence in the detection of known or suspected subsurface contamination. The sampling and analytical programs adopted will be those that maximises the probability of identifying contaminants. Drill Pty Ltd must therefore accept a level of risk associated with the possible failure to detect certain sub-surface contamination where the sampling and analytical program misses such contamination. Prensa will detail the nature and extent of the sampling and analytical program used in the investigation in the investigation report provided.

Environmental site assessments identify actual subsurface conditions only at those points where samples are taken and when they are taken. Soil contamination can be expected to be non-homogeneous across the stratified soils where present on site, and the concentrations of contaminants may vary significantly within areas where contamination has occurred. In addition, the migration of contaminants through groundwater and soils may follow preferential pathways, such as areas of higher permeability, which may not be intersected by sampling events. Subsurface conditions including contaminant concentrations can also change over time. For this reason, the results should be regarded as representative only.

Drill Pty Ltd recognises that sampling of subsurface conditions may result in some cross contamination. All care will be taken and the industry standards used to minimise the risk of such cross contamination occurring, however, Drill Pty Ltd recognises this risk and waives any claims against Prensa and agrees to defend, indemnify and hold Prensa harmless from any claims or liability for injury or loss which may arise as a result of alleged cross contamination caused by sampling.

Reliance on Information Provided by Others

Prensa notes that where information has been provided by other parties in order for the works to be undertaken, Prensa cannot guarantee the accuracy or completeness of this information. Drill Pty Ltd therefore waives any claim against the company and agrees to indemnify Prensa for any loss, claim or liability arising from inaccuracies or omissions in information provided to Prensa by third parties. No indications were found during our investigations that information contained in this report, as provided to Prensa, is false.

Recommendations for Further Study

The industry recognised methods used in undertaking the works may dictate a staged approach to specific investigations. The findings therefore of this report may represent preliminary findings in accordance with these industry recognised methodologies. In accordance with these methodologies, recommendations contained in this report may include a need for further investigation or analytical analysis. The decision to accept these recommendations and incur additional costs in doing so will be at the sole discretion of Drill Pty Ltd and Prensa recognises that that Drill Pty Ltd will consider their specific needs and the business risks involved. Prensa does not accept any liability for losses incurred as a result of Drill Pty Ltd not accepting the recommendations made within this report.

Table of Contents

1 Introduction

First Point Projects engaged Prensa Pty Ltd (Prensa) to undertake a detailed site investigation (DSI) on behalf of Drill Pty Ltd at 24-26 Railway Parade, Westmead (the site). The legal description of the site is Lot 1 in Deposited Plan (DP) 952720, Lot 1 in Deposited Plan (DP) 972068 and Lot 10 in Deposited Plan (DP) 605684. The location and boundary of the site are presented in **Figure 1 & Figure 2**, provided in the 'Figures' section of this report.

2 Background

It is understood that Drill wish to redevelop the site and as such require a DSI to be undertaken as part of the Development Application to City of Parramatta Council (Council). The proposed development is understood to comprise a 15 level mixed use building with three levels of basement parking, loading dock, ground level commercial/retail space, medical centre, hotel and residential apartments on the upper levels.

Prensa previously undertook a Preliminary Site Investigation (PSI) at the site in April 2017 (Report reference Prensa (2017) *56506 FPP Westmead PSI*) to provide an indication of the potential for contamination to exist at the site as a result of current and/or historical activities. The PSI identified the following areas of environmental concern (AECs):

- Potential misuse and leaks/spills of the three triple interceptor traps (TITs) within the northern carpark;
- Potential leaks and spills arising from the storage of chemicals and operation of the dry cleaners on site;
- The demolition of historical residential premises on site resulting in contaminated soil/fill material;
- The potential for contaminated fill material to have been imported and used on-site during levelling activities when construction of the buildings occurred; and
- Asbestos materials noted within buildings on site that will require appropriate management and consideration during demolition works.

The above AECs have been identified on **Figure 4,** in the 'Figures' section of this report. Based on the findings of the PSI, Drill commissioned Prensa to undertake this DSI to provide an indication of the potential presence of soil contamination identified in the AECs. Fieldwork was undertaken on the 20th and 21st June 2018, and the findings of the DSI are summarised within this report.

3 Objective

The objective of this DSI was to assess the potential for soil contamination to be present in the vicinity of the areas of environmental concern, in light of the proposed redevelopment of the site as B4 – mixed use land zoning.

4 Scope of Works

To achieve the objectives of the DSI, Prensa undertook the following scope of works:

- Fieldwork preliminaries comprising:

  - Preparation of a Site-Specific Safety Plan (SSP); and
  - Dial before you dig (DBYD) search.
- Fieldwork comprising:
  - Service location of underground services with a qualified service locator;
  - Ground penetrating radar (GPR) particularly around the location of the TITs;
  - Concrete coring at each borehole location;
  - Drilling of eight boreholes (BH01-BH08) to a maximum depth of 3.0 meters below ground level (mBGL) using a hand auger to 1.2 mBGL and Geoprobe drill rig (push tube) to 3.0 mBGL; The locations of the eight boreholes have been presented on **Figure 3** in the 'Figures' section of this report. The rationale for the borehole locations is explained in Section 12.2.
  - Collection of soil samples from each borehole;
  - Field screening of soil samples using a photo-ionisation detector (PID); and
  - Re-instatement of boreholes using soil cuttings and rapid-set concrete where required.
- Laboratory analysis of primary soil samples and quality control (QC) samples at National Association of Testing Authorities (NATA) accredited laboratories for contaminants of potential concern (CoPC); and
- Preparation of this DSI report.

5 Technical Framework

Works were undertaken in general accordance with the following:

- NSW Work Health and Safety Act 2011 (WHS Act 2011);
- NSW Work Health and Safety Regulation 2017 (WHS Regulation 2017);
- The Protection of the Environment Operations Act 1997 (POEO Act 1997);
- NSW Environment Protection Authority (EPA) Protection of the Environment Operations (Waste) Regulation, 2014 (POEO Waste Regulation 2014);
- Contaminated Land Management (CLM) Act 1997 (CLM Act 1997);
- National Environment Protection Council, National Environment Protection (Assessment of Site Contamination) Measure, 1999 (April 2013) (NEPM 2013);
- NSW Environment Protection Authority (EPA) Waste Classification Guidelines: Part 1 – Classifying Waste, 2014 (NSW EPA Waste Classification Guidelines 2014);
- NSW Office of Environment and Heritage (OEH), Guidelines for Consultants Reporting on Contaminated Sites, 2011 (OEH 2011);
- NSW Environment Protection Authority (EPA) Protection of the Environment Operations (Waste) Regulation, 2014 (NSW EPA 2014);
- Australian Standard (AS) 4482.1, Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile Compounds, 2005;
- AS 4482.2, Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances, 1999 (AS 4482.2); and
- AS 1726 Geotechnical Site Investigations, 1993 (AS 1726).

6 Data Quality Objectives

Systematic planning and verification was deemed critical for the successful implementation of the DSI to ensure that the data collected is reliable and representative. A process for establishing data quality objectives (DQOs) for an investigation has been defined by the United States Environmental Protection Agency (US EPA). That process has been adopted in AS 4482.1-2005 and referenced in NEPM 2013.

The DQO process is a seven step iterative planning approach used to plan for environmental data collection activities. It provides a systemic approach for defining the criteria that a data collection design should satisfy, including when, where and how to collect samples or measurements, determination of tolerable decision error rates and the number of samples or measurements that should be collected. DQOs ensure that:

- The study objectives are set;
- Appropriate types of data are collected (based on proposed land use and CoPC); and
- The tolerance levels are set for potential decision making errors.

The seven step process for this investigation and data quality indicators adopted are discussed and summarised in **Appendix A**.

7 Site Description

7.1 Site Location and Details

Site identification details are summarised in Table 1 and the location of the site is shown on **Figure 1** in the 'Figures' section of this report.

Table 1: Site Identification Details

Address	24-26 Railway Parade, Westmead NSW
Site Area	Approximately 2,540 m²
Title Identification	Lot 1 in DP 952720, Lot 1 in DP 972068 & Lot 10 in DP 605684
Local Government Authority	City of Parramatta Council
Owner	Drill Pty Ltd
Current Land Use	Commercial properties
Current Zoning	B4 – Mixed use under Parramatta Local Environmental Plan 2011

7.2 Surrounding Land Use

At the time of the site inspection, the area in the immediate vicinity of the site was a combination of commercial and residential properties, and the Westmead Railway station. The site was bound to the:

- **North** by commercial and retail properties;
- **East** by Ashley Lane and residential properties;
- **West** by Western Sydney University Westmead campus; and
- **South** by Railway Parade and Westmead Railway station.

7.3 Site Description

The site and surrounding land use at the time of the DSI were considered to be relatively unchanged since the PSI was undertaken.

The site description is based on visual observations made by a Prensa consultant during the DSI fieldwork in June 2018. The layout of the site, including the AECs, is shown on **Figure 4** in the 'Figures' section of this report. Photographs taken during the DSI are provided in **Appendix B**.

The main access to the site was via Railway Parade to the south of the site, with further access to the carpark via Ashley Lane on the north eastern boundary of the site, where the investigation was targeted. The majority of the site is occupied by Westmead Shopping Village, which is comprised of shops and commercial units, with the carpark situated to the north to north east of the shopping centre.

The site was sloped from north-west to south east, with possible "cut-and-fill" activities having been undertaken to construct the carpark for the commercial units and shops. The carpark surface level has an observable drop of approximately 2m along the 50m length along this slope. The majority of the site was covered by hardstand, mostly concrete and tiled areas within the shopping centre and concrete/bitumen within the carpark. No vegetation was noted on site. However an empty garden bed was present in the carpark immediately adjacent the shopping centre entrance.

The suspected triple interceptor trap at the western end of the carpark was still present, as was the TIT located to the east near the garbage storage area. It appeared as though the TIT running parallel to the shopping centre on the southern side of the carpark identified during the PSI had possibly been decommissioned, with a rectangle asphalt cut out which appeared new, covering the area. A small shed was noted in the east of the site near the carpark entry for which access was unavailable. A few large kegs, crates and boxes were noted on the ground outside the shed, indicating its likely use by the hotel on the upper floor of the commercial centre. Opposite the shed to the west of the carpark entry was a garbage shed area which contained large skip/garbage bins for site occupant use. The layout of the site is shown on **Figure 2** in the 'Figures' section of this report and photographs taken during the DSI are provided in **Appendix B**.

7.4 Groundwater

No groundwater investigation was undertaken as part of this investigation.

8 Site History Summary

8.1 Previous Investigations

As mentioned, Prensa completed a Preliminary Site Investigation (PSI) (Prensa 2017*)* which had also been prepared by Prensa. The PSI identified:

- Operational and abandoned triple interceptor traps;
- Operation of a dry cleaners on site;
- Potential fill material beneath/surrounding buildings on site; and
- Asbestos containing building materials throughout the site.

During the PSI, Prensa reviewed an Asbestos Register *(Asbestos Inspection Register – Westmead Shopping Village 24-26 Railway Parade, Westmead NSW 2145, 18 July 2016 – SafeEnvironments)* prepared by SafeEnvironments in July 2016. The report showed ACM was confirmed or suspected in the following locations:

- Main electrical mounting board room;
- Fibre board rise;
- Fibre board containing fire door;

- Fibre board behind water heater; and
- Electrical boards throughout the building.

The SafeEnvironments assessment identified (either suspected or confirmed) non-friable asbestos in the form of fibre cement sheeting in various buildings at the site, but these locations were related to building within the shopping village and not related to the above AEC.

8.2 Historical Documentation

8.2.1 Title Search

A title search undertaken by Morris Hayes & Edgar Pty Ltd (MHE) during the PSI provided a list of proprietors for each property since 1913 and associated plans are provided in Appendix H. The proprietors of the site comprised:

- A lease folio was opened for the site in 2006;
- The site folio was cancelled in 1992;
- Drill Pty Ltd purchased the site in 1984;
- The site Folio was transferred to C.C.C International Pty Ltd in 1981; and
- The site was privately occupied from 1913 by what appears to be residential tenants.

8.2.2 SafeWork NSW Dangerous Goods Search

A SafeWork NSW Dangerous Goods Search was not undertaken during the PSI as a search of historical documents and field observations did not indicate a high likelihood of previous bulk chemical storage on the site.

9 Environmental Setting

Environmental setting information has been outlined in **Table 2** below.

Table 2: Summary of Environmental Setting

Item	Description
Regional Geology	A review of the 1;100,000 Geological Series Map of Penrith (Department of Mineral Resources Geological Survey of NSW, Sheet 9030, First Edition, 1991) indicated the site is underlain by Mesozoic Ashfield Shale of the Wianamatta Group, comprising dark-grey to black claystone-siltstone and fine sandstone-siltstone laminate.
Surface water	The site slopes down gradient to the south east. Surface water and stormwater from the site is likely to discharge to Domain Creek, a tributary to Parramatta River.
Groundwater	Based on the gradient of the surrounding land, regional groundwater beneath the site would likely flow eastward towards Parramatta River, located 1.2 km east of the site. A review of WaterNSW groundwater map (https://realtimedata.waternsw.com.au/water.stm) accessed 11th July 2018 indicated that there were no registered groundwater bores within a 500m radius of the site.
Acid Sulfate Soils	A review of Acid Sulfate Soil information contained within the online Australian Soil Resource Information System (ASRIS) database (http://www.asris.csiro.au/index_ie.html), accessed on 2nd July 2018, indicated there was no known occurrence of acid sulfate soils occurring beneath the site.

10 Areas of Environmental Concern

10.1 Potential Sources of Contamination

The PSI identified the following AECs:

- Potential misuse (e.g. unlicensed liquid disposal) and leaks/spills of the three triple interceptor traps (TITs) within the northern carpark;
- Potential leaks and spills arising from the storage of chemicals and operation of the dry cleaners on site;
- The demolition of historical residential premises on site resulting in contaminated soil/fill material;
- The potential that contaminated fill material was imported and used on-site during levelling activities when construction of the buildings occurred; and
- Asbestos materials noted within buildings on site that will require appropriate management and consideration during demolition works.

10.2 Contaminants of Potential Concern

CoPC associated with the potential sources of contamination identified during the PSI are summarised below in **Table 3**.

Table 3: Targeted Areas and Potential Contaminants of Concern

Potential source	Location	Contaminants of Potential Concern
Historical leaks/spills from the abandoned TITs	TITs – BH02, BH03, BH05, BH06, BH07 & BH08	TRH, BTEX, PAH, VOC and metals
Historical leaks/spills from dry cleaning chemicals used on site	Adjacent dry cleaners – BH04	Chlorinated Hydrocarbons
Importation of uncontrolled fill for site levelling	Surrounding electrical kiosk/buildings	TRH, BTEX, PAH, VOC metals and asbestos
Asbestos containing building materials	Fibre cement board, fire doors, electrical backing boards, other locations outlined in the asbestos register	Asbestos

NOTES

BTEX: Benzene, toluene, ethylbenzene and xylene

TRH: Total recoverable hydrocarbons

PAH: Polycyclic aromatic hydrocarbons

VOC: Volatile organic compounds

Metals: (e.g. arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc).

10.3 Potential Receptors and Exposure Pathways

Based on a commercial site use and the potential sources of contamination outlined above, the potential receptors from contamination were considered to comprise:

- Future occupants of the site from:
  - Vapour inhalation of volatile contaminants.
- Future construction workers from:
  - Dermal contact with contaminated soil/dust;
  - Ingestion of contaminated soil/dust; and
  - Vapour inhalation of volatile contaminants.

- Groundwater (leachable contaminants and potential leaks from TITs)
- Terrestrial ecosystems from direct uptake and diffusion of CoPC in soil.

Migration of CoPC in the subsurface may be influenced by zones of higher permeability within the fill and/or natural strata and/or underground services present beneath the site.

11 Assessment Criteria

The adopted criteria for this investigation are outlined in **Table A**, in the 'Tables' section of this report, and have been discussed in detail in **Appendix C**.

Based on the objectives and the redevelopment of the site under its current zoning of B4 – Mixed use, criteria for a commercial/industrial land use was deemed appropriate for this DSI.

Soil health investigation levels (HILS), soil health screening levels (HSLs), ecological investigation levels (EILs), ecological screening levels (ESLs) and petroleum hydrocarbon management limits were adopted from Schedule B1 of NEPM (2013). In the absence of relevant criteria in NEPM (2013), reference was made to other nationally or state endorsed guidelines, such as CRC CARE (2011) for direct contact hydrocarbon criteria.

HSL/HIL criteria have been adopted as Tier 1 assessment criteria with the majority of the site covered in bitumen or concrete, which limit the areas where flora can grow and transient fauna can be exposed.

12 Fieldwork Methodology

Fieldwork was conducted by Prensa Environmental Consultants on the 20th & 21st June 2018.

12.1 Preliminaries

A desktop search for underground services was undertaken using the DBYD service. A SSP was prepared to document the foreseeable hazards associated with the fieldworks and to outline the measures that will be implemented to remove or manage the associated health and environmental risks.

Prior to ground disturbance, borehole locations were cleared of underground and overhead services by Mr Mac Group (Mr Mac), a licensed underground services locator. This included a ground penetrating radar ("GPR") survey on site, which did not identify additional below ground infrastructure beyond that identified in the PSI.

12.2 Borehole Rationale

The intrusive works were undertaken on the 21st June 2018. A targeted sampling design was implemented for collection of representative samples within areas of environmental concern identified in the PSI. Borehole progression methodology and rationale for the soil assessment are described in **Table 4** below.

Table 4: Borehole Methods and Rationale

Borehole ID	Location	Surface	Target depth (mBGL)	Drilling Method	Rationale

BH01	In front of kiosk	Bitumen	3.0	Hand auger and push tube	Borehole targeting electrical kiosk with suspected fill material
BH02	North west portion	Bitumen	3.0	Hand auger and push tube	Borehole targeting TIT 1
BH03	North west portion	Bitumen	3.0	Hand auger and push tube	Borehole targeting TIT 1
BH04	Outside dry cleaners	Bitumen	3.0	Hand auger and push tube	Borehole targeting chemical storage at dry cleaners
BH05	Eastern portion	Bitumen	3.0	Hand auger and push tube	Borehole targeting chemical storage at TIT
BH06	Eastern portion	Bitumen	3.0	Hand auger and push tube	Borehole targeting TIT 2
BH07	Eastern portion	Concrete	3.0	Hand auger and push tube	Borehole targeting TIT 2
BH08	Eastern portion	Concrete	3.0	Hand auger and push tube	Borehole targeting TIT 3

12.3 Borehole Establishment

Concrete coring was undertaken by Mr Mac at all eight locations. Boreholes were subsequently progressed using a hand auger to a target depth of 1-1.2 mBGL and further progressed to a target depth of 3.0 mBGL or until refusal, using a track-mounted drill rig with push tubes. The hand auger was decontaminated between boreholes using a phosphate free detergent (Decon 90) to minimise the chance of cross contamination.

13 Laboratory Analysis

Australian Laboratory Services Pty Ltd (ALS) and Envirolab Services (Envirolab) were engaged as the primary and secondary or 'check' laboratories for chemical testing, respectively. ALS and Envirolab are NATA accredited for the analysis undertaken.

Primary soil samples were submitted for analysis of CoPC as outlined below in **Table 5.**

Table 5: Analytical Schedule

AEC	Borehole Locations	Sample ID	Analysis
Areas of former TITs	BH02, BH03, BH05, BH06, BH07, BH08	BH02_0.1-0.2, BH02_2.0-2.1, BH03_0.1-0.2, BH03_1.1-1.2, BH05_0.1-0.2, BH05_0.9-1.0, BH06_0.1-0.2, BH06_0.9-1.0, BH07_0.2-0.3, BH07_0.5-0.6, BH08_0.2-0.3, BH08_1.5-1.6	TRH, BTEX, PAH, VOC*, metals
Adjacent dry cleaners	BH04	BH04_0.1-0.2, BH04_0.5-0.6	TRH, BTEX, PAH, VOC*, metals

Uncontrolled imported fill	BH01	BH01_0.1-0.2, BH01_0.5-0.6	TRH, BTEX, PAH, VOC*, metals

*Includes chlorinated hydrocarbons

14 Results

14.1 Subsurface profile

The majority of the site subsurface profile comprised of a thin fill layer overlying a natural red-orange and grey clays, and grey, red and brown shale. Fill material was not noted at significant depths on site with the majority of fill between 0.1-0.3 mBGL primarily consisting of brown, loose clayey sand with sub-angular blue metal and gravels.

Natural soil was generally identified at depths between 0.1-0.3 mBGL within borehole locations across the site. The natural material identified was described as soft to hard, red-orange to grey clay and grey, red and brown shale. Groundwater was not observed during sampling and there was no visual or olfactory evidence of contamination including potential asbestos-containing material within the soil. Subsurface conditions were logged in general accordance with AS 1726 – 1993.

Copies of the soil logs are provided in **Appendix F.**

14.2 Field Screening

A PID was used to screen the soil profile at each sampling location. The results are shown on the soil logs in **Appendix F.** The majority of PID readings across the site were low (i.e. <10 ppm).

14.3 Analytical Results

Laboratory results are provided in **Appendix D** and are summarised in **Table A** in the 'Tables' section of this report. Borehole locations are shown in **Figure 3** in the 'Figures' section of this report. Analytical results for the soil samples analysed as a part of this DSI did not exceed adopted health based criteria for commercial/industrial land use at the site.

Areas of former TITs

Laboratory results for soil samples collected from boreholes targeting the former triple interceptor traps (BH02, BH03, BH05, BH06, BH07 and BH08) returned the following:

- Concentrations of TRH, BTEX, PAH and VOCs below the laboratory practical quantitation limit (PQL) for 11 of the 12 samples analysed
- Chlorinated hydrocarbon tetrachloroethene detected above the PQL within borehole BH08 at 0.2-0.3 mBGL (1.9 mg/kg), but below the adopted site criteria;
- Concentrations of TRH at BH08_0.2-0.3 above the PQL but below the adopted site assessment criteria, with no TRH detected within the deeper sample (BH08_1.5-1.6);
- Concentrations of nickel in soil samples BH02_0.1-0.2 (81 mg/kg), BH03_0.1-0.2 (73 mg/kg), BH05_0.1-0.2 (78 mg/kg) and BH06_0.1-0.2 (88 mg/kg) exceeding the adopted site EILs (55 mg/kg) for a commercial industrial land use; and
- Concentrations of all other metals generally above the PQL but below the adopted site assessment criteria.

Adjacent to Dry Cleaners

The concentration of nickel in sample BH04_0.1-0.2 (86 mg/kg) was above the adopted EIL (55 mg/kg) for a commercial/industrial land use. Laboratory results from the soil sampled at borehole BH04 indicated that the concentrations of TRH, BTEX, PAH and VOCs were below the PQL.

The concentration of metals were below the adopted site assessment criteria for commercial/industrial land use with the exception of nickel in sample BH04_0.1-0.2 (86 mg/kg) which was above the adopted EIL (55 mg/kg) for a commercial/industrial land use.

Surrounding Kiosk (potential imported fill)

The concentration of nickel in sample BH01_0.1-0.2 (78 mg/kg) was above the adopted EIL (55 mg/kg) for a commercial/industrial land use. Remaining metals were detected above the PQL but below the adopted site assessment criteria. Laboratory results indicated that the concentrations of TRH, BTEX, PAH and VOCs in samples analysed were below the PQL.

15 Discussion

Discussion of field and analytical results have been split into the respective AECs. It should be noted that the site has a long history of commercial use and the AECs were identified based on available information and site observations.

15.1 Areas of former TITs

Boreholes BH02, BH03, BH05, BH06, BH07 and BH08 were progressed to assess potential contamination surrounding and the suspected triple interceptor traps, particularly on the down-gradient slope. No visual contamination or hydrocarbon odour was noted within the boreholes advanced. Laboratory results for samples collected from borehole BH02, BH03, BH05 and BH06 identified nickel at concentrations above the adopted EILs for a commercial/industrial site. These results were all noted in near-surface fill samples (0.1-0.2 mBGL), are likely associated with blue metal gravel noted in the fill material, and are not considered significant due to the site being covered with concrete or bitumen and minimal flora and fauna being present in the area. Nickel concentrations were below the EILs in natural soils in this area.

Laboratory results identified tetrachloroethylene (PCE), a chlorinated hydrocarbon, in sample BH08_0.2-0.3 of 1.9 mg/kg. Although this concentration is relatively low, the presence of PCE suggests potential chemical contamination, being a commonly used product for dry cleaning of fabrics. The PCE is likely to be associated with potential leakage from the adjacent TIT, poor historical practices and/or spillage of products from the dry cleaners on site. PCE was not detected in any other locations. However, boreholes were not able to be established further down-gradient or near borehole BH08 due to the site boundary and building structures. Due to the proposed development of the site and the potential for further contamination, investigation around this area is recommended once demolition has occurred allowing further assessment of currently inaccessible areas.

15.2 Adjacent to dry cleaners

Borehole BH04 was progressed to assess potential contamination adjacent to the dry cleaners. The concentration of COPCs in all samples from borehole BH04 were below the PQL, with the exception of nickel in sample BH04_0.1-0.2 (86 mg/kg) which exceeded the adopted site EIL of 55 mg/kg. The elevated nickel in this location is again likely associated with blue metal gravel in fill material, with

nickel concentrations below the EILs in underlying natural soil and is not considered to be significant or limiting to the proposed redevelopment of the site.

15.3 Surrounding kiosk/building

Borehole BH01 was progressed to assess potential contamination in the eastern portion of the carpark associated with potentially uncontrolled imported fill material. The concentration of COPCs in all soil samples from borehole BH01 were below the PQL, with the exception of nickel in sample BH01_0.1-0.2 (78 mg/kg) which exceeded the adopted site EIL of 55 mg/kg. Similarly to previous results, the elevated nickel in this area is not considered to be significant or limiting to the proposed redevelopment of the site, as the detection was isolated to surface/fill material and there are no ecological receptors i.e. flora or fauna within the vicinity with the exception of a small, raised garden bed, with the remainder of the car park area being covered by bitumen.

16 Quality Assurance and Quality Control

Prensa implements project specific quality assurance/quality control (QA/QC) procedures to improve transparency, consistency, comparability, completeness and confidence in the data collected. Field and laboratory QA/QC procedures, results and compliance with DQIs define the acceptable level of error required for this assessment are provided in **Appendix E**.

17 Conclusions

Based on the fieldwork and investigation undertaken, the following comments can be made:

- The EIL exceedances noted on site are not considered to be in ecologically significant areas for flora and fauna. Additionally, the majority of the site is capped with hardstand/concrete/bitumen, meaning a pathway for exposure between the source of contamination and ecologically sensitive receptors is unlikely;
- Asbestos containing building materials were noted within the SafeEnvironments (2016) report. The asbestos on site does not preclude the redevelopment of the site, however. If demolition of any buildings/structures on site is to occur, works will need to consider the presence of asbestos and manage it appropriately;
- PCE a chlorinated hydrocarbon associated with dry cleaning operations was detected in borehole BH08, delineation of PCE around the borehole was not possible, including beneath the existing buildings. There is some potential for PCE impact in soil beneath the existing building.
- The TITs on site should be decommissioned. The decommissioning process should include validation of surrounding soils for CoPC including PCE; and
- It should be noted that the sampling density is below that required in Australian Standard 4482.1 for the size of the site. However due to areas of environmental concern being identified in the PSI, a targeted investigation scope was undertaken and was considered sufficient to address the objectives of the assessment.

Given there was limited access at the site, additional investigation and delineation around BH08 is required to determine the extent of the PCE contamination following demolition of site structures. Decommissioning of the TITs should be undertaken, which should include validation of the excavation footprints. Further assessment of the soil immediately beneath the building footprint should be conducted at the time of demolition.

Abbreviations

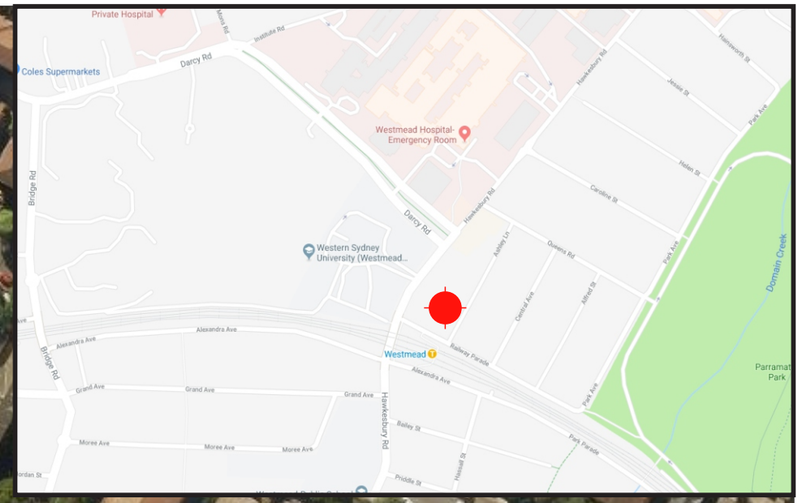
ABC	Ambient Background Concentrations
ACL	Added Contaminant Limits
BaP	Benzo(a)pyrene
BGL	Below Ground Level
CoPC	Contaminants of Potential Concern
EILs	Ecological Screening Levels
ESLs	Ecological Screening Levels
EPA	Environment Protection Authority
HILs	Health Investigation Levels
HSLs	Health Screening Levels
LNAPL	Light no-aqueous phase liquid
NATA	National Association of Testing Authorities
NEPM	National Environment Protection Measure
PAH	Polycyclic Aromatic Hydrocarbons
POEO	Protection of the Environment Operations
PQL	Practical Quantitation Limit
QA/QC	Quality Control/Quality Assurance
RPD	Relative Percentage Difference
SCA	Soil Contamination Assessment
SWMS	Safe Work Methods Statement
TRH	Total Recoverable Hydrocarbons

Figures

24-26 Railway Parade, Westmead
Site Location

Legend
- Site Location
- Site Boundary

Scale
0 20 40 Metres



prensa	Client: DRILL PTY LTD Client No.: F0061	Address: 24-26 Railway Parade, Westmead NSW	Drawn by: MXP	Date: 10/07/2018	Checked by: JXB	Date: 10/07/2018
Level 1, 71 Longueville Rd, Lang Cove NSW 2066 sydneyadmin@prensa.com.au P: (02) 8968 2500 F: (02) 8968 2599 www.prensa.com.au	Project: WESTMEAD DSI Job No.: 58422	Drawing Title: Site Location	File name: 58422 Figures		Figure number: 1	Revision: A

24-26 Railway Parade, Westmead
Site Location

Legend
Site Boundary

Scale
0 5 10
Metres

prensa	Client: DRILL PTY LTD Client No.: F0061	Address: 24-26 Railway Parade, Westmead NSW	Drawn by: MXP	Date: 10/07/2018	Checked by: JXB	Date: 10/07/2018
Level 1, 71 Longueville Rd, Lang Cove NSW 2066 sydneyadmin@prensa.com.au P: (02) 8968 2500 F: (02) 8968 2599 www.prensa.com.au	Project: WESTMEAD DSI Job No.: 58422	Drawing Title: Site Boundary	File name: 58422 Figures		Figure number: 2	Revision: A

24-26 Railway Parade, Westmead
Site Location

Legend
- Site Boundary
- Borehole Locations

Scale
0 5 10
Metres

prensa	Client: DRILL PTY LTD Client No.: F0061	Address: 24-26 Railway Parade, Westmead NSW	Drawn by: MXP	Date: 10/07/2018	Checked by: JXB	Date: 10/07/2018
Level 1, 71 Longueville Rd, Lang Cove NSW 2066 sydneyadmin@prensa.com.au P: (02) 8968 2500 F: (02) 8968 2599 www.prensa.com.au	Project: WESTMEAD DSI Job No.: 58422	Drawing Title: Borehole locations	File name: 58422 Figures		Figure number: 3	Revision: A

24-26 Railway Parade, Westmead
Site Location

Legend
- Site boundary
- Areas of Environmental concern

Scale
0 2.5 5 Metres

prensa	Client: DRILL PTY LTD Client No.: F0061	Address: 24-26 Railway Parade, Westmead NSW	Drawn by: MXP	Date: 10/07/2018	Checked by: JXB	Date: 10/07/2018
Level 1, 71 Longueville Rd, Lang Cove NSW 2066 sydneyadmin@prensa.com.au P: (02) 8968 2500 F: (02) 8968 2599 www.prensa.com.au	Project: WESTMEAD DSI Job No.: 58422	Drawing Title: Areas Of Environmental Concern	File name: 58422 Figures		Figure number: 4	Revision: A

Tables

Table 1: Soil Analytical Summary

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			BTEX							Chlorinated Hydrocarbons																															
			Benzene	Ethylbenzene	Toluene	Total BTEX	Xylene (m & p)	Xylene (o)	Xylene Total	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.2	0.5	0.5	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	0.5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																																								
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																																								
0-1m			4	NL	NL				NL																															
1-2m			6	NL	NL				NL																															
2-4m			9	NL	NL				NL																															
NEMP 2013 EIL s Comm/Ind																																								
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil																																								
0-2m			95	185	135				95																															
NEPM 2013 Table 1B(7) Management Limits Comm / Ind																																								
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil																																								
Field_ID	**Sampled_Date-Time**	**Matrix_Description**																																						
BH01_0.1-0.2	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH01_0.5-0.6	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH02_0.1-0.2	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH02_2.0-2.1	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH03_0.1-0.2	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH03_1.1-1.2	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH04_0.1-0.2	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH04_0.5-0.6	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH05_0.1-0.2	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH05_0.9-1.0	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH06_0.1-0.2	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH06_0.9-1.0	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH07_0.2-0.3	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH07_0.5-0.6	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BH08_0.2-0.3	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	1.9	<0.5	<0.5	<0.5	<5
BH08_1.5-1.6	21/06/2018		<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5

Note:
PQL: Practical Quantitation Limit

Table 1: Soil Analytical Summary

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			Halogenated Benzenes									Halogenated Hydrocarbons					Inorganics	MAH									Metals							
			1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	Moisture	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	5	0.5	5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	1	2	5	5	0.1	2	5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																											3000	900		240000	1500	730	6000	
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																																		
0-1m																																		
1-2m																																		
2-4m																																		
NEMP 2013 EIL s Comm/Ind																											160		310|660	85|1200	1800		55|960	110|2000
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil																																		
0-2m																																		
NEPM 2013 Table 1B(7) Management Limits Comm / Ind																																		
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil																																		
Field_ID	**Sampled_Date-Time**	**Matrix_Description**																																
BH01_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	9.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N18:CP3	<0.5	<0.5	<5	<1	13	76	<5	<0.1	78	33
BH01_0.5-0.6	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	18.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	17	47	22	<0.1	10	64
BH02_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	10.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	13	69	<5	<0.1	81	33
BH02_2.0-2.1	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	11.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	6	29	14	<0.1	6	29
BH03_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	6.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	12	78	<5	<0.1	73	31
BH03_1.1-1.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	15.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	9	<1	6	21	14	<0.1	<2	9
BH04_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	10.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	12	80	<5	<0.1	86	36
BH04_0.5-0.6	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	11.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	7	26	14	<0.1	14	23
BH05_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	13.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	10	68	<5	<0.1	78	33
BH05_0.9-1.0	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	15.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	5	19	15	<0.1	5	17
BH06_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	11.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	13	74	<5	<0.1	88	38
BH06_0.9-1.0	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	13.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	8	30	19	<0.1	16	40
BH07_0.2-0.3	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	23.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	<1	18	28	20	<0.1	3	21
BH07_0.5-0.6	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	11	31	63	<0.1	6	41
BH08_0.2-0.3	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	11.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	32	40	37	<0.1	35	73
BH08_1.5-1.6	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<5	12.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<1	11	33	22	0.1	7	49

Note:
PQL: Practical Quantitation Limit

Table 1: Soil Analytical Summary

prensa

			PAH/Phenols																				Solvents					TRH												VOCs		
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ (LOR)	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	Methyl Ethyl Ketone	2-Hexanone (MBK)	4-Methyl-2-pentanone	Carbon disulfide	Vinyl acetate	C6-C10 less BTEX (F1)	C10-C16	C16-C34	C34-C40	F2-NAPHTHALENE	C6 - C9	C10 - C14	C15 - C28	C29-C36	>C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	C6-C10	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	5	5	0.5	5	10	50	100	100	50	10	50	100	100	50	50	10	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																		4000																								
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																																									
0-1m																	NL									310				NL											
1-2m																	NL									480				NL											
2-4m																	NL									NL				NL											
NEMP 2013 EIL s Comm/Ind																																									
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil																																									
0-2m							1.4																			215		2500	6600	170												
NEPM 2013 Table 1B(7) Management Limits Comm / Ind																											1000	3500|5000	10000							700|800				
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil																											1000	3500	10000							700				
Field_ID	**Sampled_Date-Time**	**Matrix_Description**																																							
BH01_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH01_0.5-0.6	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH02_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH02_2.0-2.1	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH03_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH03_1.1-1.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH04_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH04_0.5-0.6	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH05_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH05_0.9-1.0	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH06_0.1-0.2	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH06_0.9-1.0	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH07_0.2-0.3	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH07_0.5-0.6	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5
BH08_0.2-0.3	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	220	210	<50	<10	<50	100	190	290	430	<10	<0.5	<0.5	<0.5
BH08_1.5-1.6	21/06/2018		<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<5	<10	<50	<100	<100	<50	<10	<50	<100	<100	<50	<50	<10	<0.5	<0.5	<0.5

Note:
PQL: Practical Quantitation Limit

Table 2: Field Duplicate Analytical Summary

prensa

Field_ID	BH05_0.9-1.0	FD1	RPD1	FD2	RPD2	
Sampled_Date-Time	21/06/2018	21/06/2018		21/06/2018		
Sample_Depth_Range	0.9-1					
Matrix_Type	SOIL	SOIL		SOIL		

Chem_Group	ChemName	Units	PQL					
	Benzo(a)pyrene TEQ (LOR)	mg/kg	0.5	1.2	1.2	0	<0.5	20.588
	Benzo(b+j+k)fluoranthene	mg/kg	0.2	-	-	-	<0.2	-
	Total Positive PAHs	mg/kg	0.05	-	-	-	<0.05	-
	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0.6	0	<0.5	4.545
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	<0.5	-	<0.5	-
Moisture Content	Moisture Content	%	1	15.6	11.6		-	
BTEX	Benzene	mg/kg	0.2	<0.2	<0.2	-	<0.2	-
	Ethylbenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Toluene	mg/kg	0.5	<0.5	<0.5	-	<0.5	-
	Total BTEX	mg/kg	0.2	<0.2	<0.2	-	-	-
	Xylene (m & p)	mg/kg	0.5	<0.5	<0.5	-	<2	-
	Xylene (o)	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Xylene Total	mg/kg	0.5	<0.5	<0.5	-	-	-
	C6-C10 less BTEX (F1)	mg/kg	10	<10	<10	-	-	-
Chlorinated Hydrocarbons	1,1,1,2-tetrachloroethane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,1,1-trichloroethane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,1,2,2-tetrachloroethane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,1,2-trichloroethane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,1-dichloroethane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,1-dichloroethene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,1-dichloropropene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,2,3-trichloropropane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,2-dibromo-3-chloropropane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,2-dichloroethane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,2-dichloropropane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,3-dichloropropane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	2,2-dichloropropane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Bromochloromethane	mg/kg	1	-	-	-	<1	-
	Bromodichloromethane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Bromoform	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Carbon tetrachloride	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Chlorodibromomethane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Chloroethane	mg/kg	1	<5	<5	-	<1	-
	Chloroform	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Chloromethane	mg/kg	1	<5	<5	-	<1	-
	cis-1,2-dichloroethene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	cis-1,3-dichloropropene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Dibromomethane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Hexachlorobutadiene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Trichloroethene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Tetrachloroethene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	trans-1,2-dichloroethene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	trans-1,3-dichloropropene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Vinyl chloride	mg/kg	1	<5	<5	-	<1	-
Halogenated Benzenes	1,2,3-trichlorobenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,2,4-trichlorobenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,2-dichlorobenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,3-dichlorobenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,4-dichlorobenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	2-chlorotoluene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	4-chlorotoluene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Bromobenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Chlorobenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
Halogenated Hydrocarbons	1,2-dibromoethane	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Bromomethane	mg/kg	1	<5	<5	-	<1	-
	Dichlorodifluoromethane	mg/kg	1	<5	<5	-	<1	-
	Iodomethane	mg/kg	0.5	<0.5	<0.5	-	-	-
	Trichlorofluoromethane	mg/kg	1	<5	<5	-	<1	-
Inorganics	Moisture	%	0.1	-	-		15	
Lead	Lead	mg/kg	5	15	-		-	
MAH	1,2,4-trimethylbenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	1,3,5-trimethylbenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Isopropylbenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	n-butylbenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	n-propylbenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	p-isopropyltoluene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	sec-butylbenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	Styrene	mg/kg	0.5	<0.5	<0.5	-	<1	-
	tert-butylbenzene	mg/kg	0.5	<0.5	<0.5	-	<1	-
Metals	Arsenic	mg/kg	5	<5	-	-	-	-
	Cadmium	mg/kg	1	<1	-	-	-	-
	Chromium (III+VI)	mg/kg	2	5	-	-	-	-
	Copper	mg/kg	5	19	-	-	-	-
	Mercury	mg/kg	0.1	<0.1	-	-	-	-
	Nickel	mg/kg	2	5	-	-	-	-
	Zinc	mg/kg	5	17	-	-	-	-
PAH	Benzo(b+j)fluoranthene	mg/kg	0.5	<0.5	<0.5	-	-	-
PAH/Phenols	Acenaphthene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Acenaphthylene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Anthracene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Benz(a)anthracene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Benzo(a) pyrene	mg/kg	0.05	<0.5	<0.5	-	<0.05	-
	Benzo(g,h,i)perylene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	-	-	-
	Chrysene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Dibenz(a,h)anthracene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Fluoranthene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Fluorene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Naphthalene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	PAHs (Sum of total)	mg/kg	0.5	<0.5	<0.5	-	-	-
	Phenanthrene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
	Pyrene	mg/kg	0.1	<0.5	<0.5	-	<0.1	-
Solvents	Methyl Ethyl Ketone	mg/kg	5	<5	<5	-	-	-
	2-hexanone (MBK)	mg/kg	5	<5	<5	-	-	-
	4-Methyl-2-pentanone	mg/kg	5	<5	<5	-	-	-
	Carbon disulfide	mg/kg	0.5	<0.5	<0.5	-	-	-
	Cyclohexane	mg/kg	1	-	-	-	<1	-
	Vinyl acetate	mg/kg	5	<5	<5	-	-	-
TPH	C10-C16	mg/kg	50	<50	<50	-	<50	-
	C16-C34	mg/kg	100	<100	<100	-	<100	-
	C34-C40	mg/kg	100	<100	<100	-	<100	-
	F2-NAPHTHALENE	mg/kg	50	<50	<50	-	-	-
	C6 - C9	mg/kg	10	<10	<10	-	<25	-
	C10 - C14	mg/kg	50	<50	<50	-	<50	-
	C15 - C28	mg/kg	100	<100	<100	-	<100	-
	C29-C36	mg/kg	100	<100	<100	-	<100	-
	+C10 - C36 (Sum of total)	mg/kg	50	<50	<50	-	-	-
	C10 - C40 (Sum of total)	mg/kg	50	<50	<50	-	<50	-
	C6-C10	mg/kg	10	<10	<10	-	<25	-
VOCs	cis-1,4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0.5	-	-	-
	trans-1,4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0.5	-	-	-
	Pentachloroethane	mg/kg	0.5	<0.5	<0.5	-	-	-

Table 3: Trip Spike and Blank Analytical Summary

			Field_ID	TB	TS Recovery %
			Sampled_Date-Time	21/06/2018	
Chem_Group	**ChemName**	**Units**	**PQL**		
BTEX	Benzene	mg/kg	0.2	<0.2	100
	Ethylbenzene	mg/kg	0.5	<0.5	88.88888889
	Toluene	mg/kg	0.5	<0.5	81.42857143
	Total BTEX	mg/kg	0.2	<0.2	86.66666667
	Xylene (m & p)	mg/kg	0.5	<0.5	92
	Xylene (o)	mg/kg	0.5	<0.5	90.47619048
	Xylene Total	mg/kg	0.5	<0.5	91.54929577
	C6-C10 less BTEX (F1)	mg/kg	10	<10	100
PAH/Phenols	Naphthalene	mg/kg	1	<1	100
TPH	C6 - C9	mg/kg	10	<10	85.71428571
	C6-C10	mg/kg	10	<10	87.5

Appendix A: Data Quality Objectives

Data Quality Objectives

X1. Step 1 - State the Problem

Drill Pty Ltd are proposing to redevelop the site under its current use B4 – Mixed use. A Preliminary Site Investigation (PSI) (Ref: *PSI 24-26 Railway Parade, Westmead, NSW)* (Prensa April 2017) was previously undertaken which concluded that there was potential for contamination to exist at the site associated with former and current site activities.

X2. Step 2 - Identify the Decisions

The decisions to be made based on the results of the investigation were as follows:

- What are the CoPC associated with potential soil contamination?
- Are CoPC present within soil, and if so, do they present an unacceptable risk to human health or the environment for the current zoning and land use?
- If soil contamination is present, does the site require remediation works and/or a management plan prior to divestment?

X3. Step 3 - Identify Inputs in the Decision

The inputs required to make the above decisions were as follows:

- Site setting and available background information;
- Selection of appropriate Tier 1 soil assessment criteria;
- Visual observations; and
- Field and laboratory analytical results.

X4. Step 4 - Define Boundaries of the Study

The geographical limits appropriate for the data collection and decision making in this investigation comprised the boundary of the site as shown on Figure 1 in the 'Figures' section of this report.

The temporal boundaries of the investigation (i.e. the areas of environmental concern) have been determined based on the data collected during this DSI and the PSI (Prensa April 2017).

X5. Step 5 - Develop a Decision Rule

The purpose of this step was to define the parameter of interest, specify the action level and combine the outputs of the previous DQO steps into an 'if/then' decision rule that defines the conditions that would cause the decision maker to choose alternative actions.

If the levels of contaminants of potential concern in soil were below the adopted soil assessment criteria, the risk to human health and the environment could be considered to be low for that land use.

If concentrations of contaminants in soil exceed the adopted soil assessment criteria, consideration for statistical analysis of the dataset should be undertaken to support the need or otherwise for further assessment, remediation or site management. These decision rules include the 95% upper confidence limit (UCL) of the mean contaminant concentration being less than the adopted site assessment criteria, the standard deviation being less than 50% and no individual concentration being in excess of 250% of the site assessment criteria (for similar soil types).

X6. Step 6 - Specify Limits on Decision Errors

The acceptable limits on decision errors applied during the DSI and the manner of addressing possible decision errors were developed based on the data quality indicators (DQIs) of:

- Accuracy: a quantitative measure of the closeness of reported data to the true value;
- Comparability: a qualitative parameter expressing the confidence with which one data set can be compared with another;
- Completeness: a measure of the amount of useable data (expressed as %) from a data collection activity;
- Representativeness: the confidence (expressed qualitatively) that data are representative of each media present on the site; and
- Precision: a quantitative measure of the variability (or reproducibility) of data.

X7. Step 7 - Optimise the Design

The purpose of this step was to identify a resource-effective data collection design for generating data that satisfies the DQOs.

This assessment was designed considering the information provided during the request for proposal.

A proposal was prepared for the DSI which outlined a proposed scope. The methodology within the proposal was reviewed at critical times during the project and amended where necessary based on site conditions, unexpected finds, professional judgement and liaison with First Point Projects. The methodology adopted to satisfy the DQOs is described in detail in Section 12.

To ensure the design satisfied the DQOs, DQIs (for accuracy, comparability, completeness, precision and reproducibility) were established to set acceptance limits on field methodologies and laboratory data collected.

X8. Data Quality Indicators

A summary of the field and laboratory DQIs for the DSI are provided in Table A1.

Table A1: Data Quality Indicators (DQIs)

Field Considerations	Laboratory Considerations	Comments
	Accuracy (bias)	
Work instructions (WI) are appropriate and have been complied with.	Analysis of: • Trip blanks; • Rinsate blanks; • Method blanks;	Bias introduced: • By chemicals during handling or transport; • From contaminated equipment; • During laboratory analysis;

Table A1: Data Quality Indicators (DQIs)

Field Considerations	Laboratory Considerations	Comments
	• Matrix spikes; • Surrogate spikes; • Reference material; • Laboratory control samples; and • Laboratory-prepared spikes.	• During laboratory preparation and analysis (may be high or low); • During laboratory preparation and analysis (may be high or low); • Precision of preparation of analytical method; • Precision of preparation of analytical method; and • During collection/transport (may be high or low).
	Comparability	
Same WIs used on each occasion. Experienced sampler. Climatic conditions (temperature, rainfall, wind). Same types of samples collected (filtered, size fractions).	• Sample analytical methods used (including clean-up). • Laboratory practical quantification limits (PQLs) (justify /quantify if different). • Same laboratories (justify /quantify if different). • Same units (justify /quantify if different).	• Same approach to sampling (WIs, holding times). • Quantify influence from climatic or physical conditions. • Samples collected, preserved, handled in same manner (filtered, same containers).

Table A1: Data Quality Indicators (DQIs)

Field Considerations	Laboratory Considerations	Comments
	Completeness	
Critical locations sampled. WIs appropriate and complied with. Experienced sampler. Documentation correct.	Critical samples analysed in accordance with the tender response. Analytes sampled in accordance with scope of works. Appropriate methods and PQLs. Sample documentation correct. Sample holding times complied with.	The required percentage completeness should be specified in the scope of works. Required data must be obtained from critical samples and CoPC. Incompleteness is influenced by: • Field performance problems (access problems, difficulties on site, damage); • Laboratory performance problems (Matrix interference, invalid holding times); and • Matrix problems.
	Representativeness	
Appropriate media sampled according to the scope of works. Media in the scope of works sampled.	Samples analysed according to the tender response.	• Samples must be collected to reflect characteristics of each medium. • Sample analysis must reflect properties of field samples. • Homogeneity of the samples. • Appropriate collection, handling, storage and preservation. • Detection of laboratory artefacts, e.g. contamination blanks.
	Precision	
WIs appropriate and complied with.	• Analysis of: • Laboratory and inter-laboratory duplicates; • Laboratory prepared trip spikes; and • Field duplicates.	• Measured by the coefficient of variance or standard deviation of the mean or Relative Percentage. • Field duplicates measure field and laboratory precision Difference (RPD) calculations. • Variation in RPDs can be expected to be higher for organics, low concentrations (<5 x laboratory PQL) or non-homogenous samples.

Acceptable limits adopted for data quality indicators for this DSI are outlined in Table A2.

Table A2: Acceptable Limits of Data Quality Indicators

Item	Acceptable Limit
Analysis of blind (intra-laboratory) duplicates and split (inter-laboratory) duplicates	Rate of 1:20 primary samples for the same analysis of primary samples; Calculation of relative percentage differences between primary and duplicate samples, the results of which to be less than: • 80% (where the average concentration was 1-10 x laboratory PQL); • 50% (where the average concentration was 10-30 x laboratory PQL); and • 30% (where the average concentration was > 30 x laboratory PQL).
Analysis of rinsate blanks	Rate of one sample per batch; and Results less than the laboratory PQL.
Analysis of trip blanks	Rate of one sample per batch; and Results less than the laboratory PQL.
Analysis of trip spikes	Rate of one sample per batch; and Results between 70%-130%.
Analysis of laboratory blanks, spikes, surrogates, reference and control samples	Laboratory specific
Laboratories and methods used	National Association of Testing Authorities accredited.
Sample PQLs	Results less than the adopted assessment criteria; justify/quantify if different.

Appendix B: Photographs

Photo 1. Clays and weathered shale were predominantly found on site

Photo 2. There was an observable slope across the site. Photo taken facing north-west.

Photo 3. BH02 location adjacent TIT 1

Photo 4. BH04 installed outside the dry cleaners

Photo 5. Kegs, crates and debris were noted on site outside the shed

Photo 6. B BH08 adjacent to TIT 3

Appendix C: Assessment Criteria

Soil Assessment Criteria

X1. Human Health

Health Investigation Levels (HILs)

HILs were deemed applicable for assessing human health risk via all relevant exposure pathways of exposure for metals and organic substances. HILs are concentrations below which contaminants in soils are not considered to adversely affect human health.

Health Screening Levels (HSLs)

Soil HSLs have been developed for selected petroleum compounds and fractions and were considered applicable to assessing human health risk via vapour intrusion and inhalation. The HSLs depend on specific soil physicochemical properties, land use scenarios, and the characteristics of building structures. They apply to different soil types, and depths below surface to >4 m BGL. Criteria relevant to a clayey soil type and from various depths were selected.

Soil HSLs were also adopted from CRC CARE 2011 to assess the exposure pathway of direct contact (oral ingestion, dermal contact and dust inhalation) for commercial / industrial workers and shallow trench workers (maximum trench depth of 1.0 m) and vapour intrusion for intrusive maintenance workers. As a conservative approach, a clayey soil type and depth of 0-<2 m was adopted.

Petroleum Hydrocarbon Management Limits

Petroleum hydrocarbon management limits were considered applicable for validating petroleum hydrocarbons in soil to avoid or minimise the following potential effects of petroleum hydrocarbon contamination:

- Formation of observable light non-aqueous phase liquid (LNAPL);
- Fire and explosion hazards;
- Effects on buried infrastructure (i.e. penetration of or damage to in-ground services by hydrocarbons); and
- Aesthetics.

Management limits in fine grained soils were conservatively adopted for this DSI as a conservative approach.

X2. Ecological

Ecological Investigation Levels (EILs)

Generic ecological Investigation Levels (EILs) have been adopted from NEPM (2013) for selected metals and organic substances and are applicable for assessing risk to terrestrial ecosystems. EILs depend on specific soil physicochemical properties and land use scenarios and generally apply to the top 2.0 m of soil. In the absence of specific soil physiochemical properties to calculate site specific EILs, the most conservative values have been adopted.

EILs for these analytes would be considered to be within the ranges outlined in Table C1, which are a range of added contaminant limits (ACL) adopted from NEPM 2013 schedule B1.

	Range of ACLs	
	Min	**Max**
Copper		
Commercial Industrial	**85**	**1,200**
Chromium		
Commercial Industrial	**310**	**660**
Nickel		
Commercial Industrial	**55**	**960**
Lead		
Commercial Industrial	*1,800*	*1,800*
Zinc		
Commercial Industrial	**110**	**2,000**

Adopted from NEPM 2013 Schedule B1

X3. Ecological Screening Levels (ESLs)

ESLs are concentrations of contaminants above which further appropriate investigation and evaluation will be required. They were developed for select petroleum hydrocarbons; they depend on specific soil physicochemical properties and land use scenarios and generally apply to the top 2.0 m of soil (NEPM 2013). Based on the fine grain soils encountered, ESLs for fine grained soils were adopted.

Appendix D: NATA Endorsed Analytical Results

29/6/18

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville environmental@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Prensa	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☒ Standard TAT (List due date): (29/06/2018)
OFFICE: 75 Military Road, Neutral Bay		☐ Non Standard or urgent TAT (List due date):
PROJECT: 58422 Westmead	ALS QUOTE NO.: SYBQ-269-16 Prensa	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
ORDER NUMBER:		
PROJECT MANAGER: Darren Fernandez	CONTACT PH: 02 8968 2500	
SAMPLER: Emma McAndrew	SAMPLER MOBILE: 0411 168 904	
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): Esdat	
Email Reports to (will default to PM if no other addresses are listed): emma.mcandrew@prensa.com.au; darren.fernandez@prensa.com		
Email Invoice to (will default to PM if no other addresses are listed): emma.mcandrew@prensa.com.au; darren.fernandez@prensa.com		

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	(N/A)
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:	8.9 °C		
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Emma McAndrew			JUSTIN
DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME: 22/6/18 5pm

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S-10	S-2							
1	BH01_0.1-0.2	21/06/208	S	glass jar - unpreserved	1	X	X							
2	BH01_0.5-0.6	21/06/2018	S	glass jar - unpreserved	1	X	X							
3	BH02_0.1-0.2	21/06/2018	S	glass jar - unpreserved	1	X	X							
4	BH02_2.0-2.1	21/06/2018	S	glass jar - unpreserved	1	X	X							
5	BH03_0.1-0.2	21/06/2018	S	glass jar - unpreserved	1	X	X							
6	BH03_1.1-1.2	21/06/2018	S	glass jar - unpreserved	1	X	X							
7	BH04_0.1-0.2	21/06/2018	S	glass jar - unpreserved	1	X	X							
8	BH04_0.5-0.6	21/06/2018	S	glass jar - unpreserved	1	X	X							
9	BH05_0.1-0.2	21/06/2018	S	glass jar - unpreserved	1	X	X							
10	BH05_0.9-1.0	21/06/2018	S	glass jar - unpreserved	1	X	X							
11	BH06_0.1-0.2	21/06/2018	S	glass jar - unpreserved	1	X	X							
12	BH06_0.9-1.0	21/06/2018	S	glass jar - unpreserved	1	X	X							
				TOTAL	12	12	12							

Environmental Division Sydney
Work Order Reference
ES1818458

Telephone : + 61-2-8784 8555

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1818458**	Page	: 1 of 27
Client	: **PRENSA**	Laboratory	: Environmental Division Sydney
Contact	: MR DARREN FERNANDEZ	Contact	: Customer Services ES
Address	: LEVEL 1 Longueville Road, LANE COVE NSW, AUSTRALIA 2066	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9033 8634	Telephone	: +61-2-8784 8555
Project	: 58422 Westmead	Date Samples Received	: 22-Jun-2018 17:00
Order number	:	Date Analysis Commenced	: 26-Jun-2018
C-O-C number	: ----	Issue Date	: 29-Jun-2018 17:11
Sampler	: EMMA MCANDREW		
Site	: ----		
Quote number	: SYBQ/402/17 - SYDNEY BQ		
No. of samples received	: 21		
No. of samples analysed	: 21		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

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

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP080/EP074: Positive result for sample ES1818458_15 has been confirmed by re-analysis.
- EP071: Results of sample BH08_0.2-0.3 have been confirmed by re-extraction and re-analysis.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEX only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01_0.1-0.2	BH01_0.5-0.6	BH02_0.1-0.2	BH02_2.0-2.1	BH03_0.1-0.2
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-001	ES1818458-002	ES1818458-003	ES1818458-004	ES1818458-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		9.8	18.1	10.1	11.5	6.8
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		13	17	13	6	12
Copper	7440-50-8	5	mg/kg		76	47	69	29	78
Lead	7439-92-1	5	mg/kg		<5	22	<5	14	<5
Nickel	7440-02-0	2	mg/kg		78	10	81	6	73
Zinc	7440-66-6	5	mg/kg		33	64	33	29	31
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	<5	<5	<5	<5
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01_0.1-0.2	BH01_0.5-0.6	BH02_0.1-0.2	BH02_2.0-2.1	BH03_0.1-0.2
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-001	ES1818458-002	ES1818458-003	ES1818458-004	ES1818458-005
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg		<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg		<5	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg		<5	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg		<5	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	<5	<5	<5	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01_0.1-0.2	BH01_0.5-0.6	BH02_0.1-0.2	BH02_2.0-2.1	BH03_0.1-0.2
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-001	ES1818458-002	ES1818458-003	ES1818458-004	ES1818458-005
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01_0.1-0.2	BH01_0.5-0.6	BH02_0.1-0.2	BH02_2.0-2.1	BH03_0.1-0.2
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-001	ES1818458-002	ES1818458-003	ES1818458-004	ES1818458-005
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		**93.4**	**96.6**	**109**	**99.9**	**96.7**
Toluene-D8	2037-26-5	0.5	%		**84.2**	**95.9**	**94.3**	**91.9**	**93.3**
4-Bromofluorobenzene	460-00-4	0.5	%		**88.0**	**86.0**	**81.7**	**87.6**	**83.3**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**77.8**	**77.4**	**75.0**	**75.8**	**79.5**
2-Chlorophenol-D4	93951-73-6	0.5	%		**78.1**	**77.2**	**74.9**	**75.6**	**79.5**
2.4.6-Tribromophenol	118-79-6	0.5	%		**66.6**	**67.4**	**62.7**	**64.0**	**64.3**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**80.5**	**80.0**	**78.2**	**78.6**	**82.9**
Anthracene-d10	1719-06-8	0.5	%		**83.8**	**82.7**	**81.7**	**81.7**	**87.2**
4-Terphenyl-d14	1718-51-0	0.5	%		**75.3**	**74.3**	**72.9**	**74.0**	**77.3**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**93.9**	**97.2**	**110**	**100**	**97.2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01_0.1-0.2	BH01_0.5-0.6	BH02_0.1-0.2	BH02_2.0-2.1	BH03_0.1-0.2
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-001	ES1818458-002	ES1818458-003	ES1818458-004	ES1818458-005
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		**84.6**	**96.4**	**94.8**	**92.4**	**93.8**
4-Bromofluorobenzene	460-00-4	0.2	%		**76.7**	**74.7**	**78.0**	**75.0**	**76.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH03_1.1-1.2	BH04_0.1-0.2	BH04_0.5-0.6	BH05_0.1-0.2	BH05_0.9-1.0
			Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit	ES1818458-006	ES1818458-007	ES1818458-008	ES1818458-009	ES1818458-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	15.3	10.7	11.9	13.1	15.6
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	9	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	6	12	7	10	5
Copper	7440-50-8	5	mg/kg	21	80	26	68	19
Lead	7439-92-1	5	mg/kg	14	<5	14	<5	15
Nickel	7440-02-0	2	mg/kg	<2	86	14	78	5
Zinc	7440-66-6	5	mg/kg	9	36	23	33	17
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	<5	<5
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH03_1.1-1.2	BH04_0.1-0.2	BH04_0.5-0.6	BH05_0.1-0.2	BH05_0.9-1.0
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-006	ES1818458-007	ES1818458-008	ES1818458-009	ES1818458-010
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg		<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg		<5	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg		<5	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg		<5	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	<5	<5	<5	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH03_1.1-1.2	BH04_0.1-0.2	BH04_0.5-0.6	BH05_0.1-0.2	BH05_0.9-1.0
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-006	ES1818458-007	ES1818458-008	ES1818458-009	ES1818458-010
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH03_1.1-1.2	BH04_0.1-0.2	BH04_0.5-0.6	BH05_0.1-0.2	BH05_0.9-1.0
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-006	ES1818458-007	ES1818458-008	ES1818458-009	ES1818458-010
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		**107**	**111**	**106**	**105**	**98.0**
Toluene-D8	2037-26-5	0.5	%		**100**	**108**	**103**	**91.6**	**90.4**
4-Bromofluorobenzene	460-00-4	0.5	%		**84.1**	**92.2**	**89.4**	**81.7**	**79.8**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**78.0**	**73.6**	**76.2**	**78.8**	**75.8**
2-Chlorophenol-D4	93951-73-6	0.5	%		**78.4**	**73.8**	**76.7**	**78.6**	**76.3**
2.4.6-Tribromophenol	118-79-6	0.5	%		**64.8**	**61.2**	**63.8**	**65.7**	**63.0**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**81.6**	**75.8**	**80.1**	**81.2**	**79.1**
Anthracene-d10	1719-06-8	0.5	%		**85.4**	**79.1**	**83.0**	**85.1**	**82.6**
4-Terphenyl-d14	1718-51-0	0.5	%		**75.9**	**71.1**	**74.7**	**77.2**	**73.2**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**108**	**111**	**106**	**105**	**98.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH03_1.1-1.2	BH04_0.1-0.2	BH04_0.5-0.6	BH05_0.1-0.2	BH05_0.9-1.0
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-006	ES1818458-007	ES1818458-008	ES1818458-009	ES1818458-010
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		**101**	**108**	**104**	**92.1**	**90.9**
4-Bromofluorobenzene	460-00-4	0.2	%		**76.5**	**83.0**	**85.1**	**81.7**	**75.7**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH06_0.1-0.2	BH06_0.9-1.0	BH07_0.2-0.3	BH07_0.5-0.6	BH08_0.2-0.3
			Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit	ES1818458-011	ES1818458-012	ES1818458-013	ES1818458-014	ES1818458-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	11.7	13.4	23.3	17.0	11.4
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	13	8	18	11	32
Copper	7440-50-8	5	mg/kg	74	30	28	31	40
Lead	7439-92-1	5	mg/kg	<5	19	20	63	37
Nickel	7440-02-0	2	mg/kg	88	16	3	6	35
Zinc	7440-66-6	5	mg/kg	38	40	21	41	73
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	<5	<5
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH06_0.1-0.2	BH06_0.9-1.0	BH07_0.2-0.3	BH07_0.5-0.6	BH08_0.2-0.3
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-011	ES1818458-012	ES1818458-013	ES1818458-014	ES1818458-015
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg		<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg		<5	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg		<5	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg		<5	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	<5	<5	<5	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	**1.9**
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH06_0.1-0.2	BH06_0.9-1.0	BH07_0.2-0.3	BH07_0.5-0.6	BH08_0.2-0.3
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-011	ES1818458-012	ES1818458-013	ES1818458-014	ES1818458-015
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	**100**
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	**190**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH06_0.1-0.2	BH06_0.9-1.0	BH07_0.2-0.3	BH07_0.5-0.6	BH08_0.2-0.3
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-011	ES1818458-012	ES1818458-013	ES1818458-014	ES1818458-015
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	**290**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	**220**
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	**210**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	**430**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		**108**	**101**	**108**	**98.6**	**104**
Toluene-D8	2037-26-5	0.5	%		**102**	**90.4**	**104**	**96.0**	**96.3**
4-Bromofluorobenzene	460-00-4	0.5	%		**95.5**	**90.4**	**100**	**90.7**	**77.8**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**72.4**	**75.3**	**77.8**	**76.9**	**75.7**
2-Chlorophenol-D4	93951-73-6	0.5	%		**72.7**	**75.5**	**77.6**	**77.1**	**75.9**
2.4.6-Tribromophenol	118-79-6	0.5	%		**58.8**	**62.4**	**64.3**	**63.5**	**58.0**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**74.9**	**77.7**	**81.0**	**80.3**	**79.2**
Anthracene-d10	1719-06-8	0.5	%		**77.0**	**80.3**	**84.0**	**83.6**	**82.2**
4-Terphenyl-d14	1718-51-0	0.5	%		**69.5**	**73.4**	**76.4**	**74.5**	**74.0**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**108**	**101**	**109**	**99.2**	**104**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH06_0.1-0.2	BH06_0.9-1.0	BH07_0.2-0.3	BH07_0.5-0.6	BH08_0.2-0.3
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-011	ES1818458-012	ES1818458-013	ES1818458-014	ES1818458-015
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		**103**	**90.9**	**104**	**96.5**	**96.8**
4-Bromofluorobenzene	460-00-4	0.2	%		**82.4**	**75.2**	**86.2**	**78.0**	**80.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH08_1.5-1.6	FD1	TS	TB	Trip Spike Control
			Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit	ES1818458-016	ES1818458-017	ES1818458-019	ES1818458-020	ES1818458-021
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**12.1**	**11.6**	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**11**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**33**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**22**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**7**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**49**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.1**	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	----	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	----	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	----	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH08_1.5-1.6	FD1	TS	TB	Trip Spike Control
			Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit	ES1818458-016	ES1818458-017	ES1818458-019	ES1818458-020	ES1818458-021
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	----	----	----
Chloromethane	74-87-3	5	mg/kg	<5	<5	----	----	----
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	----	----	----
Bromomethane	74-83-9	5	mg/kg	<5	<5	----	----	----
Chloroethane	75-00-3	5	mg/kg	<5	<5	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	----	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	----	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH08_1.5-1.6	FD1	TS	TB	Trip Spike Control
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-016	ES1818458-017	ES1818458-019	ES1818458-020	ES1818458-021
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	<0.5	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	<0.5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	<0.5	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	<0.5	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	<0.5	----	----	----
Bromoform	75-25-2	0.5	mg/kg		<0.5	<0.5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	**12**	<10	**14**
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH08_1.5-1.6	FD1	TS	TB	Trip Spike Control
			Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit	ES1818458-016	ES1818458-017	ES1818458-019	ES1818458-020	ES1818458-021
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	**14**	<10	**16**
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	**5.7**	<0.5	**7.0**
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	**0.8**	<0.5	**0.9**
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	**4.6**	<0.5	**5.0**
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	**1.9**	<0.5	**2.1**
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	**13.0**	<0.2	**15.0**
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	**6.5**	<0.5	**7.1**
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.5	%	**106**	**97.1**	----	----	----
Toluene-D8	2037-26-5	0.5	%	**103**	**88.6**	----	----	----
4-Bromofluorobenzene	460-00-4	0.5	%	**85.5**	**78.0**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**76.4**	**74.8**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**76.6**	**74.6**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**63.2**	**62.8**	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**78.0**	**77.5**	----	----	----
Anthracene-d10	1719-06-8	0.5	%	**82.1**	**81.4**	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**73.9**	**73.9**	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**106**	**97.6**	**97.3**	**92.0**	**98.2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH08_1.5-1.6	FD1	TS	TB	Trip Spike Control
				Client sampling date / time	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00	21-Jun-2018 00:00
Compound	CAS Number	LOR	Unit		ES1818458-016	ES1818458-017	ES1818458-019	ES1818458-020	ES1818458-021
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		**103**	**89.1**	**84.7**	**85.7**	**85.5**
4-Bromofluorobenzene	460-00-4	0.2	%		**81.2**	**80.3**	**81.5**	**79.9**	**79.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RIN	----	----	----	----
				Client sampling date / time	21-Jun-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1818458-018	--------	--------	--------	--------
					Result	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L		<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L		<5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L		<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L		<5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L		<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L		<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L		<5	----	----	----	----
n-Butylbenzene	104-51-8	5	µg/L		<5	----	----	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	50	µg/L		<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L		<50	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L		<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L		<50	----	----	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	5	µg/L		<5	----	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L		<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L		<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L		<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L		<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RIN	----	----	----	----
				Client sampling date / time	21-Jun-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1818458-018	--------	--------	--------	--------
					Result	----	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L		<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L		<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	----	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	----	----	----	----
Bromoform	75-25-2	5	µg/L		<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RIN	----	----	----	----
				Client sampling date / time	21-Jun-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1818458-018	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RIN	----	----	----	----
				Client sampling date / time	21-Jun-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1818458-018	--------	--------	--------	--------
					Result	----	----	----	----
EP080: BTEXN - Continued									
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**104**	----	----	----	----
Toluene-D8	2037-26-5	5	%		**92.2**	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		**88.4**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**36.3**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**71.7**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**67.4**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**77.5**	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		**87.0**	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**85.0**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**104**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**92.7**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**77.6**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

CHAIN OF CUSTODY - Client

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Client: Prensa Pty Ltd	Client Project Name / Number / Site etc (ie report title):
Contact Person: Emma McAndrew	
Project Mgr: Darren Fernandez	PO No.:
Sampler: Emma McAndrew	Envirolab Quote No:
Address: Level 2, 115 Military Road Neutral Bay	Date results requir Or choose: standard / same day / 1 day / 2 day / 3 day *Note: Inform lab in advance if urgent turnaround is required - surcharges apply*
Phone: 02 8968 2500 Mob: 0411168904	Additional report format: esdat / equis /
Email: emma.mcandrew@prensa.com.au	Lab Comments:

Sample information					Tests Required	Comments
Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	TRH, VOCs, PAH	Provide as much information about the sample as you can
1	FD2		21/06/2018	Soil	X	
			–			

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

Job No: 194572
Date Received: 22/6/18
Time Received: 12:15
Received By: RW
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (Company):	Prensa Pty Ltd	Received by (Company): Envirolab
Print Name:	Emma McAndrew	Print Name: Rebecca
Date & Time:	22/6/18	Date & Time: 22/6/18 12:15
Signature:		Signature:

Lab use only:
Samples Received: Cool or Ambient (circle one)
Temperature Received at: (if applicable)
Transported by: Hand delivered / courier

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

CERTIFICATE OF ANALYSIS 194572

Client Details

Client	Prensa Pty Ltd
Attention	Emma McAndrew
Address	Level 1, 261-271 Wattletree Rd, Malvern, VIC, 3144

Sample Details

Your Reference	**58422**
Number of Samples	1 Soil
Date samples received	22/06/2018
Date completed instructions received	22/06/2018

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.

Report Details

Date results requested by	29/06/2018
Date of Issue	29/06/2018

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Results Approved By
Dragana Tomas, Senior Chemist

Authorised By

Jacinta Hurst, Laboratory Manager

VOCs in soil		
Our Reference		194572-1
Your Reference	UNITS	FD2
Date Sampled		21/06/2018
Type of sample		Soil
Date extracted	-	25/06/2018
Date analysed	-	26/06/2018
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1
bromoform	mg/kg	<1

VOCs in soil		
Our Reference		194572-1
Your Reference	UNITS	FD2
Date Sampled		21/06/2018
Type of sample		Soil
m+p-xylene	mg/kg	<2
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-trichloropropane	mg/kg	<1
isopropylbenzene	mg/kg	<1
bromobenzene	mg/kg	<1
n-propyl benzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3,5-trimethyl benzene	mg/kg	<1
tert-butyl benzene	mg/kg	<1
1,2,4-trimethyl benzene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
sec-butyl benzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
4-isopropyl toluene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
n-butyl benzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
Surrogate Dibromofluorometha	%	106
Surrogate aaa-Trifluorotoluene	%	86
Surrogate Toluene-d_8	%	98
Surrogate 4-Bromofluorobenzene	%	90

TRH in Soil (C6-C9) NEPM		
Our Reference		194572-1
Your Reference	UNITS	FD2
Date Sampled		21/06/2018
Type of sample		Soil
Date extracted	-	25/06/2018
Date analysed	-	26/06/2018
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
Surrogate aaa-Trifluorotoluene	%	86

svTRH (C10-C40) in Soil		
Our Reference		194572-1
Your Reference	UNITS	FD2
Date Sampled		21/06/2018
Type of sample		Soil
Date extracted	-	25/06/2018
Date analysed	-	25/06/2018
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	95

PAHs in Soil		
Our Reference		194572-1
Your Reference	UNITS	FD2
Date Sampled		21/06/2018
Type of sample		Soil
Date extracted	-	25/06/2018
Date analysed	-	26/06/2018
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	97

Moisture		
Our Reference		194572-1
Your Reference	UNITS	FD2
Date Sampled		21/06/2018
Type of sample		Soil
Date prepared	-	25/06/2018
Date analysed	-	26/06/2018
Moisture	%	15

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
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. '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.

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			25/06/2018	[NT]	[NT]	[NT]	[NT]	25/06/2018	[NT]
Date analysed	-			26/06/2018	[NT]	[NT]	[NT]	[NT]	26/06/2018	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chloroform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
2,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	87	[NT]
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
1,1-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	mg/kg	0.2	Org-014	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
bromodichloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	mg/kg	0.5	Org-014	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	87	[NT]
1,2-dibromoethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromoform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-014	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
styrene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
o-Xylene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-014	101	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-014	95	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate Toluene-d_8	%		Org-014	98	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-014	92	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: TRH in Soil (C6-C9) NEPM						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			25/06/2018	[NT]	[NT]	[NT]	[NT]	25/06/2018	[NT]
Date analysed	-			26/06/2018	[NT]	[NT]	[NT]	[NT]	26/06/2018	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	80	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	80	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	95	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			25/06/2018	[NT]	[NT]	[NT]	[NT]	25/06/2018	[NT]
Date analysed	-			25/06/2018	[NT]	[NT]	[NT]	[NT]	25/06/2018	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	116	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	80	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	116	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	80	[NT]
Surrogate o-Terphenyl	%		Org-003	82	[NT]	[NT]	[NT]	[NT]	84	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			25/06/2018	[NT]	[NT]	[NT]	[NT]	25/06/2018	[NT]
Date analysed	-			26/06/2018	[NT]	[NT]	[NT]	[NT]	26/06/2018	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	91	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	99	[NT]	[NT]	[NT]	[NT]	110	[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: <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.

Appendix E: QA/QC Breakdown

A duplicate and triplicate soil sample was collected to assess whether the analytical results were acceptable. Relative Percentage Differences (RPDs) were calculated for each of the quality control samples analysed. RPDs are calculated by dividing the difference between the primary sample and quality control sample by the average of the two, as shown below:

$$RPD = \frac{(X_1 - X_2)}{(X_1+X_2)/2} \times 100\%$$

Where X_1 = Primary sample result

X_2 = Replicate sample result

The results of the blind and split replicate sample analysis are provided in Table 5 below.

Table 5: Quality Control Replicate Samples

QC Sample	Type	Primary Sample	Results
FD1	Duplicate	BH05_0.9-1.0	The RPDs reported were within the 30–50% range recommended within AS4482.1.
FD2	Triplicate	BH05_0.9-1.0	The RPDs reported were within the 30–50% range recommended within AS4482.1.

The blind replicate and split samples generally recorded RPDs within or below the 30-50% range recommended in AS4482.1.

17.1 Laboratory Quality Control/Quality Assurance

Within the laboratory the following QA samples and methods are routinely processed to assure the quality of reported results for soil:

- Duplicates – Split samples which are analysed in tandem and reported in the same units as the result to show comparison;
- Relative Percentage Difference (RPD) – Between two duplicates. Results are acceptable if they are less than ten times the laboratory's LOR or if the results are between ten to twenty times the LOR, the RPD must lie between 0-50%;
- Method Blanks – Performed on laboratory certified sands (solids) and deionised water (water). Method blanks are not to exceed the laboratory's LOR;
- Laboratory Control Samples (LCS) – Reported as percent recovery. Recoveries must lie between 70-130% or 30-130% for phenols;
- Certified Reference Material (CRM) – use an analyte of known concentration and reported as percent recovery. Recoveries must lie between 70-130% or 30-130% for phenols; and
- Surrogates – added to all samples where appropriate and reported as a percentage recovery. Recoveries must lie between 50-150% or 20-130% for phenols.

A review of the internal laboratory quality data presented in the primary laboratory NATA analytical report indicated that laboratory QA/QC samples were within the acceptable limits. Therefore, the data set is considered representative of site conditions and is therefore reliable.

Appendix F: Soil Logs

BORE HOLE LOG BH01

Client: First Point Projects Pty Ltd
Job Number: 58422
Site Location: 24-26 Railway Parade, Westmead
Job Name: Westmead DSI

Date of Sampling: 21/6/2018
Excavation Method: Hand Auger/ Drill

Depth of Hole: 1.9 mbgl
Drawn By: MXP
Approved By: JPB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0.1	Hand Auger		Asphalt cover		
0.2			FILL: Brown, soft, CLAYEY SAND with sub angular gravels 2-5 cm (30%)	BH01_.01-0.2	2.7 ppm
0.3			REWORKED NATURAL: Red, soft, slightly moist, CLAY		
0.4					
0.5			Grading to orange clay with grey/ white mottling	BH01_0.5-0.6	3.4 ppm
0.6					
0.7			Grading to grey clay with tan mottling		
0.8					
0.9					
1					
1.1			Grading to grey clay	BH01_1.0-1.1	3.0 ppm
1.2	Push Tube Drill Rig		NATURAL: Tan/ brown, hard, CLAYEY SHALE		
1.3			Grading to weathered grey shale		
1.4				BH01_1.4-1.5	2.4 ppm
1.5					
1.6					
1.7			NATURAL: Brown, hard, SHALE		
1.8				BH01_1.8-1.9	2.4 ppm
1.9					
2			End of hole at 1.9 mbgl Refusal on bed rock No odour noted throughout No ground water encountered		
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
2.8					
2.9					
3					
3.1					
3.2					
3.3					
3.4					

BORE HOLE LOG BH02

Client: First Point Projects Pty Ltd
Job Number: 58422
Site Location: 24-26 Railway Parade, Westmead
Job Name: Westmead DSI

Date of Sampling: 21/6/2018
Excavation Method: Hand Auger/ Drill

Depth of Hole: 3.0 mbgl
Drawn By: MXP
Approved By: JPB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0	Hand Auger		Asphalt cover		
0.1			FILL: Brown, loose, CLAYEY SAND with gravels and blue metals	BH02_.01-0.2	3.5 ppm
0.2					
0.3			REWORKED NATURAL: Red, soft, moist, CLAY		
0.4					
0.5			Grading to red clay with orange and grey mottling (water noted in bore hole at 0.9 mbgl)	BH02_0.5-0.6	2.9 ppm
0.6					
0.7					
0.8					
0.9					
1			Grading to brown clay with grey mottling (Glass piece found at 1.3)	BH02_1.0-1.1	2.3 ppm
1.1					
1.2	Push Tube Drill Rig				
1.3					
1.4			NATURAL: Hard, grey, shale		
1.5					
1.6			Grading to grey shale with orange mottling		
1.7					
1.8					
1.9					
2			Grading to grey	BH02_2-2.1	2.4 ppm
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
2.8			Grading to grey with dark grey mottling		
2.9				BH02_2.9-3	2.8 ppm
3					
3.1			End of hole at 3.0 mbgl Target depth reached No Odour Noted throughout		
3.2					
3.3					
3.4					

Disclaimer This log is intended for environmental not geotechnical purposes.

BORE HOLE LOG BH03

prensa

Client: First Point Projects Pty Ltd
Job Number: 58422
Site Location: 24-26 Railway Parade, Westmead
Job Name: Westmead DSI

Date of Sampling: 21/6/2018
Excavation Method: Hand Auger/ Drill

Depth of Hole: 1.9 mbgl
Drawn By: MXP
Approved By: JPB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0	Hand Auger		Asphalt cover		
0.1			FILL:Soft, slightly moist, CLAYEY SAND with sub angular gravels and blue metal 0.5-3cm (20%)	BH03_.01-0.2	2.3 ppm
0.2					
0.3					
0.4					
0.5			NATURAL: Red, soft, moist, CLAY with orange mottling	BH03_0.5-0.6	2.1 ppm
0.6					
0.7					
0.8			Grading to red with grey mottling		
0.9					
1					
1.1			Grading to grey with orange mottling	BH03_1.1-1.2	2.7 ppm
1.2	Push Tube Drill Rig		NATURAL: Hard, grey, CLAY with orange mottling		
1.3					
1.4				BH03_1.4-1.5	2.3 ppm
1.5					
1.6					
1.7			Grading to grey		
1.8				BH03_1.8-1.9	2.4 ppm
1.9					
2			End of hole at 1.9 mbgl Refusal on bed rock No odours noted No ground water encountered		
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
2.8					
2.9					
3					
3.1					
3.2					
3.3					
3.4					

Disclaimer This log is intended for environmental not geotechnical purposes.

BORE HOLE LOG BH04

Client: First Point Projects Pty Ltd
Job Number: 58422
Site Location: 24-26 Railway Parade, Westmead
Job Name: Westmead DSI

Date of Sampling: 21/6/2018
Excavation Method: Hand Auger/ Drill

Depth of Hole: 3.0 mbgl
Drawn By: MXP
Approved By: JPB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0	Hand Auger		Asphalt cover		
0.1			FILL: Brown, moist, loose, CLAYEY SAND with sub angular 0.5-1cm blue metal(40%)	BH04_.01-0.2	4.1 ppm
0.2					
0.3			NATURAL: Orange, very soft, moist, CLAY with grey mottling		
0.4					
0.5			Grading to grey with orange mottling, firm and less moisture	BH04_0.5-0.6	4.6 ppm
0.6			NATURAL: Grey/orange, slightly moist, SANDY CLAY		
0.7					
0.8					
0.9				BH04_0.9-1	4.5 ppm
1	Push Tube Drill Rig				
1.1					
1.2			NATURAL: Grey, SHALE with orange and brown mottling		
1.3					
1.4			Grading to red/brown		
1.5					
1.6					
1.7					
1.8					
1.9					
2			Grading to grey/orange mottling	BH04_2-2.1	3.5 ppm
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
2.8			NATURAL: Grey, soft, CLAY		
2.9				BH04_2.9-3	3 ppm
3					
3.1			End of hole at 3.0 mbgl Target depth reached No odour noted throughout No ground water encountered throughout		
3.2					
3.3					
3.4					

Disclaimer This log is intended for environmental not geotechnical purposes.

BORE HOLE LOG BH05

Client: First Point Projects Pty Ltd
Job Number: 58422
Site Location: 24-26 Railway Parade, Westmead
Job Name: Westmead DSI

Date of Sampling: 21/6/2018
Excavation Method: Hand Auger/ Drill

Depth of Hole: 3.0 mbgl
Drawn By: MXP
Approved By: JPB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0	Hand Auger		Asphalt cover		
0.1			FILL: Brown, loose, CLAYEY SAND with bits of asphalt and blue metal (0.5-1cm)	BH05_.01-0.2	3 ppm
0.2					
0.3			NATURAL: Red, moist, soft, CLAY with grey mottling		
0.4					
0.5			Grading to grey with red mottling	BH05_0.5-0.6	3.1 ppm
0.6					
0.7			Grading to grey and very stiff		
0.8					
0.9				BH05_0.9-1	3.6 ppm
1	Push Tube Drill Rig				
1.1			Grading to stiff		
1.2			NATURAL: Hard, grey, SHALE with red and orange mottling, organic matter (decayed tree root) noted at 2.4 mbgl		
1.3					
1.4					
1.5					
1.6					
1.7					
1.8					
1.9					
2				BH05_2-2.1	3.7 ppm
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7			NATURAL: Grey, firm, CLAY		
2.8					
2.9			NATURAL: Dark grey, SHALE with orange mottling	BH05_2.9-3	3.4 ppm
3					
3.1			End of hole at 3.0 mbgl Target depth reached No odour noted throughout No ground water encountered		
3.2					
3.3					
3.4					

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BORE HOLE LOG BH06

prensa

Client: First Point Projects Pty Ltd
Job Number: 58422
Site Location: 24-26 Railway Parade, Westmead
Job Name: Westmead DSI

Date of Sampling: 21/6/2018
Excavation Method: Hand Auger/ Drill

Depth of Hole: 1.5 mbgl
Drawn By: MXP
Approved By: ECM

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0	Hand Auger		Asphalt cover		
0.1			FILL: Brown, loose, slightly moist, SANDY CLAY with mixed angular gravels and blue metals 0.5-1 cm (10%)	BH06_0.05-0.2	4 ppm
0.2					
0.3			NATURAL: Orange, soft, moist, CLAY with red and grey mottling		
0.4					
0.5			Grading to grey with orange mottling	BH06_0.5-0.6	2.9 ppm
0.6					
0.7			NATURAL: Firm, grey, SANDY CLAY with orange mottling		
0.8					
0.9			Grading to orange	BH06_0.9-1	4.2 ppm
1	Push Tube Drill Rig		NATURAL: Grey, slightly moist, SHALE with brown mottling		
1.1					
1.2					
1.3					
1.4				BH06_1.4-1.5	7.4 ppm
1.5			End of hole at 1.5 mbgl Refusal on shale mottling No odour noted throughout No ground water detected		
1.6					
1.7					
1.8					
1.9					
2					
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
2.8					
2.9					
3					
3.1					
3.2					
3.3					
3.4					

BORE HOLE LOG BH07

Client: First Point Projects Pty Ltd
Job Number: 58422
Site Location: 24-26 Railway Parade, Westmead
Job Name: Westmead DSI

Date of Sampling: 21/6/2018
Excavation Method: Hand Auger/ Drill

Depth of Hole: 2.6 mbgl
Drawn By: MXP
Approved By: JPB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0.1	Hand Auger		Concrete cover		
0.2			FILL: Brown, moist, loose, CLAYEY SAND course grain	BH07_0.2-0.3	1.5 ppm
0.3			NATURAL: Red, soft, CLAY with tan mottling		
0.4			Grading to grey with red and tan mottling		
0.5				BH07_0.5-0.6	1.7 ppm
0.6					
0.7					
0.8					
0.9				BH07_0.9-1	2.5 ppm
1	Push Tube Drill Rig		Grading to grey clay, very hard		
1.1					
1.2			NATURAL: Grey, dry, SHALE with orange mottling		
1.3					
1.4					
1.5					
1.6					
1.7					
1.8					
1.9					
2				BH07_2-2.1	3.2 ppm
2.1					
2.2					
2.3					
2.4					
2.5				BH07_2.5-2.6	3.0 ppm
2.6					
2.7			End of hole at 2.6 mbgl Refusal on shale mottling No odour noted throughout No ground water encountered		
2.8					
2.9					
3					
3.1					
3.2					
3.3					
3.4					

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BORE HOLE LOG BH08

Client: First Point Projects Pty Ltd
Job Number: 58422
Site Location: 24-26 Railway Parade, Westmead
Job Name: Westmead DSI

Date of Sampling: 21/6/2018
Excavation Method: Hand Auger/ Drill

Depth of Hole: 1.9 mbgl
Drawn By: MXP
Approved By: JPB

COMMENTS:

Depth (m)	Method	Graphic Log	Subsurface Profile	Samples	PID
0.1	Hand Auger		Concrete cover		
0.2			FILL: Brown, moist, loose, CLAYEY SAND with angular blue metal 0.5-1 cm (20%)	BH08_0.2-0.3	4.0 ppm
0.3					
0.4			NATURAL: Red, soft, CLAY with tan mottling		
0.5				BH08_0.5-0.6	2.9 ppm
0.6			Grading to grey with tan mottling		
0.7					
0.8					
0.9			NATURAL: Hard, grey/orange. SANDY CLAY	BH08_0.9-1	3.4 ppm
1	Push Tube Drill Rig				
1.1					
1.2			NATURAL: Hard, grey, SHALE with brown mottling		
1.3					
1.4					
1.5				BH08_1.5-1.6	3.4 ppm
1.6					
1.7					
1.8				BH08_1.8-1.9	3.4 ppm
1.9					
2			End of hole at 1.9 mbgl Refusal on shale bedrock No odour noted throughout No ground water encountered		
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
2.8					
2.9					
3					
3.1					
3.2					
3.3					
3.4					