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REPORT

Supplementary Environmental Investigations for the Homes Victoria Growth Stimulus Package

1-7 Bills Street, Hawthorn

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Executive Summary

Golder Associates Pty Ltd (Golder) has been engaged by Department of Health and Human Services (DHHS), via Ontoit Pty Ltd to provide supplementary environmental investigations for the proposed redevelopment of the public housing estate at 1-7 Bills Street and 151-153 Robinson Road, Hawthorn (the "site") as part of the Homes Victoria Growth Stimulus Package (HVGSP).

The former site residential buildings and pavements were recently demolished. The proposed development for the HVGSP has not yet been confirmed but is understood to include six new multi-storey residential buildings across the site, with surrounding courtyards, pavements, and landscaped areas. The development will also include basement car parking which will extend to either one or two levels below the building footprints.

The DHHS is currently in the tendering phase of the HVGSP program. Golder has been engaged to provide the additional supplementary environmental investigations. Supplementary geotechnical investigations were undertaken on the site concurrently by Golder and are reported under separate cover (Golder, 2020).

The scope of work included:

- A summary of background information available for the site;
- Soil sampling from 12 borehole and 10 test pit locations;
- Installation of six groundwater monitoring wells;
- Sampling of six groundwater monitoring wells.
- Production of an environmental report (this document) focussed on the condition of soil and groundwater at the site relevant to the proposed redevelopment.

Based on the findings of the assessment, the following conclusions have been made:

- The fill soils on site were found to have concentrations of some contaminants above adopted criteria for protection of ecosystems and human health in a residential scenario. These results were mainly in the fill in the south of the site. The natural soils were not found to have any contaminants above the adopted criteria.
- The elevated concentrations of metals and benzo(a)pyrene (BaP) in the fill in the south of the site appears to be confined to the top 0.5 m of soil and will generally be removed as part of the basement excavation works. If residual fill horizons remain in the south of the site and has elevated concentrations above adopted human health and ecological criteria for the residential use, management of the fill should be undertaken comprising installation of separation layers. These layers could include buildings, pavement or certified Fill Material. In landscaped or garden areas, the fill should be removed to a minimum depth of 0.5 m below the final surface level and replaced with material meeting the requirements of Fill Material (EPA IWRG 600.2 and IWRG621). Given the concentrations found, the above separation layers if used should be managed into the future through development and implementation of a Site Management Plan which manages future site users when accessing the underlying fill.
- The development contractor should have a Construction Environmental Management Plan in place to manage the excavation, movement and offsite disposal of any soils on site.

- **Fill Horizon**: Up to 10,250 m^3 of the Fill Horizon has been pre-classified as **Category C Contaminated Soil** material in accordance with EPA Publication IWRG 621 based on calculated 95% UCLs for copper, tin, zinc and benzo(a)pyrene (BaP). As the classification is driven by samples of fill from the south portion of the site, it would be prudent to treat the north and south sections of the site independently. This could potentially reduce the volume of soil to be disposed of as Category C soil as the fill from the northern section would be classified as Fill Material.

  The ASLP concentrations for the metals and BaP are below the threshold criteria for Category C Contaminated Soil. Although no potential asbestos fragments were identified as part of this or historic sampling programs, it is possible ACM is still present in the fill horizon at the site in localised areas and in particular associated with historic underground services beneath the footprints of the former buildings.

- **Natural Horizon:** Up to 5,750 m^3 of Natural Horizon has been pre-classified as **Fill Material** in accordance with EPA Publication IWRG 621 based on the 95% UCL concentrations calculated for fluoride and nickel.

- Groundwater is at a depth of between 4.2 to 9.0 m below ground level and appears to be under artesian conditions in the southern portion of the site. Groundwater is likely flowing in a south westerly direction towards Gardiners Creek.

- The groundwater monitoring has indicated generally minor contamination from metals which is likely naturally occurring. This site is unlikely to be the source of this contamination.

- Low concentrations of volatile compounds were also detected across the site including Methyl Ethyl Ketone (MEK), acetone, chloroform, and dichloromethane. These concentrations show a decreasing contamination gradient to the southwest and are considered to be from an offsite source.

- A preliminary groundwater vapour risk assessment has indicated that calculated vapour concentrations associated with the detected volatile chemicals represents a low potential vapour intrusion risk to the proposed residential redevelopment.

- Due to its depth, it is unlikely that the groundwater will intersect with the proposed basements however deep foundations may interact with the groundwater in the southern portion of the site.

It is noted that these conclusions are formed from the information available at the time of the assessment, further sampling, or changes in the site condition after the completion of this assessment, may result in changes to the conclusions.

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1.0 INTRODUCTION

Golder Associates (Golder) has been engaged by Department of Health and Human Services (DHHS), via Ontoit Pty Ltd to provide supplementary environmental investigations for the proposed redevelopment of the public housing estate at 1-7 Bills Street and 151-153 Robinson Road, Hawthorn (the "site") as part of the Homes Victoria Growth Stimulus Package (HVGSP).

The site encompasses an area of approximately 1.08 ha as shown in Figure 1. The site is currently vacant but prior to April 2020 contained two, three storey and five single level residential structures with garden beds, open recreational space and at grade car parking.

The proposed development is still in concept design stage but according to the Hayball, Masterplan Alignment Report (Rev 01, 09 June 2020) the design generally comprises the construction of six new buildings (labelled Buildings A to C across the southern part of the site and E to G across the northern part of the site), with surrounding courtyards, pavements, and landscaped areas. Building A is proposed to have five levels plus one lower ground carpark level, Building B four levels plus two lower ground carpark levels, Building C three levels plus two lower ground carpark levels, Building E three levels plus one lower ground levels, Building F five levels plus two lower ground carpark level and Building G six above ground levels plus two lower ground carpark levels across the western side of the building.

The DHHS is currently in the tendering phase of the HVGSP. Golder has been engaged to provide the additional supplementary environmental investigations to assist in reducing qualifications in the tender bids in relation to contamination. Supplementary geotechnical investigations were undertaken on the site concurrently by Golder and are reported under separate cover (Golder 2020).

2.0 OBJECTIVE

The objective of the supplementary investigations is to assess the potential for contamination, assess the likely impact of that contamination on the proposed use and undertake as far as possible a Waste Classification of soils for offsite disposal as part of the development works.

3.0 SCOPE OF WORK

To achieve the above objective the scope of work at 1-7 Bills Street, Hawthorn included:

- A summary of background information available for the site;
- Advancing 12 borehole locations to inform geotechnical and environmental investigation;
- Advancing 10 test pit locations to inform the environmental investigation;
- Selected analysis of soil samples from both the fill and natural soils for a broad range of potential contaminants of concern;
- Installation of six groundwater monitoring wells;
- Sampling of the five new groundwater monitoring wells onsite; and
- Production of an environmental report (this document) focussed on the condition of soil and groundwater at the site relevant to the proposed redevelopment.

4.0 SITE SETTING

4.1 Site condition

The current site condition is summarised in Table 1 below.

Table 1: Site condition summary

Element	Description
Address	1-7 Bills Street and 151-153 Robinsons Street, Hawthorn
Approximate Site Area	1.08 Hectares
Title	Lot 1 on Town Plans 238885 and 242273
Council	City of Boroondara
Zoning	Commercial 1 Zone (C1Z) Schedule to The Commercial 1 Zone (C1Z) General Residential Zone (GRZ) General Residential Zone - Schedule 4 (GRZ4)
Overlays	None
Existing Use	Vacant following recent demolition of the residential buildings.
Potential Redevelopment	The proposed development is still in concept design stage but is understood to comprise of the six new residential buildings across the site with surrounding courtyards, pavements, landscaped areas and basement car parks beneath each. Basements carparks will range between one and two levels depending on the building.
Topography	The site slopes down from approximately 21 m AHD in the north-east corner to about 11.3 m AHD in the south-west corner towards Gardiners Creek approximately 150 m from the site.
Regional Geology	According to the Geological Survey of Victoria *Melbourne* Sheet (1:63,360) the site is underlain by sediments from the Silurian aged “Melbourne Group” formation.
Acid Sulfate Soils	The site is mapped as having extremely low probability of acid sulfate soils.
Site History	It is understood that the site was vacant prior to its development as community housing block in the late 1950s early 1960s. The site has remained largely unchanged since this time with the exception of the demolition of two residential buildings in the site’s southeast corner mid 2011. The remainder of the buildings on site were demolition between April and September 2020.

4.2 Previous investigations

Previous investigation available for the site include:

- ESG Environmental (ESG), *Preliminary Environmental Site Assessment, 1-12 Bills Street, Hawthorn, Victoria*, Version 2, Ref: 2016-104, dated 12 December September 2016
- Intrax Consulting Engineers Pty Ltd (Intrax), *Geotechnical Site Investigation, Bills Street, Hawthorn, VIC*, Ref: 88797, dated 30 January 2017.

A brief technical review was undertaken on both these reports with the findings summarised below.

ESG (2016) Preliminary Environmental Site Assessment

ESG undertook a Preliminary Environmental Site assessment for the whole site in 2016. The investigation included the review of historical aerial photographs, property titles, historic maps, Sands and McDougall Directory and plans as well as publicly available databases and registers. The historical assessment indicated the site was vacant until its development as a housing block in the 1950s and was still operating as such at the time of the assessment.

The investigation also included a site walkover which was undertaken on 25 November 2016. The walkover identified some soil mounding in landscaped areas indicating the potential use of fill material, along with minor instances of domestic waste stored onsite. No potential sources of contamination were identified, although it was noted that due to the age of the structures it was likely that asbestos containing materials existed within the built environment.

Intrax (2017) Geotechnical Site Investigation

The geotechnical site investigation included the installation of 14 boreholes across the site with some in-situ testing for geotechnical parameters in December 2016. The investigation identified fill material across the southern portion of the site ranging from 0.2 to 1.0 m bgl with deeper fill (3.0 to 3.9 m bgl) identified in the south eastern corner.

Boreholes ranged in depth between 2.0 and 9.0 m bgl with groundwater only identified at borehole BH13, in the site's south east corner, at a depth of approximately 3.0 m bgl. The water was considered to be a perched water table.

No environmental testing was undertaken as part of these works, nor were descriptions provided for any potential contamination in the soil or groundwater. As such, this report will not be discussed any further in this report although the test locations are provided on Figure 2 and the borelogs included in APPENDIX C.

4.3 Aerial Photograph Review

As part of this assessment, Golder reviewed aerial photographs from the period between the ESG (2016) report and 2020. Review of NearMap images from this period identified that two buildings in the south eastern corner of the site were demolished at some stage between April and June 2011. The demolished buildings appear to have consisted of multistorey residential structures (Plate 1). The area in which these buildings existed has remained vacant since the demolition.

Plate 1: Nearmap images of the SE corner of the site on April 2011 (left) and June 2011 (right).

It should be noted that the deeper fill levels recorded by Intrax in 2017 and Golder (2020) correlates to the demolition area indicated above.

5.0 FIELD WORK METHOD AND LABORATORY ANALYSIS

5.1 Soil Investigation

As no intrusive environmental investigation has previously been undertaken at the site prior to the works described herein, supplementary soil investigations were undertaken at 22 locations across the Site as shown in Figure 2. Twelve borehole locations were established to inform geotechnical assessment, and ten test pit locations were established to inform the environmental assessment. Sample locations were selected to provide a good coverage of the site.

Soil sampling at all test pit and borehole locations were undertaken in general accordance with Golder's standard sampling protocols. Golder's standard sampling protocols involves the collection of discrete soil samples from a single location. For the assessment of potential contamination issues for humans or ecosystems, and for volatile contaminants, the ASC NEMP (1999) recommends the use of discrete samples.

During sampling, soil samples were collected using single use nitrile gloves and placed into the appropriate jars then immediately labelled and placed into a chilled cooler.

At all sample location the lithological profile, and observations of potential contamination were logged. The test pits were used to aid in the identification of asbestos containing material in the fill horizon. Borehole logs are presented in APPENDIX C.

Typically, sampling involved targeted characterisation of the fill horizon at the Site. This was done to inform a pre-classification of the fill horizon for off-site disposal in accordance with EPA Publications IWRG 621 and

702 discussed further in APPENDIX D. Golder took a total of 38 samples from the fill horizon and 21 samples from the natural horizon.

The following quality assurance (QA) procedures were also conducted during the field investigation:

- Tracking of sample movements using Chain of Custody (CoC) documentation (APPENDIX F);
- Sampling equipment was washed between sampling locations to minimise the possibility of cross-contamination.
- Collection and analysis of quality control samples including: three intra-laboratory and five interlaboratory duplicates;
- Use of a NATA registered laboratory for chemical analysis; and
- Performance of internal laboratory control tests.

Primary samples and the intra-laboratory duplicate were submitted to the nominated laboratories, Eurofins and ALS. Eurofins and ALS are registered by the National Association of Testing Authorities (NATA) for the analysis performed.

As the site history indicated the importation of uncontrolled fill was likely the primarily source of on-site contamination the samples were tested for the suite of chemicals stipulated in EPA Publication IWRG621. The analytical suite includes:

- pH;
- Metals (arsenic, barium, beryllium, boron, cadmium, hexavalent and total chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, silver, tin, vanadium and zinc);
- Cyanide and Fluoride;
- Chlorinated solvents;
- Total Recoverable Hydrocarbons (TRH);
- Polycyclic Aromatic Hydrocarbons (PAH);
- Monocyclic Aromatic Hydrocarbons (MAH);
- Phenols;
- Polychlorinated biphenyls (PCB)
- Organochlorine pesticides (OCP);
- Organophosphate pesticides (OPP); and
- Herbicides.

In addition, 11 samples collected from the fill and four from the natural horizon, were subject to analysis for common per- and poly-fluoroalkyl substances (PFAS). Please note that additional natural soil samples were not analysed for PFAS due to the site history indicating a low likelihood of PFAS contamination onsite. This group of analytes is not stipulated in EPA Publication IWRG621 but has the potential to be associated with imported, uncontrolled fill.

5.2 Groundwater Investigation

5.2.1 Drilling and Well Installation

Six geotechnical boreholes were converted into groundwater monitoring wells as part of these work. Well installation details are presented in APPENDIX C and are summarised below in Table 2. The wells were

installed under Bore Construction License (BCL) WLE079046, issued by Southern Rural Water. A copy of the BCL is included in APPENDIX E of this report. Well construction details are summarised in Table 2.

Table 2: Well Construction Details

Well ID	Date Completed	Drilled Depth of Borehole (m bgl)	Top of Well Screen (m bgl)	Base of Well Screen (m bgl)
GA20-BH01	18/09/20	Total depth 14.57 m bgl, backfilled with sand to 10.0 m bgl.	4.0	10.0
GA20-BH03	21/09/20	Total depth 15.45 m bgl, backfilled with sand to 12.0 m bgl.	6.0	12.0
GA20-BH05	08/09/2020	Total depth of 15.52 m bgl, backfilled with sand to 10.0 m bgl.	4.0	10.0
GA20-BH09	04/09/2020	Total depth of 16.85 m bgl, backfilled with sand to 10.0 m bgl.	4.0	10.0
GA20-BH10	29/09/2020	Total depth of 14.5 m bgl, backfilled with sand to 10.0 m bgl.	4.0	10.0
GA20-BH12	14/09/2020	Total depth of 17.2 m bgl, backfilled with sand to 10.0 m bgl.	4.0	10.0

Note: m bgl = metres below ground level.

The location of the boreholes and the approximate surface levels at this location was measured with a differential global positioning system (dGPS) device.

5.2.2 Well Development

Following construction, the Golder wells were developed using a bailer. Development of the well was undertaken by engineers from Golder. Well development field records are provided in APPENDIX E.

5.2.3 Groundwater Gauging

Groundwater gauging and sampling occurred on 1 October 2020. An assessment for the presence of non-aqueous phase liquid (NAPL) in wells was made using an electronically operated down-well NAPL-water interface probe. This probe was used to check for the presence of light non-aqueous phase liquid (LNAPL) near the top of the standing water column in the monitoring well and also for the presence of dense non-aqueous phase liquid (DNAPL) at the base of the well. The interface probe was then decontaminated between well locations in accordance with Golder Associates standard procedures. No NAPL was detected during the sampling event.

The approximate depth to groundwater is presented in Table 3. The relative levels were obtained by dGPS and are found on the borehole logs (APPENDIX C).

Table 3: Depth to groundwater

Well	Gauging date	Level of Well Casing (mAHD)	Depth to water (m below top of casing)	Approximate Water Level (m AHD)
GA20-BH01	01/10/20	16.808	9.010	7.907
GA20-BH03	01/10/20	19.728	8.404	11.524
GA20-BH05	01/10/20	14.916	8.189	6.927
GA20-BH09	01/10/20	15.887	5.250	10.837
GA20-BH10	01/10/20	11.360	5.150	6.410
GA20-BH12	01/10/20	15.806	4.268	11.738

5.2.4 Groundwater Sampling and Analysis

Samples were collected using the low flow micropurge sampling technique and in accordance with the Golder Associates procedures. Copies of the groundwater sampling forms are presented in APPENDIX E.

Monitoring well GA20-BH01 purged dry on 1 September 2020 with Golder returning to site on 2 September 2020 to collect a sample. Unfortunately, the well had not sufficiently recovered during this rest period (~15 hrs) to allow for samples to be collected and as such GA20-BH01 could not be sampled as part of these works.

Where possible, groundwater samples were placed into bottles supplied by the analytical testing laboratory. The groundwater samples were pumped directly to the sample bottles except for dissolved metals, where the groundwater sample was pre-filtered in the field through in-line disposable 0.45 µm filters and then placed into the sample bottles.

Eurofins undertook the primary laboratory analysis, whilst secondary testing was undertaken by ALS. Both these laboratories are registered by the National Australian Testing Authority (NATA) for the analyses performed. The sample bottles were placed in a chilled cooler and delivered to the laboratories under Chain of Custody (COC) procedures. COC records are included with the laboratory analytical certificate in APPENDIX F.

Groundwater samples were submitted for laboratory testing for metals, total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), phenols, Semi-Volatile Organic Compounds (SVOC), and Volatile Organic Compounds (VOCs), pH and metals. The adopted assessment framework utilised within this report for groundwater is detailed in APPENDIX D.

A rinsate sample was prepared and placed in the cool box with the samples during groundwater sampling. The rinsate collected on 1 September 2020 was submitted for laboratory analysis and placed on hold at the laboratory for potential analysis if required.

6.0 ASSESSMENT FRAMEWORK

The adopted assessment framework for soil (on site retention and offsite disposal) and groundwater utilised within this report is detailed in APPENDIX D.

7.0 RESULTS FROM THE INVESTIGATION

7.1 Sub-Surface Ground Conditions

A more detailed description of the sub-surface conditions is presented in the Geotechnical Investigation (Golder, 2020). The borehole logs for the on-site bores are in APPENDIX C.

In summary, the site is typically underlain by approximately 1.0 m of fill with deeper fill recorded in the south eastern corner of the site where a multistorey residential building was demolished in 2011. Fill was encountered from below the ground surface level at all sample locations. The fill was fairly consistent and included silty clays to sandy clays with trace amounts of rubble, including plastic, glass and brick fragments.

The fill is underlain by a layer of stiff or very stiff clay to sandy clay inferred to be weathered siltstone. The residual siltstone graded to weathered siltstone at depths of between about 2 m to 8 m below ground level (m bgl) with deeper siltstone observed in a number of boreholes. The geotechnical investigation has inferred the presence of a fault onsite trending north south which splits the site as follows:

- West of the site – competent rock: Buildings B, C, E and F
- East of the site – brecciated/faulted rock: Buildings A and G.

The siltstone material to the east of the site is deeply weathered and contains broken rock fragments, referred to commonly as breccia and is the product of ancient faulting within the siltstone formation. The brecciated siltstone was predominantly encountered as angular clasts within a weathered clay / extremely weathered siltstone mass.

7.2 Results from Soil Investigation

7.2.1 Field Observations

An assessment of each soil sample was made in the field and involved ranking based on both odorous and visible evidence of contamination. Each soil sample was given a ranking according to Table 4.

Table 4: Environmental Ranking System for Soil Samples

Visible Contamination		Odorous Soil	
Rank	**Description**	**Rank**	**Description**
0	No visible evidence of contamination	A	No odour
1	Slight evidence of visual contamination	B	Slightly offensive odour
2	Visible contamination	C	Moderately offensive odour
3	Obviously contaminated	D	Strongly offensive odour

Each sample was assessed to be either 0A or 1A where traces of demolition rubble was noted within the soil. APPENDIX C indicates there were minor aesthetic issues in the fill horizon at the site, with anthropogenic wastes such as plastic, brick and glass fragments identified. No odour was recorded in the soil during either the 2020 sampling event and PID readings ranged from 0.0 and 0.4 ppm indicating a low likelihood of volatile soil gases on site.

7.2.2 Asbestos Observations

Two fragments of potentially asbestos containing material were observed during the soil sampling program at test pits TP01 and TP05. The fragments of cement sheet were approximately 50 x 20 mm in area and recorded at approximately 0.1 m bgl. Both samples were submitted for analysis with results confirming that neither fragment contained asbestos. This notwithstanding, it remains possible that ACM is present in the fill horizon but has not yet been observed. Due to the age of the buildings present at site, it is also possible that demolition or construction works will uncover asbestos associated with underground services.

7.2.3 Laboratory Analytical Results

The laboratory analytical results from the soil investigation are presented APPENDIX B, in Table A to C:

- Table A present the results screened against criteria for the protection of the beneficial uses of land described in APPENDIX D.
- Table B presents the soil information required for soil pre-classification for off-site disposal.
- Table C presents the leachability results for soil pre-classification for off-site disposal.

Laboratory certificates are presented in APPENDIX F.

7.3 Results from the Groundwater Investigation

7.3.1 Groundwater Gauging and Flow Direction

A total of five groundwater monitoring wells were gauged on 1 October 2020. As part of the gauging round an interface meter was used. No NAPL was recorded during the monitoring event with groundwater recorded to be between 6.410 m AHD (GA20-BH10) to 11.524 m AHD (GA20-BH03).

As shown in Figure 3 and Table 3, groundwater was typically deeper in bores to the west of the site (GA20-BH01, GA20-BH05, GA20-BH10), compared to bores in the east of the site (GA20-BH03, GA20-BH09, GA20-BH12). It is considered likely that groundwater flows in a south westerly towards Gardiners Creek.

7.3.2 Groundwater Field Parameters

Field parameters including pH, conductivity, dissolved oxygen, temperature and oxidation reduction potential were measured in order to assess the subsurface environmental condition of the groundwater at the site. Field measurements were undertaken using a water quality meter prior to, during and at the completion of purging prior to sampling. The field measurements are presented in Table 5.

Table 5: Groundwater field characteristics

Well ID	Date	DO (mg/L)	EC (uS/cm)	TDS* (mg/L)	pH	Redox (mV)	Temp (°C)	Comments
GA20-BH01	01/10/20	3.95	1,687	1,081	6.41	84.2	24.7	Brown, high turbidity, no odour. Pumped dry and not sampled.
GA20-BH03	01/10/20	2.89	4,720	3,021	6.03	93.1	18.3	Clear, low turbidity, no odour
GA20-BH05	01/10/20	3.45	5,854	3,747	5.72	134.9	16.6	Pale brown, low turbidity, no odour
GA20-BH09	01/10/20	2.23	8,459	5,413	6.48	90.7	16.7	Pale brown, low turbidity, no odour

Well ID	Date	DO (mg/L)	EC (uS/cm)	TDS* (mg/L)	pH	Redox (mV)	Temp (°C)	Comments
GA20-BH10	01/10/20	5.91	1,633	1,045	6.26	88.7	17.4	Pale brown, medium turbidity, no odour
GA20-BH12	01/10/20	4.26	1,102	705	5.97	138.2	16.7	Clear, low turbidity, no odour

Notes: mg/L milligrams per litre; uS/cm microsiemens per centimetre; TDS total dissolved solids calculated from EC; redox oxidation-reduction potential; mV millivolts; °C degrees Celsius; DO Dissolved oxygen; EC Electrical conductivity

Groundwater field measurements are variable with the groundwater assessment indicating the aquifer is potentially confined to the south of the site. In well GA20-BH12, groundwater was encountered during drilling at approximately 8 m depth but rose to a depth of around 4.2 m following well installation. Field records also indicate that the TDS concentrations are significantly lower to the south indicating a potential influence from the geological fault or site services. The geological fault appears to run in a north south direction through the east of the site (Buildings A and G). As the fault represents an area of higher fracturing higher hydraulic conductivity can be expected in the wells hydraulically down gradient, to the south of the site, than those to the north.

7.4 Laboratory Analytical Results for Groundwater

The tabulated laboratory analytical results from the groundwater investigation are presented in APPENDIX B, Table D. Laboratory certificates are presented in APPENDIX F.

7.5 Data Quality Assurance

A data Quality Assurance (QA) program was implemented as part of the investigation undertaken. The main aspects of data QA relate to the field work procedures, collection of quality control samples (i.e. field duplicates) and generation of internal laboratory quality control data to support the reported results and the assessment of laboratory results.

The quality of the laboratory data generated was supported with appropriate laboratory Quality Control (QC) samples and assessed using standard methods. Internal laboratory QC samples including method blanks, laboratory duplicates, matrix spikes, laboratory control sample spikes and surrogate spikes were analysed as part of the quality assurance program.

The calculated RPDs for intra-laboratory duplicates and inter-laboratory duplicates are presented in APPENDIX G for soil and groundwater. In addition, calibration certificates for field equipment have been provided in APPENDIX H.

Table 6: Summary of QAQC Summary for Soil and Groundwater Sampling

QC Sample Type	Number of Results NOT Meeting Data Quality Objectives	Total Number of Results (Individual Analytes)	Percentage Meeting Data Quality Objectives
Primary duplicates	6	1,017	99.4%
Secondary duplicates	13	655	98.1%
Laboratory internal duplicates	10	820	98.8%

QC Sample Type	Number of Results NOT Meeting Data Quality Objectives	Total Number of Results (Individual Analytes)	Percentage Meeting Data Quality Objectives
Matrix Spikes	18	423	95.8%
Method blanks	0	771	100%
Laboratory Control Samples	1	415	99.8%
Overall completeness	**48**	**4,101**	**98.9%**

Variability between the primary sample and the secondary duplicate is inferred to be due to heterogeneity of the soil within the Fill material.

The overall QA/QC completeness for the soil and groundwater results combined is 98.9% and therefore above the overall objective of 95%. Based on this, it is considered that the overall data quality generated during the assessment of soils is of sufficient quality upon which to base decisions for this assessment.

8.0 DISCUSSION OF RESULTS

8.1 Consideration of Beneficial Land Uses for Onsite Retention

Table A present the results screened against criteria for the protection of the beneficial uses of land described in APPENDIX D. Table 7 provides a summary assessment of the soil results.

Table 7: Summary of screening assessment (land)

Beneficial Use	Discussion of the laboratory test results	Implications
Maintenance of Highly modified ecosystems	Four analytes in fill samples were identified to exceed the relevant guideline values: ■ **Copper** (170 mg/kg): one sample with a concentration of 22,000 mg/kg. ■ **Lead** (1,100 mg/kg): one sample with a concentration of 1,400 mg/kg. ■ **Zinc** (400 mg/kg): four samples ranging from 530 to 14,000 mg/kg. ■ **B(a)P** (0.7 mg/kg): 10 samples ranging from 0.9 to 6.7 mg/kg	The fill soils on site were found to have concentrations of some contaminants above adopted criteria for protection of ecosystems and human health in a high-density residential scenario. These results were all in the fill in the south of the site (BH04, BH10 to BH12, TP08, TP09 and TP10A). The natural soils were not found to have any contaminants above the adopted criteria. The fill on site was found to have concentrations of BaP TEQ and lead above

Beneficial Use	Discussion of the laboratory test results	Implications
Human health	**Lead** (1,200 mg/kg): GA20-BH-HAW-12/2001 was reported to have a concentration of 1,400 mg/kg. Two concentrations of **benzo(a)pyrene** toxic equivalency (BaP TEQ) exceeded the adopted health-based guidelines in the fill horizon between 5.8 and 9.6 mg/kg.	adopted criteria for protection of human health in a residential scenario. However, when applying statistics to these concentrations, the calculated 95% upper confidence levels (UCL) are below the adopted criteria. As such, neither the fill nor natural soil are considered to pose an unacceptable health risk to site users. Although some concentrations of metals and BaP remain above the adopted ecological guidelines this is not considered to pose a risk to the proposed redevelopment as the areas of impact are likely to be removed as part of the basement excavation woks. The development contractor should have a Construction Environmental Management Plan in place to manage the excavation, movement and offsite disposal of the fill soils on site. If residual fill horizon remains in the south of the site and has elevated concentrations above adopted ecological criteria for the residential use, management of the fill should be undertaken comprising installation of separation layers. Separation layers could include buildings, pavement or certified Fill Material. In landscaped or garden areas, the fill should be removed to a minimum depth of 0.5 m below the final surface level and replaced with material meeting the requirements of Fill Material (IWRG 600.2. 621). Given the concentrations found, the above separation layers (if used) should be managed into the future through development and implementation of a Site Management Plan which manages future site users when accessing the underlying fill.

Beneficial Use	Discussion of the laboratory test results	Implications
Aesthetics	Minor aesthetic impacts were identified in the fill horizon at the site.	The fill and natural soil onsite is unlikely to pose an unacceptable aesthetic risk to residential use of the site but areas found to have a high waste content should be managed in accordance with the Construction Environmental Management Plan
Buildings and structures	The pH of the fill and natural horizon were generally within 4.6-8.5 pH units, specified in the Australian Standard AS2159-2009. The exception to this was pH in sample HAW-TP01/1001/0.0-0.1 which was recorded at pH 11.	Statistical analysis undertaken on the pH of the pH material was undertaken with the 95% UCL calculated to be 7.6 pH units. As such, the fill and natural soil onsite are unlikely to pose an unacceptable risk to buildings and structures.

8.2 Per- and Poly-Fluoroalkyl Substances (PFAS)

PFAS was tested in 11 fill samples and four natural soil sample with concentrations all found to be below the laboratory limits of detection and are well below the adopted criteria to remain on site for the proposed residential use.

8.3 Pre-Classification of Soil for Off-site Disposal

8.3.1 General

As described in APPENDIX D, pre-classification of soil for off-site disposal has been evaluated with consideration of EPA Publication IWRG702, *Soil* Sampling, dated June 2009, and EPA Publication IWRG621 (EPA, 2009a), *Soil Hazard Categorisation and Management*, dated June 2009 (EPA 2009b). The framework described in these documents will be superseded once the changes stipulated in the *Environment Protection Amendment Act* 2018 and the *Draft Environmental Protection Regulations* 2019 come into force. These legislative instruments were intended to come into force 1 July 2020, but have been delayed until 1 July 2021 as part of the Covid-19 Omnibus (Emergency Measure) Bill 2020 gazetted in April 2020. The assessment described herein is has been undertaken in accordance with the current (EPA 2009a and EPA 2009b) guidance.

EPA Publication IWRG702 (EPA 2009a) provides guidance on the minimum soil sampling frequencies as follows:

- One sample per 25 m^3 for soil volumes of less than 200 m^3 with a minimum of three samples; and
- One sample per 250 m^3 for soil volumes of greater than 200 m^3 within a minimum of ten samples, where there is sufficient data to calculate the 95% upper confidence limit of the mean.

As shown in Table 8, the sample density selected for this assessment was based on assumptions regarding the likely basement area, depth of fill material and information available from past intrusive investigation works.

Table 8: Summary of sampling rationale

Item	Details
Area of Investigation	1.08 ha
Estimated Average Depth of Fill	1.0 m (found in this investigation between 0.2 to 4 m)
Approximate Proposed Basement Area (m^2)	Basement P1 = 1,150* Basement P2 = 2,580* Basement P3 = 2,730* Basement P4 = 890* **Basement Area Total = 7,350**
Approximate volume of soil to be excavated based on a 3 m deep excavation	9,650 (Fill) 12,500 (Natural)
Available Sample Data	41 (Fill) 23 (Natural)

Note: * = basement areas from Hayball, Masterplan Alignment Report – Rev 01, Dated 09 June 2020, Page: 38.

8.3.2 Pre-Classification of the Fill Horizon

A total of 41 samples from the fill horizon have been collected during the 2020 sampling event which is sufficient to characterise approximately 10,250 m^3 of fill. The results of the laboratory analysis for the Site (APPENDIX B, Table B) indicate a Category A Contaminated Soil classification for the fill horizon as summarised in Table 9 based on discrete samples.

Table 9: Summary of Fill Horizon exceeding Fill Material Criteria using discrete samples

Analyte	No of Samples above Fill Material Criteria	Fill Material Upper Limits (mg/kg)	Category C Upper Limits (mg/kg)	Category B Upper Limits (mg/kg)	Concentration Range (mg/kg)	Preliminary Waste Classification
Arsenic	5	20	500	2,000	<2 - 45	Category C
Copper	1	100	5,000	20,000	<5 – 22,000	Category A
Lead	2	300	1,500	6,000	7.3 – 1,400	Category C
Mercury	2	1	75	300	<0.1 – 5.1	Category C
Nickel	1	30	3,000	12,000	<5 - 72	Category C
Tin	5	20	500		<10 – 730	Category B
Zinc	8	200	35,000	140,000	9.3 – 14,000	Category C
BaP	8	1	5	20	<0.5 – 6.7	Category B
Total PAH	4	20	100	400	<0.5 – 85.3	Category C

Analyte	No of Samples above Fill Material Criteria	Fill Material Upper Limits (mg/kg)	Category C Upper Limits (mg/kg)	Category B Upper Limits (mg/kg)	Concentration Range (mg/kg)	Preliminary Waste Classification
Fluoride	1	450	10,000	40,000	<100 – 460	Category C
pH	1	>4-<9	>9<12		5.9 - 11	Category C

If the fill is considered to be a single domain with respect to contamination, in accordance with IWRG702, an assessment of the soil waste classification has been made with respect to the 95% Upper Confidence Limit on the arithmetic mean (95% $UCL_{average}$). The calculated 95% $UCL_{average}$ concentration for a given analyte indicates that, with 95% certainty, the average concentration will not exceed the calculated 95% $UCL_{average}$ concentration.

Statistical analysis was undertaken for those COIs that report concentrations greater than the maximum acceptable concentration for Fill Material. Given the sampling frequency and number of samples collected, the use of the 95% $UCL_{average}$ to classify the soil is considered to be appropriate. The results of the 95% $UCL_{average}$ assessment are attached to this report (APPENDIX I) and summarised in Table 10.

Table 10: Statistical Summary of Fill Material with 95% UCL

Analyte	No of Samples above Fill Material Criteria	Fill Material Upper Limits (mg/kg)	Category C Upper Limits (mg/kg)	Category B Upper Limits (mg/kg)	95% UCL (mg/kg)	Waste Classification
Arsenic	5	20	500	2,000	12.76	Fill Material
Copper	1	100	5,000	20,000	2,895	Category C
Lead	2	300	1,500	6,000	133.80	Fill Material
Mercury	2	1	75	300	0.25	Fill Material
Nickel	1	30	3,000	12,000	18.54	Fill Material
Tin	5	20	500		95.24	Category C
Zinc	8	200	35,000	140,000	1,979	Category C
BaP	8	1	5	20	1.34	Category C
Total PAH	4	20	100	400	13.07	Fill Material
Fluoride	1	450	10,000	40,000	226.80	Fill Material
pH	1	>4-<9	>9<12		7.6	Fill Material

The results of the statistical assessment confirm a Category C Contaminated Soil for the fill onsite based on metals and BaP concentrations. As noted in Section 9.1, the fill in the south of the site appears to contain the elevated metals and BaP. It would be prudent to delineate this area and handle the fill from the south as a separate domain to the north to potentially allow disposal of the northern fill under a Fill Material classification.

EPA requires that leachability testing be undertaken in accordance with the (ASLP – Australian Standards AS4439.2 and 4439.3) in cases where total concentration data are greater than 20 times the relevant Category C leachable concentration upper limits. As such, arsenic, cadmium, lead, mercury, nickel and B(a)P required ASLP analysis. None of the samples subject to ASLP analysis exceeded the threshold criteria stipulated in EPA Publication IWRG 621 that would change the Category C Classification of the fill horizon

Based on the above assessment, the fill to be disposed from site as part of the redevelopment is likely to be classified as Category C for offsite disposal. As the classification is driven by seven samples in the fill in the southern side of the site. It would be prudent to treat the site as two separate areas to potentially dispose of much of the fill to the north of Bills Street as Fill Material.

In addition, given the age of the fill on site, there remains a risk that fragments of ACM are present in the fill which have not been detected as part of these works.

8.3.3 Pre-Classification of Natural Horizon

Concentration of fluoride and nickel were recorded as exceeding the Fill Material threshold criteria. As part of this program a total 23 samples have been collected from the natural soil which is sufficient to characterise up to 5,750 m^3 of natural soil. The results of the laboratory analysis for the Site (APPENDIX B, Table B) indicate a Category C Contaminated Soil classification for the natural horizon as summarised in Table 11 based on an elevated fluoride and nickel results.

Table 11: Summary of natural soil exceeding Fill Material Criteria using discrete samples

Analyte	No of Samples above Fill Material Criteria	Fill Material Upper Limits (mg/kg)	Category C Upper Limits (mg/kg)	Category B Upper Limits (mg/kg)	Concentration Range (mg/kg)	Preliminary Waste Classification
Nickel	1	30	3,000	12,000	<5 - 91	Category C
Fluoride	8	450	10,000	40,000	<100 - 910	Category C

As with the results from the fill horizon analysis, 95% UCLs were also calculated for the natural soils in general accordance with the VIC EPA IWRG guidelines and are summarised below.

Table 12: Statistical Summary of Natural Soils with 95% UCL

Analyte	No of Samples above Fill Material Criteria	Fill Material Upper Limits (mg/kg)	Category C Upper Limits (mg/kg)	Category B Upper Limits (mg/kg)	95% UCL (mg/kg)	Waste Classification
Nickel	1	30	3,000	12,000	26.22	Fill Material
Fluoride	8	450	10,000	40,000	414.90	Fill Material

Based on the above assessment, if natural soil is to be disposed from site as part of the redevelopment is likely to be classified as Fill Material for offsite disposal.

8.4 Groundwater Results

The results of the screening groundwater assessment are shown in Table D and summarised in Table 13.

Table 13: Summary of screening assessment (water)

Protected Beneficial Use for Segment C	Discussion of the laboratory test results
Water dependent ecosystems and species	Copper, lead, nickel, zinc and nitrate were reported to be in excess of the 95% species protection levels in the ANZG (2018) guidelines groundwater.
Potable mineral water supply	Groundwater collected from all five wells was reported as containing nickel concentrations (0.077 to 0.15 mg/kg) which exceeded the Australian drinking Water Guidelines (0.02 mg/kg).
Agriculture and irrigation (stock watering)	There were no exceedances of adopted screening criteria.
Industrial and commercial	There were no exceedances of adopted screening criteria.
Water-based recreation (primary contact recreation)	Sulphate concentrations in monitoring wells GA20-BH09 and Ga20-BH10 exceedances of adopted screening criteria.
Traditional Owner cultural values	Addressed through consideration of potable water supply and water dependent ecosystems.
Cultural and spiritual values	Addressed through consideration of potable water supply and water dependent ecosystems.
Buildings and structures.	There were no exceedances of adopted screening criteria.
Geothermal properties	Not applicable.

It is noted that elevated volatile organic compound concentrations including Methyl Ethyl Ketone (MEK), acetone, chloroform, and dichloromethane were detected within the monitoring wells across the site. The detected concentrations are relatively consistent with minor decreases in concentrations detected in the down gradient wells (GA20-BH10 and GA20-BH05). The site is unlikely to be the source of the contamination, based on the site history, with the source likely located offsite to the north east.

These compounds noted above are volatile and can potentially pose a vapour intrusion health risk into buildings. Based on the detectable concentrations, a preliminary risk assessment was conducted on the volatile contaminants within the groundwater. The methodology and results of the preliminary groundwater vapor risk assessment are detailed in APPENDIX J.

The risk assessment included MEK, acetone, chloroform, and dichloromethane. The preliminary risk assessment indicates that the maximum recorded volatile concentrations were below the adopted screening criteria and represent a low risk of vapour intrusion to the proposed development. It should be noted that the current preliminary risk assessment is limited, and only pertains to a single groundwater monitoring event.

The methodology and results of the preliminary groundwater vapor risk assessment are detailed in APPENDIX J.

Overall, the groundwater assessment has indicated that:

1) Groundwater is at a depth of between 4.2 to 9.0 m below ground level and appears to be under artesian conditions in the southern portion of the site. Groundwater is likely flowing in a south westerly direction towards Gardiners Creek;

2) The concentrations of contaminants found in the groundwater are relatively consistent across the wells indicating likely background concentrations;

3) The groundwater monitoring has indicated generally minor contamination from metals which is likely naturally occurring. As such, any groundwater encountered during the works, should be managed in accordance with a Construction Environmental Management Plan;

4) The site is unlikely to be a source of groundwater pollution with a slight contamination gradient decreasing in a south westerly direction, indicating an offsite source potentially located to the north east;

5) Monitoring wells GA20-BH03, GA20-BH05 and GA20-BH10 recorded detectable volatile organic compounds. A preliminary groundwater vapour risk assessment has indicated that calculated vapour concentrations associated with the detectable volatile compounds were below the adopted guidelines and do not represent a potential vapour intrusion risk to the proposed residential redevelopment.

6) Although the construction is unlikely to intercept groundwater due to its depth, if encountered it should be managed in accordance with a Construction Environmental Management Plan;

7) Due to its depth, it is unlikely that the groundwater will intersect with the proposed basement however deep foundations may interact with the groundwater in the southern portion of the site.

9.0 CONCLUSIONS

Golder has undertaken intrusive investigation works at the DHHS site at Bills Street, Hawthorn to provide further information regarding the contamination status of the site. The assessment involved consolidation of historical reporting, as well as intrusive soil and groundwater assessment works. Based on the findings of the assessment, the following conclusions have been made:

- The fill soils on site were found to have concentrations of some contaminants above adopted criteria for protection of ecosystems and human health in a residential scenario. These results were mainly in the fill in the south of the site. The natural soils were not found to have any contaminants above the adopted criteria.

- The elevated concentrations of metals and BaP in the fill in the south of the site appears to be confined to the top 0.5 m of soil and will generally be removed as part of the basement excavation works. If residual fill horizon remains in the south of the site and has elevated concentrations above adopted human health and ecological criteria for the residential use, management of the fill should be undertaken comprising installation of separation layers. These layers could include buildings, pavement or certified Fill Material. In landscaped or garden areas, the fill should be removed to a minimum depth of 0.5 m below the final surface level and replaced with material meeting the requirements of Fill Material (EPA IWRG 600.2 and IWRG 621). Given the concentrations found, the above separation layers, if used, should be managed into the future through development and implementation of a Site Management Plan which manages future site users when accessing the underlying fill.

- The development contractor should have a Construction Environmental Management Plan in place to manage the excavation, movement and offsite disposal of any soils on site.
- **Fill Horizon**: Up to 10,250 m^3 of the Fill Horizon has been pre-classified as **Category C Contaminated Soil** material in accordance with EPA Publication IWRG 621 based on calculated 95% UCLs for copper, tin, zinc and BaP. As the classification is driven by samples from fill in the south of the site, it would be prudent to treat the north and south sections of the site independently. This could potentially reduce the volume of soil to be disposed of as Category C soil as the fill from the northern section would be classified as Fill Material.

  The ASLP concentrations for the metals and BaP are below the threshold criteria for Category C Contaminated Soil. Although no potential asbestos fragments were identified as part of this or historic sampling programs, it is possible ACM is still present in the fill horizon at the site in localised areas and in particular associated with historic underground services beneath the footprints of the former buildings.
- **Natural Horizon:** Up to 5,750 m^3 of Natural Horizon has been pre-classified as **Fill Material** in accordance with EPA Publication IWRG 621 based on the 95% UCL concentrations calculated for fluoride and nickel.
- Groundwater is at a depth of between 4.2 to 9.0 m below ground level and appears to be under artesian conditions in the southern portion of the site. Groundwater is likely flowing in a south westerly direction towards Gardiners Creek;
- The groundwater monitoring event has indicated generally minor contamination from metals which is likely naturally occurring. This site is unlikely to be the source of this contamination.
- Low concentrations of volatile compounds were also detected across the site including Methyl Ethyl Ketone (MEK), acetone, chloroform, and dichloromethane. These concentrations show a decreasing gradient to the southwest and are considered to be from an offsite source.
- A preliminary groundwater vapour risk assessment has indicated that calculated vapour concentrations associated with detected volatile chemicals represents a low potential vapour intrusion risk to the proposed residential redevelopment.
- Due to its depth, it is unlikely that the groundwater will intersect with the proposed basement however deep foundations may interact with the groundwater in the southern portion of the site.

It is noted that these conclusions are formed from the information available at the time of the assessment, further sampling, or changes in the site condition after the completion of this assessment, may result in changes to the conclusions.

10.0 REFERENCES

ESG Environmental Pty Ltd (2016), *Preliminary Environmental Site Assessment*, 1-12 Bills Street, Hawthorn, Victoria, Version 2, 2016-104.

Hayball (2020), *Masterplan Alignment Report*, Rev 01

Intrax (2017), *Geotechnical site investigation, Bill Street, Hawthorn, VIC*, 88797.

Golder (2020), *Public Housing Renewal Project – Bills Street and Robinson Road, Hawthorn*, REF: 20145767-022-R-RevA

EPA Publication IWRG621 (EPA, 2009a), *Soil Hazard Categorisation and Management*, dated June 2009

EPA Publication IWRG702 (EPA, 2009b), *Soil Sampling*, dated June 2009

11.0 IMPORTANT INFORMATION

Your attention is drawn to the document titled which is included in APPENDIX A of this report. The statements presented in that document are intended to inform a reader of the report about its proper use. There are important limitations as to who can use the report and how it can be used. It is important that a reader of the report understands and has realistic expectations about those matters. The Important Information document does not alter the obligations Golder has under the contract between it and its client.

Signature Page

Golder Associates Pty Ltd

Matthew Sheppard
Senior Environmental Scientist

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Principal Environmental Engineer

MGS/IMK

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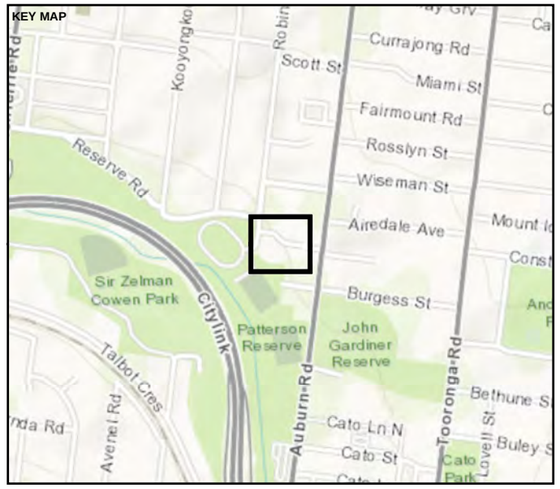
Figures



LEGEND

- Site Extent
- Property Boundary

Investigation Location

- Borehole (Golder,2020)
- Testpit (Golder,2020)

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NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM, DATE OF CAPTURE 07/09/2020.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.

CLIENT

DEPARTMENT OF HEALTH AND HUMAN SERVICES

PROJECT

PUBLIC HOUSING RENEWAL PROJECT – 1- 7 BILLS STREET, HAWTHORN

TITLE

SITE LAYOUT PLAN

CONSULTANT

GOLDER

YYYY-MM-DD	2020-10-19
DESIGNED	-
PREPARED	CJS/SDH
REVIEWED	MS
APPROVED	IMK

PROJECT NO.	CONTROL	REV.	FIGURE
20145767	014-R	0	1

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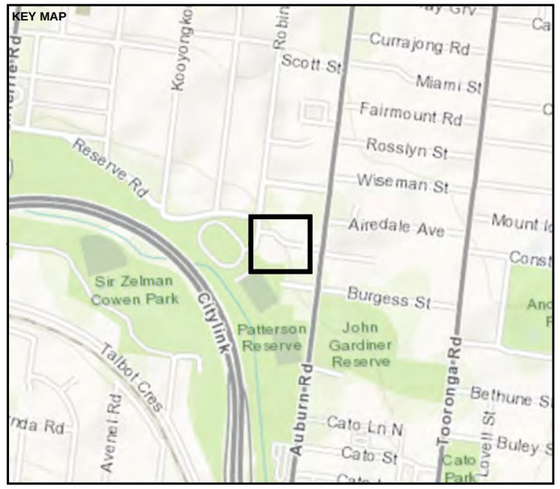

LEGEND

- Site Extent
- Property Boundary

Investigation Location

- Borehole (Golder,2020)
- Borehole (Intrax,2017)
- Testpit (Golder,2020)

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1:500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM, DATE OF CAPTURE 07/09/2020.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.

CLIENT

DEPARTMENT OF HEALTH AND HUMAN SERVICES

PROJECT

PUBLIC HOUSING RENEWAL PROJECT – 1- 7 BILLS STREET, HAWTHORN

TITLE

SOIL SAMPLING LOCATIONS

CONSULTANT

GOLDER

YYYY-MM-DD	2020-10-19
DESIGNED	-
PREPARED	SDH
REVIEWED	MS
APPROVED	IMK

PROJECT NO.	CONTROL	REV.	FIGURE
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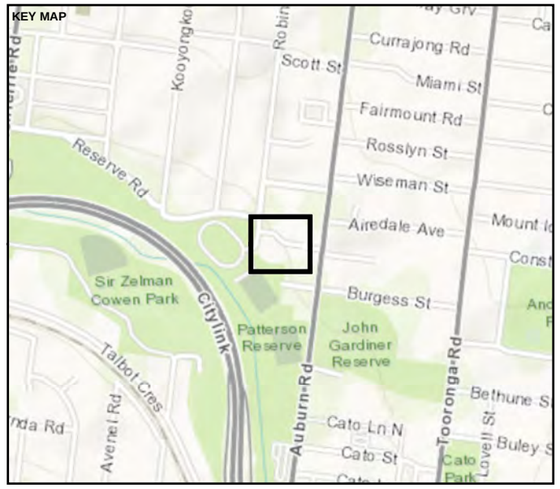
KEY MAP



LEGEND

- Site Extent
- Property Boundary
- Inferred Groundwater flow direction
- Borehole with Groundwater Monitoring Well Installed

Investigation Location

- Borehole (Golder,2020)
- Borehole (Intrax,2017)
- Testpit (Golder,2020)

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NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)

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3. STATE DATA SOURCED FROM DATA.VIC.GOV.AU.

CLIENT

DEPARTMENT OF HEALTH AND HUMAN SERVICES

PROJECT

PUBLIC HOUSING RENEWAL PROJECT – 1- 7 BILLS STREET, HAWTHORN

TITLE

GROUNDWATER SAMPLING LOCATIONS

CONSULTANT

GOLDER

YYYY-MM-DD	2020-10-19
DESIGNED	-
PREPARED	SDH
REVIEWED	MS
APPROVED	IMK

PROJECT NO.	CONTROL	REV.	FIGURE
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APPENDIX A

Important Information

The document ("Report") to which this page is attached and which this page forms a part of, has been issued by Golder Associates Pty Ltd ("Golder") subject to the important limitations and other qualifications set out below.

This Report constitutes or is part of services ("Services") provided by Golder to its client ("Client") under and subject to a contract between Golder and its Client ("Contract"). The contents of this page are not intended to and do not alter Golder's obligations (including any limits on those obligations) to its Client under the Contract.

This Report is provided for use solely by Golder's Client and persons acting on the Client's behalf, such as its professional advisers. Golder is responsible only to its Client for this Report. Golder has no responsibility to any other person who relies or makes decisions based upon this Report or who makes any other use of this Report. Golder accepts no responsibility for any loss or damage suffered by any person other than its Client as a result of any reliance upon any part of this Report, decisions made based upon this Report or any other use of it.

This Report has been prepared in the context of the circumstances and purposes referred to in, or derived from, the Contract and Golder accepts no responsibility for use of the Report, in whole or in part, in any other context or circumstance or for any other purpose.

The scope of Golder's Services and the period of time they relate to are determined by the Contract and are subject to restrictions and limitations set out in the Contract. If a service or other work is not expressly referred to in this Report, do not assume that it has been provided or performed. If a matter is not addressed in this Report, do not assume that any determination has been made by Golder in regards to it.

At any location relevant to the Services conditions may exist which were not detected by Golder, in particular due to the specific scope of the investigation Golder has been engaged to undertake. Conditions can only be verified at the exact location of any tests undertaken. Variations in conditions may occur between tested locations and there may be conditions which have not been revealed by the investigation and which have not therefore been taken into account in this Report.

Golder accepts no responsibility for and makes no representation as to the accuracy or completeness of the information provided to it by or on behalf of the Client or sourced from any third party. Golder has assumed that such information is correct unless otherwise stated and no responsibility is accepted by Golder for incomplete or inaccurate data supplied by its Client or any other person for whom Golder is not responsible. Golder has not taken account of matters that may have existed when the Report was prepared but which were only later disclosed to Golder.

Having regard to the matters referred to in the previous paragraphs on this page in particular, carrying out the Services has allowed Golder to form no more than an opinion as to the actual conditions at any relevant location. That opinion is necessarily constrained by the extent of the information collected by Golder or otherwise made available to Golder. Further, the passage of time may affect the accuracy, applicability or usefulness of the opinions, assessments or other information in this Report. This Report is based upon the information and other circumstances that existed and were known to Golder when the Services were performed and this Report was prepared. Golder has not considered the effect of any possible future developments including physical changes to any relevant location or changes to any laws or regulations relevant to such location.

Where permitted by the Contract, Golder may have retained subconsultants affiliated with Golder to provide some or all of the Services. However, it is Golder which remains solely responsible for the Services and there is no legal recourse against any of Golder's affiliated companies or the employees, officers or directors of any of them.

By date, or revision, the Report supersedes any prior report or other document issued by Golder dealing with any matter that is addressed in the Report.

Any uncertainty as to the extent to which this Report can be used or relied upon in any respect should be referred to Golder for clarification

APPENDIX B

Analytical Tables

						Asbestos	Per- and polyfluoroalkyl substances (PFAS)																																			
						Asbestos (1 = present, 0 = absent)	Perfluorononanesulfonic acid (PFNS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)	Sum of WA DER PFASs (n=10)	Sum of PFASs (n=28)	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTSA)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)
						-	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
EQL							0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.01	0.05	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005
Buildings & Structures																																										
CRCCARE 2011 HSLs Intrusive Maintenance Worker Direct Contact																																										
CRCCARE 2011 HSLs Residential (low-density) A Direct Contact																																										
NEPM 2013 EILs-Urban Residential and public open space																																										
NEPM 2013 ESL- Urban residential and public open space, Fine Soil																																										
NEPM 2013 HIL-Residential B Soil																																										
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																																										
0-1m																																										
1-2m																																										
PFAS NEMP 2.0 2020 Eco Indirect Eco Indirect All Land Uses													0.01																													
PFAS NEMP 2.0 2020 HH Public Open Space												10			1																											
PFAS NEMP 2.0 2020 HH Residential Minimal Soil Access												20			2																											
Location	**Sample**	**Depth**	**Date Sampled**	**Fill/Natural**	**Lab Report No.**																																					
GA20-BH-HAW-01	GA20-BH-HAW-01/2001/0.0-0.1	0-0.1	17/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-01	GA20-BH-HAW-01/2002/0.4-0.5	0.4-0.5	17/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-01	GA20-BH-HAW-01/2004/1.4-1.5	1.4-1.5	17/09/2020	Natural	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-02	GA20-BH-HAW-02/2001/0.0-0.1	0-0.1	16/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	16/09/2020	Natural	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-02	GA20-BH-HAW-02/2004/1.4-1.5	1.4-1.5	16/09/2020	Natural	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-03	GA20-BH-HAW-03/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-03	GA20-BH-HAW-03/2002/0.4-0.5	0.4-0.5	21/09/2020	Natural	746503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-04	GA20-BH-HAW-04/2001/0.0-0.1	0-0.1	1/09/2020	Fill	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-04	GA20-BH-HAW-04/2002/0.4-0.5	0.4-0.5	1/09/2020	Fill	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-04	GA20-BH-HAW-04/2004/1.4-1.5	1.4-1.5	1/09/2020	Natural	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-05	GA20-BH-HAW-05/2001/0.0-0.1	0-0.1	4/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-05	GA20-BH-HAW-05/2002/0.4-0.5	0.4-0.5	4/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-05	GA20-BH-HAW-05/2004/1.4-1.5	1.4-1.5	4/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-06	GA20-BH-HAW-06/2001/0.0-0.1	0-0.1	15/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	15/09/2020	Natural	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-06	GA20-BH-HAW-06/2004/1.4-1.5	1.4-1.5	15/09/2020	Natural	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-07	GA20-BH-HAW-07/2001/0.0-0.1	0-0.1	31/08/2020	Fill	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-07	GA20-BH-HAW-07/2002/0.4-0.5	0.4-0.5	31/08/2020	Natural	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-07	GA20-BH-HAW-07/2004/1.4-1.5	1.4-1.5	31/08/2020	Natural	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-08	GA20-BH-HAW-08/2001/0.0-0.1	0-0.1	8/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-08	GA20-BH-HAW-08/2002/0.4-0.5	0.4-0.5	8/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-08	GA20-BH-HAW-08/2004/1.4-1.5	1.4-1.5	8/09/2020	Natural	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-09	GA20-BH-HAW-09/2001/0.0-0.1	0-0.1	3/09/2020	Fill	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-09	GA20-BH-HAW-09/2002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-09	GA20-BH-HAW-09/2004/1.4-1.5	1.4-1.5	3/09/2020	Natural	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-10	GA20-BH-HAW-10/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-10	GA20-BH-HAW-10/2003/0.9-1.0	0.9-1	21/09/2020	Fill	746503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-10	GA20-BH-HAW-10/2004/1.4-1.5	1.4-1.5	22/09/2020	Fill	746503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-11	GA20-BH-HAW-11/2001/0.0-0.1	0-0.1	10/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-11	GA20-BH-HAW-11/2002/0.4-0.5	0.4-0.5	10/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-11	GA20-BH-HAW-11/2004/1.4-1.5	1.4-1.5	10/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-11	GA20-BH-HAW-11/2005/2.6-2.7	2.6-2.7	10/09/2020	Natural	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-12	GA20-BH-HAW-12/2001/0.0-0.1	0-0.1	11/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-12	GA20-BH-HAW-12/2002/0.4-0.5	0.4-0.5	11/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-12	GA20-BH-HAW-12/2004/1.4-1.5	1.4-1.5	11/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP01	HAW-TP01/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP01	HAW-TP01/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353/749457	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP01	HAW-TP01/PACM/0.1	-0.1	3/09/2020	Fragment	742353	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP02	HAW-TP02/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP02	HAW-TP02/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP02	HAW-TP02/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP03	HAW-TP03/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP03	HAW-TP03/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP03	HAW-TP03/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP04	HAW-TP04/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP04	HAW-TP04/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP04	HAW-TP04/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP05	HAW-TP05/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP05	HAW-TP05/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP05	HAW-TP05/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP05	HAW-TP05/PACM/0.1	-0.1	3/09/2020	Fragment	742353	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP06	HAW-TP06/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP06	HAW-TP06/1002/0.3-0.4	0.3-0.4	3/09/2020	Natural	742353/749457	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP07	HAW-TP07/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP07	HAW-TP07/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP07	HAW-TP07/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP08	HAW-TP08/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP08	HAW-TP08/1003/0.8-0.9	0.8-0.9	3/09/2020	Natural	742353/749457	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP08	HAW-TP08/1004/1.9-2.0	1.9-2	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP09	HAW-TP09/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP09	HAW-TP09/1003/0.5-0.6	0.5-0.6	3/09/2020	Fill	742353/749457	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP10	HAW-TP10/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP10	HAW-TP10/1002/0.4-0.5	0.4-0.5	3/09/2020	Natural	742353/749457	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP10A	HAW-TP10A/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP10A	HAW-TP10A/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

						Halogenated Benzenes								Heavy Metals													Herbicides	MAH										
						1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	4-Chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Arsenic	Cadmium	Chromium	Chromium (hexavalent)	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Zinc	Dinoseb	1,2,4-trimethylbenzene	1,3,5-Trimethylbenzene	Benzene	Toluene	Isopropylbenzene	Styrene	Ethylbenzene	Xylenes (m & p)	Xylene (o)	Xylenes (Sum of total)	Total MAHs
						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
EQL						0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	2	0.4	5	1	5	5	0.1	5	5	2	0.2	10	5	20	0.5	0.5	0.1	0.1	0.5	0.5	0.1	0.2	0.1	0.3	0.5
Buildings & Structures																																						
CRCCARE 2011 HSLs Intrusive Maintenance Worker Direct Contact																														1100	120000			85000			130000	
CRCCARE 2011 HSLs Residential (low-density) A Direct Contact																														100	14000			4500			12000	
NEPM 2013 EILs-Urban Residential and public open space														100*		410*		170*	1100*			180*				400*												
NEPM 2013 ESL- Urban residential and public open space, Fine Soil																														65	105			125			45	
NEPM 2013 HIL-Residential B Soil													**15**	**500**	**150**		**500**	**30000**	**1200**	**120**		**1200**	**1400**			**60000**												
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																																						
0-1m																														0.7	480			NL			110	
1-2m																														1	NL			NL			310	
PFAS NEMP 2.0 2020 Eco Indirect Eco Indirect All Land Uses																																						
PFAS NEMP 2.0 2020 HH Public Open Space																																						
PFAS NEMP 2.0 2020 HH Residential Minimal Soil Access																																						
Location	**Sample**	**Depth**	**Date Sampled**	**Fill/Natural**	**Lab Report No.**																																	
GA20-BH-HAW-01	GA20-BH-HAW-01/2001/0.0-0.1	0-0.1	17/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	6.9	<0.4	31	<1	7.3	18	<0.1	<5	8.3	<2	<2	<10	21	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-01	GA20-BH-HAW-01/2002/0.4-0.5	0.4-0.5	17/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	11	<0.4	44	<1	11	11	<0.1	<5	9	<2	<2	<10	15	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-01	GA20-BH-HAW-01/2004/1.4-1.5	1.4-1.5	17/09/2020	Natural	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	9.9	<0.4	53	<1	13	12	<0.1	<5	9.7	<2	<2	<10	16	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-02	GA20-BH-HAW-02/2001/0.0-0.1	0-0.1	16/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	6.5	<1	<5	16	<0.1	<5	<5	<2	<2	<10	27	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	16/09/2020	Natural	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	6.4	<1	<5	<5	<0.1	<5	<5	<2	<2	<10	<5	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-02	GA20-BH-HAW-02/2004/1.4-1.5	1.4-1.5	16/09/2020	Natural	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	8.1	<0.4	31	<1	9.7	14	<0.1	<5	11	<2	<2	<10	14	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-03	GA20-BH-HAW-03/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	9.3	<0.4	26	<1	22	47	<0.1	<5	20	<2	<2	<10	280	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-03	GA20-BH-HAW-03/2002/0.4-0.5	0.4-0.5	21/09/2020	Natural	746503	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	11	<0.4	52	<1	11	16	<0.1	<5	21	<2	<2	<10	23	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-04	GA20-BH-HAW-04/2001/0.0-0.1	0-0.1	1/09/2020	Fill	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.3	<0.4	15	<1	16	74	<0.1	<5	11	<2	<0.2	<10	140	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-04	GA20-BH-HAW-04/2002/0.4-0.5	0.4-0.5	1/09/2020	Fill	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3.8	<0.4	12	<1	11	240	<0.1	<5	7	<2	<0.2	<10	63	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-04	GA20-BH-HAW-04/2004/1.4-1.5	1.4-1.5	1/09/2020	Natural	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3.5	<0.4	20	<1	<5	8.9	<0.1	<5	<5	<2	<0.2	<10	8	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-05	GA20-BH-HAW-05/2001/0.0-0.1	0-0.1	4/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3	<0.4	12	<1	7.4	29	<0.1	<5	6.5	<2	<0.2	<10	49	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-05	GA20-BH-HAW-05/2002/0.4-0.5	0.4-0.5	4/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	2.2	<0.4	6.1	<1	<5	9	<0.1	<5	<5	<2	<0.2	<10	9.3	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-05	GA20-BH-HAW-05/2004/1.4-1.5	1.4-1.5	4/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7.5	<0.4	30	<1	5.9	13	<0.1	<5	12	<2	<0.2	<10	9.8	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-06	GA20-BH-HAW-06/2001/0.0-0.1	0-0.1	15/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	13	<0.4	19	<1	21	40	<0.1	<5	18	<2	<2	<10	78	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	15/09/2020	Natural	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	12	<0.4	48	<1	9.1	20	<0.1	<5	26	<2	<2	<10	18	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-06	GA20-BH-HAW-06/2004/1.4-1.5	1.4-1.5	15/09/2020	Natural	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	14	<0.4	34	<1	18	25	<0.1	<5	27	<2	<2	<10	26	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-07	GA20-BH-HAW-07/2001/0.0-0.1	0-0.1	31/08/2020	Fill	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	10	<0.4	9.4	<1	7.4	38	<0.1	<5	<5	<2	<0.2	<10	39	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-07	GA20-BH-HAW-07/2002/0.4-0.5	0.4-0.5	31/08/2020	Natural	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	6.9	<0.4	13	<1	<5	15	<0.1	<5	<5	<2	<0.2	<10	11	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-07	GA20-BH-HAW-07/2004/1.4-1.5	1.4-1.5	31/08/2020	Natural	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	5	<0.4	31	<1	9.1	14	<0.1	<5	11	<2	<0.2	<10	13	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-08	GA20-BH-HAW-08/2001/0.0-0.1	0-0.1	8/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7.8	<0.4	18	<1	14	39	<0.1	<5	7.2	<2	<0.2	<10	90	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-08	GA20-BH-HAW-08/2002/0.4-0.5	0.4-0.5	8/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.3	<0.4	12	<1	<5	7.3	<0.1	<5	<5	<2	<0.2	<10	6.1	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-08	GA20-BH-HAW-08/2004/1.4-1.5	1.4-1.5	8/09/2020	Natural	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	5.3	<0.4	29	<1	7.4	12	<0.1	<5	14	<2	<0.2	<10	12	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-09	GA20-BH-HAW-09/2001/0.0-0.1	0-0.1	3/09/2020	Fill	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	5.4	<0.4	17	<1	25	34	<0.1	<5	12	<2	<0.2	27	270	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-09	GA20-BH-HAW-09/2002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	9.1	<0.4	26	<1	13	21	<0.1	<5	12	<2	0.3	<10	78	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-09	GA20-BH-HAW-09/2004/1.4-1.5	1.4-1.5	3/09/2020	Natural	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	8	<0.4	33	<1	8.5	16	<0.1	<5	13	<2	<0.2	<10	27	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-10	GA20-BH-HAW-10/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	<5	<1	11	100	<0.1	<5	<5	<2	<2	<10	49	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-10	GA20-BH-HAW-10/2003/0.9-1.0	0.9-1	21/09/2020	Fill	746503	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	18	<0.4	32	<1	16	43	<0.1	<5	16	<2	<2	<10	110	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-10	GA20-BH-HAW-10/2004/1.4-1.5	1.4-1.5	22/09/2020	Fill	746503	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.1	<0.4	28	<1	8	71	<0.1	<5	14	<2	<2	<10	47	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-11	GA20-BH-HAW-11/2001/0.0-0.1	0-0.1	10/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.5	<0.4	12	<1	16	48	<0.1	<5	8	<2	<0.2	<10	53	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-11	GA20-BH-HAW-11/2002/0.4-0.5	0.4-0.5	10/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	11	<0.4	20	<1	13	87	<0.1	<5	9.6	<2	<0.2	<10	39	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-11	GA20-BH-HAW-11/2004/1.4-1.5	1.4-1.5	10/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7.9	<0.4	32	<1	16	18	<0.1	<5	35	<2	<0.2	<10	22	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-11	GA20-BH-HAW-11/2005/2.6-2.7	2.6-2.7	10/09/2020	Natural	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7	<0.4	41	<1	25	57	<0.1	<5	91	<2	<0.2	<10	130	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-12	GA20-BH-HAW-12/2001/0.0-0.1	0-0.1	11/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	32	<0.4	41	<1	75	**1400**	0.3	<5	38	<2	<2	390	530	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-12	GA20-BH-HAW-12/2002/0.4-0.5	0.4-0.5	11/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	45	<0.4	83	<1	22,000	960	1.7	9.3	72	<2	4.8	730	1900	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-12	GA20-BH-HAW-12/2004/1.4-1.5	1.4-1.5	11/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	25	<0.4	51	<1	39	160	0.5	<5	27	<2	<2	150	170	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP01	HAW-TP01/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3.3	<0.4	11	<1	18	31	0.2	<5	11	<2	<0.2	<10	300	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP01	HAW-TP01/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353/749457	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	10	<0.4	32	<1	10	20	<0.1	<5	9.5	<2	<0.2	<10	20	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP01	HAW-TP01/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP02	HAW-TP02/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	5.6	<0.4	16	<1	18	62	0.1	<5	8.9	<2	<0.2	<10	86	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP02	HAW-TP02/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	6.1	<0.4	16	<1	18	58	0.2	<5	9.1	<2	<0.2	<10	120	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP02	HAW-TP02/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	17	<0.4	61	<1	14	22	<0.1	<5	24	2.7	<0.2	<10	19	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP03	HAW-TP03/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	8.9	<0.4	21	<1	17	30	<0.1	<5	29	<2	0.2	<10	120	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP03	HAW-TP03/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	14	<0.4	36	<1	14	26	<0.1	<5	19	<2	<0.2	<10	100	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP03	HAW-TP03/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	14	<0.4	42	<1	14	19	<0.1	<5	23	<2	<0.2	<10	31	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP04	HAW-TP04/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.5	<0.4	17	<1	5.7	21	<0.1	<5	6.8	<2	<0.2	<10	31	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP04	HAW-TP04/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	<5	<1	<5	14	<0.1	<5	<5	<2	<0.2	<10	41	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP04	HAW-TP04/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	7	<1	<5	<5	<0.1	<5	<5	<2	<0.2	<10	<5	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP05	HAW-TP05/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	8.2	<0.4	22	<1	13	34	<0.1	<5	11	<2	<0.2	<10	91	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP05	HAW-TP05/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7.5	<0.4	15	<1	9.1	23	<0.1	<5	6.3	<2	<0.2	<10	53	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP05	HAW-TP05/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	9.7	<0.4	50	<1	12	14	<0.1	<5	20	<2	<0.2	<10	15	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP05	HAW-TP05/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP06	HAW-TP06/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3.7	<0.4	11	<1	15	62	<0.1	<5	5.8	<2	<0.2	<10	94	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP06	HAW-TP06/1002/0.3-0.4	0.3-0.4	3/09/2020	Natural	742353/749457	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	5.1	<1	<5	<5	<0.1	<5	<5	<2	<0.2	<10	<5	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP07	HAW-TP07/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3.3	<0.4	8.4	<1	9.4	21	<0.1	<5	<5	<2	<0.2	<10	62	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP07	HAW-TP07/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.9	<0.4	10	<1	9.9	35	<0.1	<5	<5	<2	<0.2	<10	48	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP07	HAW-TP07/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.4	<0.4	7.7	<1	<5	5.8	<0.1	<5	<5	<2	<0.2	<10	<5	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP08	HAW-TP08/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	31	9.5	21	<1	84	240	5.1	<5	34	<2	<0.2	320	14,000	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP08	HAW-TP08/1003/0.8-0.9	0.8-0.9	3/09/2020	Natural	742353/749457	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7.8	<0.4	28	<1	11	38	<0.1	<5	10	<2	<0.2	40	73	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP08	HAW-TP08/1004/1.9-2.0	1.9-2	3/09/2020	Natural	742353

| | | | | | Organochlorine Pesticides | | | | |

						Phenolics-Halogenated									Polychlorinated Biphenyls								Other			Solvents			Total Petroleum Hydrocarbons											
						2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2-Chlorophenol	4-Chloro-3-methylphenol	Pentachlorophenol	Tetrachlorophenols (Sum of total)	Halogenated Phenols (Sum of total)	Aroclor 1016	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1221	PCB (Sum of total)	Cyanide (total)	Fluoride	pH (aqueous extract)	Methyl Ethyl Ketone	Methyl iso-butyl ketone	Acetone	TRH C6 - C9 Fraction	TRH C10 - C14 Fraction	TRH C15 - C28 Fraction	TRH C29 - C36 Fraction	TRH+C10 - C36 (Sum of total)	TRH+C10 - C40 (Sum of total)	TRH C6 - C10 Fraction F1	TRH C6 - C10 Fraction Less BTEX F1	TRH >C10 - C16 Fraction F2	TRH >C10 - C16 Fraction Less Naphthalene F2	TRH >C16 - C34 Fraction F3	TRH >C34 - C40 Fraction F4
						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	pH_Units	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
EQL						1	1	0.5	0.5	0.5	1	1	10	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	100	0.1	0.5	0.5	0.5	20	20	50	50	50	100	20	20	50	50	100	100
Buildings & Structures																																									
CRCCARE 2011 HSLs Intrusive Maintenance Worker Direct Contact																																		82000		62000		85000	120000
CRCCARE 2011 HSLs Residential (low-density) A Direct Contact																																		4400		3300		4500	6300
NEPM 2013 EILs-Urban Residential and public open space																																									
NEPM 2013 ESL- Urban residential and public open space, Fine Soil																																			180	120		1300	5600
NEPM 2013 HIL-Residential B Soil												**130**									**1**																			
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																																									
0-1m																																			50		280				
1-2m																																			90		NL				
PFAS NEMP 2.0 2020 Eco Indirect Eco Indirect All Land Uses																																									
PFAS NEMP 2.0 2020 HH Public Open Space																																									
PFAS NEMP 2.0 2020 HH Residential Minimal Soil Access																																									
Location	**Sample**	**Depth**	**Date Sampled**	**Fill/Natural**	**Lab Report No.**																																				
GA20-BH-HAW-01	GA20-BH-HAW-01/2001/0.0-0.1	0-0.1	17/09/2020	Fill	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	210	6.8	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-01	GA20-BH-HAW-01/2002/0.4-0.5	0.4-0.5	17/09/2020	Fill	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	290	6.1	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-01	GA20-BH-HAW-01/2004/1.4-1.5	1.4-1.5	17/09/2020	Natural	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	280	6.4	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-02	GA20-BH-HAW-02/2001/0.0-0.1	0-0.1	16/09/2020	Fill	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	6.9	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	16/09/2020	Natural	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7.1	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-02	GA20-BH-HAW-02/2004/1.4-1.5	1.4-1.5	16/09/2020	Natural	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	210	7.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-03	GA20-BH-HAW-03/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	190	7.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-03	GA20-BH-HAW-03/2002/0.4-0.5	0.4-0.5	21/09/2020	Natural	746503	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	320	7.7	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-04	GA20-BH-HAW-04/2001/0.0-0.1	0-0.1	1/09/2020	Fill	742806	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	6.6	<0.5	<0.5	<0.5	<20	<20	<50	76	76	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-04	GA20-BH-HAW-04/2002/0.4-0.5	0.4-0.5	1/09/2020	Fill	742806	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	6.7	<0.5	<0.5	<0.5	<20	<20	78	80	158	180	<20	<20	<50	<50	180	<100
GA20-BH-HAW-04	GA20-BH-HAW-04/2004/1.4-1.5	1.4-1.5	1/09/2020	Natural	742806	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-05	GA20-BH-HAW-05/2001/0.0-0.1	0-0.1	4/09/2020	Fill	743581	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-05	GA20-BH-HAW-05/2002/0.4-0.5	0.4-0.5	4/09/2020	Fill	743581	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-05	GA20-BH-HAW-05/2004/1.4-1.5	1.4-1.5	4/09/2020	Fill	743581	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	430	7.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-06	GA20-BH-HAW-06/2001/0.0-0.1	0-0.1	15/09/2020	Fill	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	190	8	<0.5	<0.5	<0.5	<20	<20	140	92	232	180	<20	<20	<50	<50	180	<100
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	15/09/2020	Natural	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	540	6.7	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-06	GA20-BH-HAW-06/2004/1.4-1.5	1.4-1.5	15/09/2020	Natural	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	480	8.2	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-07	GA20-BH-HAW-07/2001/0.0-0.1	0-0.1	31/08/2020	Fill	742806	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-07	GA20-BH-HAW-07/2002/0.4-0.5	0.4-0.5	31/08/2020	Natural	742806	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-07	GA20-BH-HAW-07/2004/1.4-1.5	1.4-1.5	31/08/2020	Natural	742806	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	260	7.4	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-08	GA20-BH-HAW-08/2001/0.0-0.1	0-0.1	8/09/2020	Fill	743581	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7.1	<0.5	<0.5	<0.5	<20	<20	<50	110	110	130	<20	<20	<50	<50	130	<100
GA20-BH-HAW-08	GA20-BH-HAW-08/2002/0.4-0.5	0.4-0.5	8/09/2020	Fill	743581	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	6.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-08	GA20-BH-HAW-08/2004/1.4-1.5	1.4-1.5	8/09/2020	Natural	743581	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	550	7.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-09	GA20-BH-HAW-09/2001/0.0-0.1	0-0.1	3/09/2020	Fill	742806	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	430	6.9	<0.5	<0.5	<0.5	<20	<20	<50	73	73	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-09	GA20-BH-HAW-09/2002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742806	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	150	8.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-09	GA20-BH-HAW-09/2004/1.4-1.5	1.4-1.5	3/09/2020	Natural	742806	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	480	8.2	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-10	GA20-BH-HAW-10/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	460	6.7	<0.5	<0.5	<0.5	<20	<20	72	130	202	160	<20	<20	<50	<50	160	<100
GA20-BH-HAW-10	GA20-BH-HAW-10/2003/0.9-1.0	0.9-1	21/09/2020	Fill	746503	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	150	8.2	<0.5	<0.5	<0.5	<20	<20	530	320	850	910	<20	<20	<50	<50	730	180
GA20-BH-HAW-10	GA20-BH-HAW-10/2004/1.4-1.5	1.4-1.5	22/09/2020	Fill	746503	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	190	7.5	<0.5	<0.5	<0.5	<20	<20	120	90	210	170	<20	<20	<50	<50	170	<100
GA20-BH-HAW-11	GA20-BH-HAW-11/2001/0.0-0.1	0-0.1	10/09/2020	Fill	743581	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	5.9	<0.5	<0.5	<0.5	<20	<20	120	150	270	230	<20	<20	<50	<50	230	<100
GA20-BH-HAW-11	GA20-BH-HAW-11/2002/0.4-0.5	0.4-0.5	10/09/2020	Fill	743581	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	170	6.7	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-11	GA20-BH-HAW-11/2004/1.4-1.5	1.4-1.5	10/09/2020	Fill	743581	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	360	6.1	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-11	GA20-BH-HAW-11/2005/2.6-2.7	2.6-2.7	10/09/2020	Natural	743581	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	220	8.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-12	GA20-BH-HAW-12/2001/0.0-0.1	0-0.1	11/09/2020	Fill	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	270	6.4	<0.5	<0.5	<0.5	<20	<20	<50	99	94	193	160	<20	<20	<50	<50	160	<100
GA20-BH-HAW-12	GA20-BH-HAW-12/2002/0.4-0.5	0.4-0.5	11/09/2020	Fill	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7.8	<0.5	<0.5	<0.5	<20	<20	130	100	230	200	<20	<20	<50	<50	200	<100
GA20-BH-HAW-12	GA20-BH-HAW-12/2004/1.4-1.5	1.4-1.5	11/09/2020	Fill	745405	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	190	7.8	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP01	HAW-TP01/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	290	11	<0.5	<0.5	<0.5	<20	<20	97	<50	97	130	<20	<20	<50	<50	130	<100
HAW-TP01	HAW-TP01/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353/749457	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	480	8.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP01	HAW-TP01/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP02	HAW-TP02/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	220	6.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP02	HAW-TP02/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	200	7.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP02	HAW-TP02/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	910	7.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP03	HAW-TP03/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	240	8.9	<0.5	<0.5	<0.5	<20	<20	500	62	562	570	<20	<20	<50	<50	570	<100
HAW-TP03	HAW-TP03/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	410	8.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP03	HAW-TP03/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	630	8.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP04	HAW-TP04/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP04	HAW-TP04/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	8	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP04	HAW-TP04/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	8.2	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP05	HAW-TP05/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	370	7.9	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP05	HAW-TP05/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	120	7.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP05	HAW-TP05/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	740	6.2	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP05	HAW-TP05/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP06	HAW-TP06/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	160	7.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP06	HAW-TP06/1002/0.3-0.4	0.3-0.4	3/09/2020	Natural	742353/749457	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	6.7	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP07	HAW-TP07/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP07	HAW-TP07/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7.1	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP07	HAW-TP07/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	7.7	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP08	HAW-TP08/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	110	7.2	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP08	HAW-TP08/1003/0.8-0.9	0.8-0.9	3/09/2020	Natural	742353/749457	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	230	8.4	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP08	HAW-TP08/1004/1.9-2.0	1.9-2	3/09/2020	Natural	742353	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<100	5.8	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP09	HAW-TP09/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353

						Volatile Organic Compounds																																							
						Total Chlorinated Hydrocarbons VIC EPA	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,2,3-Trichloropropane	1,2-Dibromoethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-dichloroethene	1,2-Dichloropropane	1,3-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-dichloropropene	Allyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Hexachlorobutadiene	Iodomethane	Total Other Chlorinated Hydrocarbons VIC EPA	Trichloroethene	Tetrachloroethene	Trichlorofluoromethane	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	mg/kg	mg/kg
EQL						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	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
Buildings & Structures																																													
CRCCARE 2011 HSLs Intrusive Maintenance Worker Direct Contact																																													
CRCCARE 2011 HSLs Residential (low-density) A Direct Contact																																													
NEPM 2013 EILs-Urban Residential and public open space																																													
NEPM 2013 ESL- Urban residential and public open space, Fine Soil																																													
NEPM 2013 HIL-Residential B Soil																																													
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																																													
0-1m																																													
1-2m																																													
PFAS NEMP 2.0 2020 Eco Indirect Eco Indirect All Land Uses																																													
PFAS NEMP 2.0 2020 HH Public Open Space																																													
PFAS NEMP 2.0 2020 HH Residential Minimal Soil Access																																													
Location	**Sample**	**Depth**	**Date Sampled**	**Fill/Natural**	**Lab Report No.**																																								
GA20-BH-HAW-01	GA20-BH-HAW-01/2001/0.0-0.1	0-0.1	17/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-01	GA20-BH-HAW-01/2002/0.4-0.5	0.4-0.5	17/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-01	GA20-BH-HAW-01/2004/1.4-1.5	1.4-1.5	17/09/2020	Natural	745405	<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	<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
GA20-BH-HAW-02	GA20-BH-HAW-02/2001/0.0-0.1	0-0.1	16/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	16/09/2020	Natural	745405	<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	<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
GA20-BH-HAW-02	GA20-BH-HAW-02/2004/1.4-1.5	1.4-1.5	16/09/2020	Natural	745405	<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	<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
GA20-BH-HAW-03	GA20-BH-HAW-03/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<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	<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
GA20-BH-HAW-03	GA20-BH-HAW-03/2002/0.4-0.5	0.4-0.5	21/09/2020	Natural	746503	<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	<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
GA20-BH-HAW-04	GA20-BH-HAW-04/2001/0.0-0.1	0-0.1	1/09/2020	Fill	742806	<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	<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
GA20-BH-HAW-04	GA20-BH-HAW-04/2002/0.4-0.5	0.4-0.5	1/09/2020	Fill	742806	<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	<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
GA20-BH-HAW-04	GA20-BH-HAW-04/2004/1.4-1.5	1.4-1.5	1/09/2020	Natural	742806	<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	<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
GA20-BH-HAW-05	GA20-BH-HAW-05/2001/0.0-0.1	0-0.1	4/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-05	GA20-BH-HAW-05/2002/0.4-0.5	0.4-0.5	4/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-05	GA20-BH-HAW-05/2004/1.4-1.5	1.4-1.5	4/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-06	GA20-BH-HAW-06/2001/0.0-0.1	0-0.1	15/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	15/09/2020	Natural	745405	<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	<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
GA20-BH-HAW-06	GA20-BH-HAW-06/2004/1.4-1.5	1.4-1.5	15/09/2020	Natural	745405	<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	<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
GA20-BH-HAW-07	GA20-BH-HAW-07/2001/0.0-0.1	0-0.1	31/08/2020	Fill	742806	<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	<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
GA20-BH-HAW-07	GA20-BH-HAW-07/2002/0.4-0.5	0.4-0.5	31/08/2020	Natural	742806	<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	<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
GA20-BH-HAW-07	GA20-BH-HAW-07/2004/1.4-1.5	1.4-1.5	31/08/2020	Natural	742806	<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	<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
GA20-BH-HAW-08	GA20-BH-HAW-08/2001/0.0-0.1	0-0.1	8/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-08	GA20-BH-HAW-08/2002/0.4-0.5	0.4-0.5	8/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-08	GA20-BH-HAW-08/2004/1.4-1.5	1.4-1.5	8/09/2020	Natural	743581	<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	<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
GA20-BH-HAW-09	GA20-BH-HAW-09/2001/0.0-0.1	0-0.1	3/09/2020	Fill	742806	<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	<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
GA20-BH-HAW-09	GA20-BH-HAW-09/2002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742806	<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	<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
GA20-BH-HAW-09	GA20-BH-HAW-09/2004/1.4-1.5	1.4-1.5	3/09/2020	Natural	742806	<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	<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
GA20-BH-HAW-10	GA20-BH-HAW-10/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<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	<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
GA20-BH-HAW-10	GA20-BH-HAW-10/2003/0.9-1.0	0.9-1	21/09/2020	Fill	746503	<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	<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
GA20-BH-HAW-10	GA20-BH-HAW-10/2004/1.4-1.5	1.4-1.5	22/09/2020	Fill	746503	<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	<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
GA20-BH-HAW-11	GA20-BH-HAW-11/2001/0.0-0.1	0-0.1	10/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-11	GA20-BH-HAW-11/2002/0.4-0.5	0.4-0.5	10/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-11	GA20-BH-HAW-11/2004/1.4-1.5	1.4-1.5	10/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-11	GA20-BH-HAW-11/2005/2.6-2.7	2.6-2.7	10/09/2020	Natural	743581	<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	<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
GA20-BH-HAW-12	GA20-BH-HAW-12/2001/0.0-0.1	0-0.1	11/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-12	GA20-BH-HAW-12/2002/0.4-0.5	0.4-0.5	11/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-12	GA20-BH-HAW-12/2004/1.4-1.5	1.4-1.5	11/09/2020	Fill	745405	<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	<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
HAW-TP01	HAW-TP01/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP01	HAW-TP01/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353/749457	<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	<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
HAW-TP01	HAW-TP01/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP02	HAW-TP02/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP02	HAW-TP02/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<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	<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
HAW-TP02	HAW-TP02/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353	<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	<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
HAW-TP03	HAW-TP03/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP03	HAW-TP03/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<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	<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
HAW-TP03	HAW-TP03/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	<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	<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
HAW-TP04	HAW-TP04/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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

					Heavy Metals					PAH
					Arsenic	Cadmium	Lead	Mercury	Zinc	Benzo(a)pyrene
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL					0.01	0.01	0.01	0.001	0.01	0.001
VIC EPA IWRG621 Cat B					2.8	0.8	4	0.4	1200	0.004
VIC EPA IWRG621 Cat C					0.7	0.2	1	0.1	300	0.001
Location	**Sample**	**Depth**	**Fill/Natural**	**Date Sampled**						
HAW-TP02	HAW-TP02/1003/0.7-0.8	0.7-0.8	Natural	03/09/2020	<0.01	-	0.01	-	-	-
HAW-TP03	HAW-TP03/1002/0.4-0.5	0.4-0.5	Fill	03/09/2020	<0.01	-	0.01	-	-	-
HAW-TP08	HAW-TP08/1001/0.0-0.1	0-0.1	Fill	03/09/2020	<0.01	<0.01	0.08	<0.001	1	<0.001
HAW-TP09	HAW-TP09/1003/0.5-0.6	0.5-0.6	Fill	03/09/2020	-	-	<0.01	-	-	<0.001
HAW-TP10A	HAW-TP10A/1001/0.0-0.1	0-0.1	Fill	03/09/2020	0.01	-	0.04	-	-	<0.001

Location	Sample	Depth	Date Sampled	Fill/Natural	Lab Report No.	Asbestos	Per- and polyfluoroalkyl substances (PFAS)																																				
						Asbestos (1 = present, 0 = absent)	Perfluorononanesulfonic acid (PFNS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)	Sum of WA DER PFAS (n=10)	Sum of PFASs (n=28)	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTSA)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)
						-	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
EQL							0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.01	0.05	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005
VIC EPA IWRG621 Cat B																																											
VIC EPA IWRG621 Cat C																																											
VIC EPA IWRG621 Fill Material																																											
Fill																																											
GA20-BH-HAW-01	GA20-BH-HAW-01/2001/0.0-0.1	0-0.1	17/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-01	GA20-BH-HAW-01/2002/0.4-0.5	0.4-0.5	17/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-02	GA20-BH-HAW-02/2001/0.0-0.1	0-0.1	16/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-03	GA20-BH-HAW-03/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-04	GA20-BH-HAW-04/2001/0.0-0.1	0-0.1	1/09/2020	Fill	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-04	GA20-BH-HAW-04/2002/0.4-0.5	0.4-0.5	1/09/2020	Fill	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-05	GA20-BH-HAW-05/2001/0.0-0.1	0-0.1	4/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-05	GA20-BH-HAW-05/2002/0.4-0.5	0.4-0.5	4/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-05	GA20-BH-HAW-05/2004/1.4-1.5	1.4-1.5	4/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-06	GA20-BH-HAW-06/2001/0.0-0.1	0-0.1	15/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-07	GA20-BH-HAW-07/2001/0.0-0.1	0-0.1	31/08/2020	Fill	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-08	GA20-BH-HAW-08/2001/0.0-0.1	0-0.1	8/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-08	GA20-BH-HAW-08/2002/0.4-0.5	0.4-0.5	8/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-09	GA20-BH-HAW-09/2001/0.0-0.1	0-0.1	3/09/2020	Fill	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-09	GA20-BH-HAW-09/2002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-10	GA20-BH-HAW-10/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-10	GA20-BH-HAW-10/2003/0.9-1.0	0.9-1	21/09/2020	Fill	746503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-10	GA20-BH-HAW-10/2004/1.4-1.5	1.4-1.5	22/09/2020	Fill	746503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-11	GA20-BH-HAW-11/2001/0.0-0.1	0-0.1	10/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-11	GA20-BH-HAW-11/2002/0.4-0.5	0.4-0.5	10/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-11	GA20-BH-HAW-11/2004/1.4-1.5	1.4-1.5	10/09/2020	Fill	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-12	GA20-BH-HAW-12/2001/0.0-0.1	0-0.1	11/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-12	GA20-BH-HAW-12/2002/0.4-0.5	0.4-0.5	11/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-12	GA20-BH-HAW-12/2004/1.4-1.5	1.4-1.5	11/09/2020	Fill	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP01	HAW-TP01/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP02	HAW-TP02/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP02	HAW-TP02/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP03	HAW-TP03/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP03	HAW-TP03/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP04	HAW-TP04/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP04	HAW-TP04/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP05	HAW-TP05/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP05	HAW-TP05/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP06	HAW-TP06/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP07	HAW-TP07/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP07	HAW-TP07/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP08	HAW-TP08/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP09	HAW-TP09/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP09	HAW-TP09/1003/0.5-0.6	0.5-0.6	3/09/2020	Fill	742353/749457	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP10	HAW-TP10/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP10A	HAW-TP10A/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ACM Fragments																																											
HAW-TP01	HAW-TP01/PACM/0.1	-0.1	3/09/2020	Fragment	742353	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP05	HAW-TP05/PACM/0.1	-0.1	3/09/2020	Fragment	742353	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natural Soils																																											
GA20-BH-HAW-01	GA20-BH-HAW-01/2004/1.4-1.5	1.4-1.5	17/09/2020	Natural	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	16/09/2020	Natural	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-02	GA20-BH-HAW-02/2004/1.4-1.5	1.4-1.5	16/09/2020	Natural	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-03	GA20-BH-HAW-03/2002/0.4-0.5	0.4-0.5	21/09/2020	Natural	746503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-04	GA20-BH-HAW-04/2004/1.4-1.5	1.4-1.5	1/09/2020	Natural	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-06	GA20-BH-HAW-06/2002/0.4-0.5	0.4-0.5	15/09/2020	Natural	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-06	GA20-BH-HAW-06/2004/1.4-1.5	1.4-1.5	15/09/2020	Natural	745405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-07	GA20-BH-HAW-07/2002/0.4-0.5	0.4-0.5	31/08/2020	Natural	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-07	GA20-BH-HAW-07/2004/1.4-1.5	1.4-1.5	31/08/2020	Natural	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-08	GA20-BH-HAW-08/2004/1.4-1.5	1.4-1.5	8/09/2020	Natural	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-09	GA20-BH-HAW-09/2004/1.4-1.5	1.4-1.5	3/09/2020	Natural	742806	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GA20-BH-HAW-11	GA20-BH-HAW-11/2005/2.6-2.7	2.6-2.7	10/09/2020	Natural	743581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP01	HAW-TP01/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353/749457	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP02	HAW-TP02/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP03	HAW-TP03/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP04	HAW-TP04/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP05	HAW-TP05/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP06	HAW-TP06/1002/0.3-0.4	0.3-0.4	3/09/2020	Natural	742353/749457	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP07	HAW-TP07/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP08	HAW-TP08/1003/0.8-0.9	0.8-0.9	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP08	HAW-TP08/1004/1.9-2.0	1.9-2	3/09/2020	Natural	742353/749457	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP10	HAW-TP10/1002/0.4-0.5	0.4-0.5	3/09/2020	Natural	742353/749457	-	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005
HAW-TP10A	HAW-TP10A/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

						Halogenated Benzenes								Heavy Metals												Herbicides	MAH										
						1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	4-Chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Arsenic	Cadmium	Chromium	Chromium (hexavalent)	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Zinc	Dinoseb	1,2,4-trimethylbenzene	1,3,5-Trimethylbenzene	Benzene	Toluene	Isopropylbenzene	Styrene	Ethylbenzene	Xylenes (m & p)	Xylene (o)	Xylenes (Sum of total)	Total MAHs
						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
EQL						0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	2	0.4	5	1	5	5	0.1	5	5	2	0.2	10	5	20	0.5	0.5	0.1	0.1	0.5	0.5	0.1	0.2	0.1	0.3	0.5
VIC EPA IWRG621 Cat B														2000	400		2000	20000	6000	300	4000	12000	200	720		140000				16								240
VIC EPA IWRG621 Cat C														500	100		500	5000	1500	75	1000	3000	50	180	500	35000				4								70
VIC EPA IWRG621 Fill Material														20	3		1	100	300	1	40	60	10	10	50	200				1								7
Location	**Sample**	**Depth**	**Date Sampled**	**Fill/Natural**	**Lab Report No.**																																
Fill																																					
GA20-BH-HAW-01	GA20-BH-HAW-01/2001/0.0-0.1	0-0.1	17/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	6.9	<0.4	31	<1	7.3	18	<0.1	<5	8.3	<2	<2	<10	21	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-01	GA20-BH-HAW-01/2002/0.4-0.5	0.4-0.5	17/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	11	<0.4	44	<1	11	11	<0.1	<5	9	<2	<2	<10	15	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-02	GA20-BH-HAW-02/2001/0.0-0.1	0-0.1	16/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	6.5	<1	<5	16	<0.1	<5	<5	<2	<2	<10	27	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-03	GA20-BH-HAW-03/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	9.3	<0.4	26	<1	22	47	<0.1	<5	20	<2	<2	<10	280	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-04	GA20-BH-HAW-04/2001/0.0-0.1	0-0.1	1/09/2020	Fill	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.3	<0.4	15	<1	16	74	<0.1	<5	11	<2	<0.2	<10	140	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-04	GA20-BH-HAW-04/2002/0.4-0.5	0.4-0.5	1/09/2020	Fill	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3.8	<0.4	12	<1	11	240	<0.1	<5	7	<2	<0.2	<10	63	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-05	GA20-BH-HAW-05/2001/0.0-0.1	0-0.1	4/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3	<0.4	12	<1	7.4	29	<0.1	<5	6.5	<2	<0.2	<10	49	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-05	GA20-BH-HAW-05/2002/0.4-0.5	0.4-0.5	4/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	2.2	<0.4	6.1	<1	<5	9	<0.1	<5	<5	<2	<0.2	<10	9.3	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-05	GA20-BH-HAW-05/2004/1.4-1.5	1.4-1.5	4/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7.5	<0.4	30	<1	5.9	13	<0.1	<5	12	<2	<0.2	<10	9.8	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-06	GA20-BH-HAW-06/2001/0.0-0.1	0-0.1	15/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	13	<0.4	19	<1	21	40	<0.1	<5	18	<2	<2	<10	78	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-07	GA20-BH-HAW-07/2001/0.0-0.1	0-0.1	31/08/2020	Fill	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	10	<0.4	9.4	<1	5.7	38	<0.1	<5	<5	<2	<0.2	<10	39	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-08	GA20-BH-HAW-08/2001/0.0-0.1	0-0.1	8/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7.8	<0.4	18	<1	14	39	<0.1	<5	7.2	<2	<0.2	<10	90	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-08	GA20-BH-HAW-08/2002/0.4-0.5	0.4-0.5	8/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.3	<0.4	12	<1	<5	7.3	<0.1	<5	<5	<2	<0.2	<10	6.1	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-09	GA20-BH-HAW-09/2001/0.0-0.1	0-0.1	3/09/2020	Fill	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	5.4	<0.4	17	<1	25	34	<0.1	<5	12	<2	<0.2	27	270	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-09	GA20-BH-HAW-09/2002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	9.1	<0.4	26	<1	13	21	<0.1	<5	12	<2	0.3	<10	78	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-10	GA20-BH-HAW-10/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	<5	<1	11	100	<0.1	<5	<5	<2	<2	<10	49	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-10	GA20-BH-HAW-10/2003/0.9-1.0	0.9-1	21/09/2020	Fill	746503	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	18	<0.4	32	<1	16	43	<0.1	<5	16	<2	<2	<10	110	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-10	GA20-BH-HAW-10/2004/1.4-1.5	1.4-1.5	22/09/2020	Fill	746503	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.1	<0.4	28	<1	8	71	<0.1	<5	14	<2	<2	<10	47	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-11	GA20-BH-HAW-11/2001/0.0-0.1	0-0.1	10/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.5	<0.4	12	<1	16	48	<0.1	<5	8	<2	<0.2	<10	53	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-11	GA20-BH-HAW-11/2002/0.4-0.5	0.4-0.5	10/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	11	<0.4	20	<1	13	87	<0.1	<5	9.6	<2	<0.2	<10	39	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-11	GA20-BH-HAW-11/2004/1.4-1.5	1.4-1.5	10/09/2020	Fill	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7.9	<0.4	32	<1	16	18	<0.1	<5	35	<2	<0.2	<10	22	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-12	GA20-BH-HAW-12/2001/0.0-0.1	0-0.1	11/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	32	<0.4	41	<1	75	1400	0.3	<5	38	<2	<2	390	530	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-12	GA20-BH-HAW-12/2002/0.4-0.5	0.4-0.5	11/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	45	<0.4	83	<1	22,000	960	1.7	9.3	72	<2	4.8	730	1900	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-12	GA20-BH-HAW-12/2004/1.4-1.5	1.4-1.5	11/09/2020	Fill	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	25	<0.4	51	<1	39	160	0.5	<5	27	<2	<2	150	170	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP01	HAW-TP01/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3.3	<0.4	11	<1	18	31	0.2	<5	11	<2	<0.2	<10	300	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP02	HAW-TP02/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	5.6	<0.4	16	<1	18	62	0.1	<5	8.9	<2	<0.2	<10	86	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP02	HAW-TP02/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	6.1	<0.4	16	<1	18	58	0.2	<5	9.1	<2	<0.2	<10	120	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP03	HAW-TP03/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	8.9	<0.4	21	<1	17	30	<0.1	<5	29	<2	0.2	<10	120	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP03	HAW-TP03/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	14	<0.4	36	<1	14	26	<0.1	<5	19	<2	<0.2	<10	100	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP04	HAW-TP04/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.5	<0.4	17	<1	5.7	21	<0.1	<5	6.8	<2	<0.2	<10	31	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP04	HAW-TP04/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	<5	<1	<5	14	<0.1	<5	<5	<2	<0.2	<10	41	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP05	HAW-TP05/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	8.2	<0.4	22	<1	13	34	<0.1	<5	11	<2	<0.2	<10	91	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP05	HAW-TP05/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7.5	<0.4	15	<1	9.1	23	<0.1	<5	6.3	<2	<0.2	<10	53	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP06	HAW-TP06/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3.7	<0.4	11	<1	15	62	<0.1	<5	5.8	<2	<0.2	<10	94	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP07	HAW-TP07/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3.3	<0.4	8.4	<1	9.4	21	<0.1	<5	<5	<2	<0.2	<10	62	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP07	HAW-TP07/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	4.9	<0.4	10	<1	9.9	35	<0.1	<5	<5	<2	<0.2	<10	48	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP08	HAW-TP08/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	31	9.5	21	<1	84	240	5.1	<5	34	<2	<0.2	320	14,000	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP09	HAW-TP09/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	13	<0.4	16	<1	27	50	<0.1	<5	25	<2	<0.2	47	73	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP09	HAW-TP09/1003/0.5-0.6	0.5-0.6	3/09/2020	Fill	742353/749457	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	8.1	<0.4	34	<1	14	39	<0.1	<5	29	<2	<0.2	<10	41	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP10	HAW-TP10/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	11	<0.4	22	<1	67	130	0.2	<5	14	<2	<0.2	41	300	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP10A	HAW-TP10A/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	27	<0.4	25	<1	70	190	0.3	<5	30	<2	0.3	290	530	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
ACM Fragments																																					
HAW-TP01	HAW-TP01/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP05	HAW-TP05/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natural Soils																																					
GA20-BH-HAW-01	GA20-BH-HAW-01/2004/1.4-1.5	1.4-1.5	17/09/2020	Natural	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	9.9	<0.4	53	<1	13	12	<0.1	<5	9.7	<2	<2	<10	16	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	16/09/2020	Natural	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	6.4	<1	<5	<5	<0.1	<5	<5	<2	<2	<10	<5	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-02	GA20-BH-HAW-02/2004/1.4-1.5	1.4-1.5	16/09/2020	Natural	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	8.1	<0.4	31	<1	9.7	14	<0.1	<5	11	<2	<2	<10	14	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-03	GA20-BH-HAW-03/2002/0.4-0.5	0.4-0.5	21/09/2020	Natural	746503	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	11	<0.4	52	<1	11	16	<0.1	<5	21	<2	<2	<10	23	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-04	GA20-BH-HAW-04/2004/1.4-1.5	1.4-1.5	1/09/2020	Natural	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	3.5	<0.4	20	<1	<5	8.9	<0.1	<5	<5	<2	<0.2	<10	8	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-06	GA20-BH-HAW-06/2002/0.4-0.5	0.4-0.5	15/09/2020	Natural	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	12	<0.4	48	<1	9.1	20	<0.1	<5	26	<2	<2	<10	18	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-06	GA20-BH-HAW-06/2004/1.4-1.5	1.4-1.5	15/09/2020	Natural	745405	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	14	<0.4	34	<1	18	25	<0.1	<5	27	<2	<2	<10	26	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-07	GA20-BH-HAW-07/2002/0.4-0.5	0.4-0.5	31/08/2020	Natural	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	6.9	<0.4	13	<1	<5	15	<0.1	<5	<5	<2	<0.2	<10	11	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-07	GA20-BH-HAW-07/2004/1.4-1.5	1.4-1.5	31/08/2020	Natural	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	5	<0.4	31	<1	9.1	14	<0.1	<5	11	<2	<0.2	<10	13	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-08	GA20-BH-HAW-08/2004/1.4-1.5	1.4-1.5	8/09/2020	Natural	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	5.3	<0.4	29	<1	7.4	12	<0.1	<5	14	<2	<0.2	<10	12	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-09	GA20-BH-HAW-09/2004/1.4-1.5	1.4-1.5	3/09/2020	Natural	742806	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	8	<0.4	33	<1	8.5	16	<0.1	<5	13	<2	<0.2	<10	27	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
GA20-BH-HAW-11	GA20-BH-HAW-11/2005/2.6-2.7	2.6-2.7	10/09/2020	Natural	743581	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	7	<0.4	41	<1	25	57	<0.1	<5	91	<2	<0.2	<10	130	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP01	HAW-TP01/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353/749457	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	10	<0.4	32	<1	10	20	<0.1	<5	9.5	<2	<0.2	<10	20	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP02	HAW-TP02/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	17	<0.4	61	<1	14	22	<0.1	<5	24	2.7	<0.2	<10	19	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP03	HAW-TP03/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	14	<0.4	42	<1	14	19	<0.1	<5	23	<2	<0.2	<10	31	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP04	HAW-TP04/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	7	<1	<5	<5	<0.1	<5	<5	<2	<0.2	<10	<5	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP05	HAW-TP05/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742353	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	9.7	<0.4	50	<1	12	14	<0.1	<5	20	<2	<0.2	<10	15	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP06	HAW-TP06/1002/0.3-0.4	0.3-0.4	3/09/2020	Natural	742353/749457	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<2	<0.4	5.1	<1	<5	<5	<0.1	<5	<5	<2	<0.2	<10	<5	<20	<0.5	<0.5	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.1	<0.3	<0.5
HAW-TP07	HAW-TP07/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742

| | | | | | | Organochlorine Pesticides | | | | | |

						Phenolics										Phenolics-Halogenated									PCB	Other			Solvents			Total Petroleum Hydrocarbons											
						2,4-Dimethylphenol	2,4-Dinitrophenol	2-Methylphenol	2-Nitrophenol	3- & 4- Methylphenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexylphenol	4-Nitrophenol	Phenol	Non-Halogenated Phenols (Sum of total)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2-Chlorophenol	4-Chloro-3-methylphenol	Pentachlorophenol	Tetrachlorophenols (Sum of total)	Halogenated Phenols (Sum of total)	PCB (Sum of total)	Cyanide (total)	Fluoride	pH (aqueous extract)	Methyl Ethyl Ketone	Methyl iso-butyl ketone	Acetone	TRH C6 - C9 Fraction	TRH C10 - C14 Fraction	TRH C15 - C28 Fraction	TRH C29 - C36 Fraction	TRH>C10 - C36 (Sum of total)	TRH>C10 - C40 (Sum of total)	TRH C6 - C10 Fraction F1	TRH C6 - C10 Fraction Less BTEX F1	TRH >C10 - C16 Fraction F2	TRH >C10 - C16 Fraction Less Naphthalene F2	TRH >C16 - C34 Fraction F3	TRH >C34 - C40 Fraction F4
						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	pH_Units	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
EQL						0.5	5	0.2	1	0.4	5	20	5	0.5	20	1	1	0.5	0.5	0.5	1	1	10	1	0.1	5	100	0.1	0.5	0.5	0.5	20	20	50	50	50	100	20	20	50	50	100	100
VIC EPA IWRG621 Cat B															2200									320	0	10000	40000									2600				40000						
VIC EPA IWRG621 Cat C															560									10	0	2500	10000									650				10000						
VIC EPA IWRG621 Fill Material															60									1	2	50	450	4-9				100				1000									
Location	**Sample**	**Depth**	**Date Sampled**	**Fill/Natural**	**Lab Report No.**																																						
Fill																																											
GA20-BH-HAW-01	GA20-BH-HAW-01/2001/0.0-0.1	0-0.1	17/09/2020	Fill	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	210	6.8	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-01	GA20-BH-HAW-01/2002/0.4-0.5	0.4-0.5	17/09/2020	Fill	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	290	6.1	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-02	GA20-BH-HAW-02/2001/0.0-0.1	0-0.1	16/09/2020	Fill	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	6.9	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-03	GA20-BH-HAW-03/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	190	7.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-04	GA20-BH-HAW-04/2001/0.0-0.1	0-0.1	1/09/2020	Fill	742806	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	6.6	<0.5	<0.5	<0.5	<20	<20	<50	76	76	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-04	GA20-BH-HAW-04/2002/0.4-0.5	0.4-0.5	1/09/2020	Fill	742806	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	6.7	<0.5	<0.5	<0.5	<20	<20	78	80	158	180	<20	<20	<50	<50	180	<100
GA20-BH-HAW-05	GA20-BH-HAW-05/2001/0.0-0.1	0-0.1	4/09/2020	Fill	743581	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	7.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-05	GA20-BH-HAW-05/2002/0.4-0.5	0.4-0.5	4/09/2020	Fill	743581	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-05	GA20-BH-HAW-05/2004/1.4-1.5	1.4-1.5	4/09/2020	Fill	743581	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	430	7.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-06	GA20-BH-HAW-06/2001/0.0-0.1	0-0.1	15/09/2020	Fill	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	190	8	<0.5	<0.5	<0.5	<20	<20	140	92	232	180	<20	<20	<50	<50	180	<100
GA20-BH-HAW-07	GA20-BH-HAW-07/2001/0.0-0.1	0-0.1	31/08/2020	Fill	742806	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	7.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-08	GA20-BH-HAW-08/2001/0.0-0.1	0-0.1	8/09/2020	Fill	743581	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	7.1	<0.5	<0.5	<0.5	<20	<20	<50	110	110	130	<20	<20	<50	<50	130	<100
GA20-BH-HAW-08	GA20-BH-HAW-08/2002/0.4-0.5	0.4-0.5	8/09/2020	Fill	743581	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	6.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-09	GA20-BH-HAW-09/2001/0.0-0.1	0-0.1	3/09/2020	Fill	742806	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	430	6.9	<0.5	<0.5	<0.5	<20	<20	<50	73	73	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-09	GA20-BH-HAW-09/2002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742806	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	150	8.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-10	GA20-BH-HAW-10/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	460	6.7	<0.5	<0.5	<0.5	<20	<20	72	130	202	160	<20	<20	<50	<50	160	<100
GA20-BH-HAW-10	GA20-BH-HAW-10/2003/0.9-1.0	0.9-1	21/09/2020	Fill	746503	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	150	8.2	<0.5	<0.5	<0.5	<20	<20	530	320	850	910	<20	<20	<50	<50	730	180
GA20-BH-HAW-10	GA20-BH-HAW-10/2004/1.4-1.5	1.4-1.5	22/09/2020	Fill	746503	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	190	7.5	<0.5	<0.5	<0.5	<20	<20	120	90	210	170	<20	<20	<50	<50	170	<100
GA20-BH-HAW-11	GA20-BH-HAW-11/2001/0.0-0.1	0-0.1	10/09/2020	Fill	743581	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	5.9	<0.5	<0.5	<0.5	<20	<20	120	150	270	230	<20	<20	<50	<50	230	<100
GA20-BH-HAW-11	GA20-BH-HAW-11/2002/0.4-0.5	0.4-0.5	10/09/2020	Fill	743581	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	170	6.7	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-11	GA20-BH-HAW-11/2004/1.4-1.5	1.4-1.5	10/09/2020	Fill	743581	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	360	6.1	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-12	GA20-BH-HAW-12/2001/0.0-0.1	0-0.1	11/09/2020	Fill	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	270	6.4	<0.5	<0.5	<0.5	<20	<20	99	94	193	160	<20	<20	<50	<50	160	<100
GA20-BH-HAW-12	GA20-BH-HAW-12/2002/0.4-0.5	0.4-0.5	11/09/2020	Fill	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	7.8	<0.5	<0.5	<0.5	<20	<20	130	100	230	200	<20	<20	<50	<50	200	<100
GA20-BH-HAW-12	GA20-BH-HAW-12/2004/1.4-1.5	1.4-1.5	11/09/2020	Fill	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	190	7.8	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP01	HAW-TP01/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	290	11	<0.5	<0.5	<0.5	<20	<20	97	<50	97	130	<20	<20	<50	<50	130	<100
HAW-TP02	HAW-TP02/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	220	6.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP02	HAW-TP02/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	200	7.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP03	HAW-TP03/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	240	8.9	<0.5	<0.5	<0.5	<20	<20	500	62	562	570	<20	<20	<50	<50	570	<100
HAW-TP03	HAW-TP03/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	410	8.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP04	HAW-TP04/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	7.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP04	HAW-TP04/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	8	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP05	HAW-TP05/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	370	7.9	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP05	HAW-TP05/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	120	7.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP06	HAW-TP06/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	160	7.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP07	HAW-TP07/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	7.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP07	HAW-TP07/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	7.1	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP08	HAW-TP08/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	110	7.2	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP09	HAW-TP09/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	110	6.7	<0.5	<0.5	<0.5	<20	<20	110	130	240	300	<20	<20	<50	<50	300	<100
HAW-TP09	HAW-TP09/1003/0.5-0.6	0.5-0.6	3/09/2020	Fill	742353/749457	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	320	7.3	<0.5	<0.5	<0.5	<20	<20	120	97	217	260	<20	<20	<50	<50	260	<100
HAW-TP10	HAW-TP10/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	120	7.1	<0.5	<0.5	<0.5	<20	<20	52	84	136	160	<20	<20	<50	<50	160	<100
HAW-TP10A	HAW-TP10A/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	150	8.1	<0.5	<0.5	<0.5	<20	<20	70	59	129	150	<20	<20	<50	<50	150	<100
ACM Fragments																																											
HAW-TP01	HAW-TP01/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP05	HAW-TP05/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natural Soils																																											
GA20-BH-HAW-01	GA20-BH-HAW-01/2004/1.4-1.5	1.4-1.5	17/09/2020	Natural	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	280	6.4	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	16/09/2020	Natural	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	7.1	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-02	GA20-BH-HAW-02/2004/1.4-1.5	1.4-1.5	16/09/2020	Natural	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	210	7.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-03	GA20-BH-HAW-03/2002/0.4-0.5	0.4-0.5	21/09/2020	Natural	746503	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	320	7.7	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-04	GA20-BH-HAW-04/2004/1.4-1.5	1.4-1.5	1/09/2020	Natural	742806	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	7	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-06	GA20-BH-HAW-06/2002/0.4-0.5	0.4-0.5	15/09/2020	Natural	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	540	6.7	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-06	GA20-BH-HAW-06/2004/1.4-1.5	1.4-1.5	15/09/2020	Natural	745405	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	480	8.2	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-07	GA20-BH-HAW-07/2002/0.4-0.5	0.4-0.5	31/08/2020	Natural	742806	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	7.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-07	GA20-BH-HAW-07/2004/1.4-1.5	1.4-1.5	31/08/2020	Natural	742806	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	260	7.4	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-08	GA20-BH-HAW-08/2004/1.4-1.5	1.4-1.5	8/09/2020	Natural	743581	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	550	7.5	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-09	GA20-BH-HAW-09/2004/1.4-1.5	1.4-1.5	3/09/2020	Natural	742806	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	480	8.2	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
GA20-BH-HAW-11	GA20-BH-HAW-11/2005/2.6-2.7	2.6-2.7	10/09/2020	Natural	743581	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	220	8.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP01	HAW-TP01/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353/749457	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	480	8.3	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP02	HAW-TP02/1003/0.7-0.8	0.7-0.8	3/09/2020	Natural	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	910	7.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP03	HAW-TP03/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	630	8.6	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP04	HAW-TP04/1003/0.9-1.0	0.9-1	3/09/2020	Natural	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	<100	8.2	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP05	HAW-TP05/1003/0.6-0.7	0.6-0.7	3/09/2020	Natural	742353	<0.5	<5	<0.2	<1	<0.4	<5	<20	<5	<0.5	<20	<1	<1	<0.5	<0.5	<0.5	<1	<1	<10	<1	<0.1	<5	740	6.2	<0.5	<0.5	<0.5	<20	<20	<50	<50	<50	<100	<20	<20	<50	<50	<100	<100
HAW-TP06	HAW-TP06/1002/0.3-0.4	0.3-0.4	3/09/2020

						Volatile Organic Compounds																																					
						Total Chlorinated Hydrocarbons VIC EPA	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,2,3-Trichloropropane	1,2-Dibromoethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-dichloroethene	1,2-Dichloropropane	1,3-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-dichloropropene	Allyl chloride	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Hexachlorobutadiene	Iodomethane	Total Other Chlorinated Hydrocarbons VIC EPA	Trichloroethene	Tetrachloroethene	Trichlorofluoromethane	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
EQL						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	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
VIC EPA IWRG621 Cat B																																				11		50					4.8
VIC EPA IWRG621 Cat C																																				2.8		10					1.2
VIC EPA IWRG621 Fill Material						1																																					
Location	**Sample**	**Depth**	**Date Sampled**	**Fill/Natural**	**Lab Report No.**																																						
Fill																																											
GA20-BH-HAW-01	GA20-BH-HAW-01/2001/0.0-0.1	0-0.1	17/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-01	GA20-BH-HAW-01/2002/0.4-0.5	0.4-0.5	17/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-02	GA20-BH-HAW-02/2001/0.0-0.1	0-0.1	16/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-03	GA20-BH-HAW-03/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<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	<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
GA20-BH-HAW-04	GA20-BH-HAW-04/2001/0.0-0.1	0-0.1	1/09/2020	Fill	742806	<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	<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
GA20-BH-HAW-04	GA20-BH-HAW-04/2002/0.4-0.5	0.4-0.5	1/09/2020	Fill	742806	<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	<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
GA20-BH-HAW-05	GA20-BH-HAW-05/2001/0.0-0.1	0-0.1	4/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-05	GA20-BH-HAW-05/2002/0.4-0.5	0.4-0.5	4/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-05	GA20-BH-HAW-05/2004/1.4-1.5	1.4-1.5	4/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-06	GA20-BH-HAW-06/2001/0.0-0.1	0-0.1	15/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-07	GA20-BH-HAW-07/2001/0.0-0.1	0-0.1	31/08/2020	Fill	742806	<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	<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
GA20-BH-HAW-08	GA20-BH-HAW-08/2001/0.0-0.1	0-0.1	8/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-08	GA20-BH-HAW-08/2002/0.4-0.5	0.4-0.5	8/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-09	GA20-BH-HAW-09/2001/0.0-0.1	0-0.1	3/09/2020	Fill	742806	<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	<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
GA20-BH-HAW-09	GA20-BH-HAW-09/2002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742806	<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	<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
GA20-BH-HAW-10	GA20-BH-HAW-10/2001/0.0-0.1	0-0.1	21/09/2020	Fill	746503	<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	<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
GA20-BH-HAW-10	GA20-BH-HAW-10/2003/0.9-1.0	0.9-1	21/09/2020	Fill	746503	<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	<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
GA20-BH-HAW-10	GA20-BH-HAW-10/2004/1.4-1.5	1.4-1.5	22/09/2020	Fill	746503	<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	<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
GA20-BH-HAW-11	GA20-BH-HAW-11/2001/0.0-0.1	0-0.1	10/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-11	GA20-BH-HAW-11/2002/0.4-0.5	0.4-0.5	10/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-11	GA20-BH-HAW-11/2004/1.4-1.5	1.4-1.5	10/09/2020	Fill	743581	<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	<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
GA20-BH-HAW-12	GA20-BH-HAW-12/2001/0.0-0.1	0-0.1	11/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-12	GA20-BH-HAW-12/2002/0.4-0.5	0.4-0.5	11/09/2020	Fill	745405	<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	<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
GA20-BH-HAW-12	GA20-BH-HAW-12/2004/1.4-1.5	1.4-1.5	11/09/2020	Fill	745405	<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	<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
HAW-TP01	HAW-TP01/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP02	HAW-TP02/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP02	HAW-TP02/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<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	<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
HAW-TP03	HAW-TP03/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP03	HAW-TP03/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<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	<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
HAW-TP04	HAW-TP04/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP04	HAW-TP04/1002/0.4-0.5	0.4-0.5	3/09/2020	Fill	742353	<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	<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
HAW-TP05	HAW-TP05/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP05	HAW-TP05/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<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	<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
HAW-TP06	HAW-TP06/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP07	HAW-TP07/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP07	HAW-TP07/1002/0.3-0.4	0.3-0.4	3/09/2020	Fill	742353	<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	<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
HAW-TP08	HAW-TP08/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP09	HAW-TP09/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP09	HAW-TP09/1003/0.5-0.6	0.5-0.6	3/09/2020	Fill	742353/749457	<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	<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
HAW-TP10	HAW-TP10/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
HAW-TP10A	HAW-TP10A/1001/0.0-0.1	0-0.1	3/09/2020	Fill	742353	<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	<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
ACM Fragments																																											
HAW-TP01	HAW-TP01/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAW-TP05	HAW-TP05/PACM/0.1	-0.1	3/09/2020	Fragment	742353	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natural Soils																																											
GA20-BH-HAW-01	GA20-BH-HAW-01/2004/1.4-1.5	1.4-1.5	17/09/2020	Natural	745405	<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	<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
GA20-BH-HAW-02	GA20-BH-HAW-02/2002/0.4-0.5	0.4-0.5	16/09/2020	Natural	745405	<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	<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
GA20-BH-HAW-02	GA20-BH-HAW-02/2004/1.4-1.5	1.4-1.5	16/09/2020	Natural	745405	<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	<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
GA20-BH-HAW-03	GA20-BH-HAW-03/2002/0.4-0.5	0.4-0.5	21/09/2020	Natural	746503	<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	<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
GA20-BH-HAW-04	GA20-BH-HAW-04/2004/1.4-1.5	1.4-1.5	1/09/2020	Natural	742806	<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	<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
GA20-BH-HAW-06	GA20-BH-HAW-06/2002/0.4-0.5	0.4-0.5	15/09/2020	Natural	745405	<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	<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
GA20-BH-HAW-06	GA20-BH-HAW-06/2004/1.4-1.5	1.4-1.5	15/09/2020	Natural	745405	<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	<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
GA20-BH-HAW-07	GA20-BH-HAW-07/2002/0.4-0.5	0.4-0.5	31/08/2020	Natural	742806	<0.5	<0.5	<0.5	<0.5	<0.5

				Amino Aliphatics		Amino Aromatics			Anilines		E-Nitrobenzenes		Explosives		Halogenated Benzenes																Heavy Metals								Herbicides	
				N-Nitrosodi-n-butylamine	N-Nitrosodi-n-propylamine	1-Naphthylamine	2-Naphthylamine	Diphenylamine	2-Nitroaniline	Aniline	Nitrobenzene	Pentachloronitrobenzene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	1,2,3,4-Tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,3-Trichlorobenzene	1,2,4,5-Tetrachlorobenzene	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3,5-Trichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	4-Chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Pentachlorobenzene	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (Filtered)	Copper (Filtered)	Lead (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)	Pronamide	Trifluralin
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL				0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.05	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.001	0.0002	0.001	0.001	0.001	0.0001	0.001	0.005	0.005	0.005
ADWG 2018 Aesthetic																				0.001		0.02	0.0003			0.01						1				3			
ADWG 2018 Health												0.03								1.5			0.04			0.3			0.01	0.002		2	0.01	0.001	0.02		0.07	0.09
ANZECC 2000 GW Long-Term Irrigation Water Protection																													0.1	0.01		0.2	2	0.002	0.2	2		
ANZECC 2000 Livestock Drinking Water																													0.5	0.01	1	0.4|1|5	0.1	0.002	1	20		
ANZG (2018) Freshwater 95%										0.25	0.55		0.065				0.01		0.17	0.16		0.26	0.06							0.0002		0.0014	0.0034	0.0006	0.011	0.008		0.0044
Buildings & Structures																																							
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Silt 4-8m																																							
Well	**Sample**	**Date Sampled**	**Lab Report No**																																				
GA20-BH03	GA20-BH03/50011020	1/10/2020	748160	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	0.002	<0.0002	0.022	0.120	0.002	<0.0001	0.14	0.48	<0.005	<0.005
GA20-BH05	GA20-BH05/50011020	1/10/2020	748160	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.0002	<0.001	0.045	0.002	<0.0001	0.15	0.27	<0.005	<0.005
GA20-BH09	GA20-BH09/50011020	1/10/2020	748160	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.0002	<0.001	0.068	0.003	<0.0001	0.08	0.23	<0.005	<0.005
GA20-BH10	GA20-BH10/50011020	1/10/2020	748160	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	0.001	<0.0002	<0.001	0.170	0.006	<0.0001	0.077	0.32	<0.005	<0.005
GA20-BH12	GA20-BH12/50011020	1/10/2020	748160	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	0.002	<0.0002	<0.001	0.095	0.002	<0.0001	0.09	0.10	<0.005	<0.005

| | | | | MAH | | | | | | | | | | | Organochlorine Pesticides | | | | | | | | | | |

				PAH-Others					Phenolics								Phenolics-Halogenated								Phthalates						Sample Quality Parameter			Solvents			SVOCs											
				1-Chloronaphthalene	2-Chloronaphthalene	2-Methylnaphthalene	3-Methylcholanthrene	7,12-Dimethylbenz(a)anthracene	2,4-Dimethylphenol	2,4-Dinitrophenol	2-Methylphenol	2-Nitrophenol	3- & 4- Methylphenol	4,6-Dinitro-2-methylphenol	4-Nitrophenol	Phenol	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	2-Chlorophenol	4-Chloro-3-methylphenol	Pentachlorophenol	Bis(2-ethylhexyl) phthalate	Butylbenzyl phthalate	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	pH (Lab)	Sulphate (as SO4)	Nitrate (as N)	Methyl Ethyl Ketone (MEK)	Methyl iso-butyl ketone	Acetone	2-Picoline	3,3-Dichlorobenzidine	4-(Dimethylamino) azobenzene	4-Aminobiphenyl	4-Bromophenyl phenyl ether	4-Chlorophenyl phenyl ether	Acetophenone	Bis(2-chloroethoxy) methane	Bis(2-chloroisopropyl) ether	Dibenzofuran	Hexachlorocyclopentadiene	N-Nitrosopiperidine
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL				0.005	0.005	0.005	0.005	0.005	0.003	0.03	0.003	0.01	0.006	0.03	0.03	0.003	0.01	0.01	0.01	0.003	0.003	0.003	0.01	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.1	5	0.02	0.001	0.001	0.001	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
ADWG 2018 Aesthetic																			0.002	0.0003		0.0001									6.5-8.5	250																	
ADWG 2018 Health																			0.02	0.2		0.3		0.01	0.01								11.3																
ANZECC 2000 GW Long-Term Irrigation Water Protection																															6-8.5																		
ANZECC 2000 Livestock Drinking Water																																1000	90.4															
ANZG (2018) Freshwater 95%										0.045						0.32	0.02		0.02	0.16		0.49		0.01			1	3.7	0.026				2.4																
Buildings & Structures																															5.5-14	1000																	
NEPM 2013 Table 1A(4) Res HSL A & B GW for Vapour Intrusion, Silt 4-8m																																																
Well	**Sample**	**Date Sampled**	**Lab Report No**																																													
GA20-BH03	GA20-BH03/50011020	1/10/2020	748160	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.03	<0.003	<0.01	<0.006	<0.03	<0.03	<0.003	<0.01	<0.01	<0.01	<0.003	<0.003	<0.003	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	7.7	250	9.4	<0.001	<0.001	0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
GA20-BH05	GA20-BH05/50011020	1/10/2020	748160	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.03	<0.003	<0.01	<0.006	<0.03	<0.03	<0.003	<0.01	<0.01	<0.01	<0.003	<0.003	<0.003	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	7.6	210	0.65	0.013	<0.001	0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
GA20-BH09	GA20-BH09/50011020	1/10/2020	748160	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.03	<0.003	<0.01	<0.006	<0.03	<0.03	<0.003	<0.01	<0.01	<0.01	<0.003	<0.003	<0.003	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	7.7	260	0.14	<0.001	<0.001	0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
GA20-BH10	GA20-BH10/50011020	1/10/2020	748160	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.03	<0.003	<0.01	<0.006	<0.03	<0.03	<0.003	<0.01	<0.01	<0.01	<0.003	<0.003	<0.003	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	8	110	0.11	<0.001	<0.001	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
GA20-BH12	GA20-BH12/50011020	1/10/2020	748160	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.03	<0.003	<0.01	<0.006	<0.03	<0.03	<0.003	<0.01	<0.01	<0.01	<0.003	<0.003	<0.003	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	6.9	270	<0.02	0.001	<0.001	0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

| | | | | Total Petroleum Hydrocarbons | | | | | | | | | | | | Volatile Organic Compounds | | | | | | | | | | | |

APPENDIX C

Borehole Logs

REPORT OF TEST PIT: TP01

CLIENT:	Department of Health and Human Services	COORDS: MGA94 55	SHEET: 1 OF 1
PROJECT:	Public Housing Renewal Project	SURFACE RL: DATUM: AHD	MACHINE:
LOCATION:	Hawthorn	PIT DEPTH: 1.00 m	CONTRACTOR:
JOB NO:	20145767	BUCKET TYPE:	LOGGED: TRK DATE: 3/9/20
			CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP01/1001 0.00-0.10 m R = 1A				FILL: Silty CLAY low plasticity, brown, trace fine to angular gravel, trace brick, ceramic, plastic, glass			HAW-TP01/PACM_0.1
			0.5		HAW-TP01/1002 0.40-0.40 m R = 1A							
				0.60					FILL: CLAY medium to high plasticity, brownish orange			concrete footings @ 0.7-0.85m bgl
					HAW-TP01/1003 0.70-0.80 m R = 0A							
				0.85					FILL: Sandy CLAY medium to high plasticity, grey, fine to medium grained sand			
					HAW-TP01/1004 0.90-1.00 m R = 0A							
			1.0						TEST PIT DISCONTINUED @ 1.00 m REFUSAL IN FILL			
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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REPORT OF TEST PIT: TP02

GOLDER

CLIENT:	Department of Health and Human Services	COORDS: MGA94 55	SHEET: 1 OF 1
PROJECT:	Public Housing Renewal Project	SURFACE RL: DATUM: AHD	MACHINE:
LOCATION:	Hawthorn		CONTRACTOR:
JOB NO:	20145767	PIT DEPTH: 1.00 m	LOGGED: TRK DATE: 3/9/20
		BUCKET TYPE:	CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP02/1001 HAW-TP02/1801 HAW-TP02/1901 0.00-0.10 m R = 1A PID = 0 ppm				FILL: Silty CLAY low plasticity, brown, trace fine to coarse angular gravel, trace brick, glass, ceramic, plastic			
					HAW-TP02/1002 0.30-0.40 m R = 1A PID = 0 ppm							
			0.5									
				0.60					medium to high plasticity, brownish orange			
					HAW-TP02/1003 0.70-0.80 m R = 0A PID = 0 ppm							
			1.0						TEST PIT DISCONTINUED @ 1.00 m			
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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REPORT OF TEST PIT: TP03

GOLDER

CLIENT:	Department of Health and Human Services	COORDS: MGA94 55	SHEET: 1 OF 1
PROJECT:	Public Housing Renewal Project	SURFACE RL: DATUM: AHD	MACHINE:
LOCATION:	Hawthorn	PIT DEPTH: 1.20 m	CONTRACTOR:
JOB NO:	20145767	BUCKET TYPE:	LOGGED: TRK DATE: 3/9/20
			CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP03/1001 0.00-0.10 m R = 1A PID = 0 ppm				FILL: Gravelly CLAY medium plasticity, brown, fine to coarse angular gravel, trace brick, ceramic, glass, plastic			
				0.20					browny orange			
			0.5		HAW-TP03/1002 0.40-0.50 m R = 1A PID = 0 ppm							
				0.80					CLAY medium to high plasticity, brownish orange			
			1.0		HAW-TP03/1003 0.90-1.00 m R = 0A PID = 0 ppm							
									TEST PIT DISCONTINUED @ 1.20 m			
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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REPORT OF TEST PIT: TP04

CLIENT:	Department of Health and Human Services	COORDS: MGA94 55	SHEET: 1 OF 1
PROJECT:	Public Housing Renewal Project	SURFACE RL: DATUM: AHD	MACHINE:
LOCATION:	Hawthorn	PIT DEPTH: 1.10 m	CONTRACTOR:
JOB NO:	20145767	BUCKET TYPE:	LOGGED: TRK DATE: 3/9/20
			CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP04/1001 0.00-0.10 m R = 1A PID = 0 ppm				FILL: Silty CLAY low plasticity, brown, trace brick, glass, plastic			
				0.20					FILL: Sandy CLAY low plasticity, grey, trace brick and plastic			
			0.5		HAW-TP04/1002 0.40-0.50 m R = 1A PID = 0 ppm							
				0.80					Sandy CLAY low plasticity, orange/brown			
			1.0		HAW-TP04/1003 0.90-1.00 m R = 0A PID = 0 ppm							
									TEST PIT DISCONTINUED @ 1.10 m			
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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REPORT OF TEST PIT: TP05

GOLDER

CLIENT:	Department of Health and Human Services	COORDS: MGA94 55	SHEET: 1 OF 1
PROJECT:	Public Housing Renewal Project	SURFACE RL: DATUM: AHD	MACHINE:
LOCATION:	Hawthorn	PIT DEPTH: 1.00 m	CONTRACTOR:
JOB NO:	20145767	BUCKET TYPE:	LOGGED: TRK DATE: 3/9/20
			CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP05/1001 0.00-0.10 m R = 1A PID = 0 ppm				FILL: Silty CLAY low plasticity, brown, trace fine to coarse angular gravel, trace brick, ceramic, glass, plastic			HAW-TP05/PACM_0.1
				0.30	HAW-TP05/1002 0.30-0.40 m R = 0A PID = 0 ppm				no demolition debris			
			0.5	0.50	HAW-TP05/1003 0.60-0.70 m R = 0A PID = 0 ppm				CLAY medium plasticity, orange/brown			
			1.0						TEST PIT DISCONTINUED @ 1.00 m			
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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REPORT OF TEST PIT: TP06

		COORDS: MGA94 55	SHEET: 1 OF 1
CLIENT:	Department of Health and Human Services	SURFACE RL: DATUM: AHD	MACHINE:
PROJECT:	Public Housing Renewal Project		CONTRACTOR:
LOCATION:	Hawthorn	PIT DEPTH: 0.90 m	LOGGED: TRK DATE: 3/9/20
JOB NO:	20145767	BUCKET TYPE:	CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP06/1001 0.00-0.10 m R = 1A PID = 0 ppm				FILL: Silty CLAY low plasticity, brown, trace fine to coarse angular gravel, trace brick, ceramic, glass, plastic			
				0.20					low plasticity, grey with orange mottling			
					HAW-TP06/1002 0.30-0.90 m R = 0A PID = 0 ppm							
			0.5	0.50					orangey grey			
									TEST PIT DISCONTINUED @ 0.90 m			
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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REPORT OF TEST PIT: TP07

GOLDER

CLIENT:	Department of Health and Human Services	COORDS: MGA94 55	SHEET: 1 OF 1
PROJECT:	Public Housing Renewal Project	SURFACE RL: DATUM: AHD	MACHINE:
LOCATION:	Hawthorn	PIT DEPTH: 1.00 m	CONTRACTOR:
JOB NO:	20145767	BUCKET TYPE:	LOGGED: TRK DATE: 3/9/20
			CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP07/1001 0.00-0.10 m				FILL: Sandy CLAY low plasticity, brown, trace fine to coarse angular gravel, trace plastic, glass, brick, metal			
					HAW-TP07/1002 0.30-0.40 m R = 1A							
			0.5	0.50					Sandy CLAY low plasticity, brownish grey			
					HAW-TP07/1003 0.60-0.70 m R = 0A							
				0.80					brownish orange			
			1.0						TEST PIT DISCONTINUED @ 1.00 m			
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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REPORT OF TEST PIT: TP08

CLIENT:	Department of Health and Human Services	COORDS: MGA94 55	SHEET: 1 OF 1
PROJECT:	Public Housing Renewal Project	SURFACE RL: DATUM: AHD	MACHINE:
LOCATION:	Hawthorn	PIT DEPTH: 2.20 m	CONTRACTOR:
JOB NO:	20145767	BUCKET TYPE:	LOGGED: TRK DATE: 3/9/20
			CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP08/1001 0.00-0.10 m R = 1A PID = 0 ppm				FILL: Sandy CLAY low plasticity, brown, trace fine to coarse angular gravel, trace plastic			old metal pipe @ 0.2m
					HAW-TP08/1002 0.30-0.40 m R = 1A PID = 0 ppm							
			0.5	0.50					orange/brown, trace metal, and brick			
					HAW-TP08/1003 0.80-0.90 m R = 1A PID = 0 ppm							
			1.0									
			1.5									
				1.70					Sandy CLAY medium plasticity, grey with orange mottling			
			2.0		HAW-TP08/1004 1.90-2.00 m R = 0A PID = 0 ppm							
									TEST PIT DISCONTINUED @ 2.20 m			
			2.5									
			3.0									

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REPORT OF TEST PIT: TP09

GOLDER

CLIENT:	Department of Health and Human Services	COORDS: MGA94 55	SHEET: 1 OF 1
PROJECT:	Public Housing Renewal Project	SURFACE RL: DATUM: AHD	MACHINE:
LOCATION:	Hawthorn	PIT DEPTH: 1.60 m	CONTRACTOR:
JOB NO:	20145767	BUCKET TYPE:	LOGGED: TRK DATE: 3/9/20
			CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP09/1001 0.00-0.10 m R = 0A PID = 0 ppm				FILL: Silty SAND fine to medium grained, brown, trace fine to coarse angular gravel			
				0.25					FILL: Sandy CLAY low plasticity, brownish grey			
					HAW-TP09/1002 0.30-0.40 m R = 0A PID = 0 ppm							
				0.40					orange			
				0.50								
			0.5		HAW-TP09/1003 0.50-0.60 m R = 1A PID = 0 ppm				CLAY medium plasticity, brownish orange, trace sand, trace asphalt, fine to medium angular gravel			poly pipe @ 0.6m
			1.0									
			1.5		HAW-TP09/1004 1.50-1.60 m R = 1A PID = 0 ppm							
									TEST PIT DISCONTINUED @ 1.60 m ABORTED IN FILL			
			2.0									
			2.5									
			3.0									

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REPORT OF TEST PIT: TP10

GOLDER

CLIENT:	Department of Health and Human Services	COORDS: MGA94 55	SHEET: 1 OF 1
PROJECT:	Public Housing Renewal Project	SURFACE RL: DATUM: AHD	MACHINE:
LOCATION:	Hawthorn	PIT DEPTH: 0.80 m	CONTRACTOR:
JOB NO:	20145767	BUCKET TYPE:	LOGGED: TRK DATE: 3/9/20
			CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP10/1001 HAW-TP10/1801 HAW-TP10/1901 0.00-0.10 m R = 1A PID = 0 ppm				FILL: Silty SAND fine to coarse grained, brown			
				0.20					FILL: Sandy CLAY medium plasticity, brownish grey			
			0.5		HAW-TP10/1002 0.40-0.50 m R = 0A PID = 0 ppm							
									TEST PIT DISCONTINUED @ 0.80 m ABORTED DUE TO ELECTRICAL CONDUIT			
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									

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REPORT OF TEST PIT: TP10A

CLIENT:	Department of Health and Human Services	COORDS: MGA94 55	SHEET: 1 OF 1
PROJECT:	Public Housing Renewal Project	SURFACE RL: DATUM: AHD	MACHINE:
LOCATION:	Hawthorn		CONTRACTOR:
JOB NO:	20145767	PIT DEPTH: 1.10 m	LOGGED: TRK DATE: 3/9/20
		BUCKET TYPE:	CHECKED: DATE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
EX			0.0		HAW-TP10A/1001 0.00-0.10 m R = 0A PID = 0 ppm				FILL: Silty SAND fine to coarse grained, brown, trace fine to medium angular gravel			
				0.30					FILL: Sandy CLAY medium plasticity, orange brown			
			0.5		HAW-TP10A/1002 0.40-0.50 m R = 0A PID = 0 ppm							red brick @ 0.6m
				0.80					CLAY medium to high plasticity, orange brown			
			1.0		HAW-TP10A/1003 0.90-1.00 m R = 0A PID = 0 ppm							
									TEST PIT DISCONTINUED @ 1.10 m			
			1.5									
			2.0									
			2.5									
			3.0									

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-01

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327566.8 m E 5810364.8 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 16.9 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 18-9-20
JOB NO:	20145767	HOLE DEPTH: 14.57 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	16.90	GA20-BH-HAW-01/200 DS 0.00-0.10 m PID=0.1 R = 1A			CI	CLAY medium plasticity, brown, orange, yellow, trace fine to coarse grained, sub-angular to angular gravel	w < PL - w ~ PL		
				0.50 / 16.40	GA20-BH-HAW-01/200 DS 0.40-0.50 m PID=0.1 R = 1A			CI-CH	Sandy CLAY medium plasticity, white, yellow, red, fine to coarse grained sand		F - St	inferred FILL
			1	1.00 / 15.90	GA20-BH-HAW-01/200 DS 0.90-1.00 m PID=0.1 R = 0A			CH	Sandy CLAY high plasticity, yellow, orange, fine to coarse grained sand	w < PL		
				1.30 / 15.60					pale grey and white			
				1.50 / 15.40	GA20-BH-HAW-01/200 DS 1.40-1.50 m PID=0.0 R = 0A GA20-BH01-001 SPT 1.50-1.80 m 6, 20/150mm HB N>20			SC	Clayey SAND fine grained, orange, high plasticity clay	D - M	D	
			2	2.50 / 14.40				CH	CLAY high plasticity, brown, trace fine to coarse grained sand			
				2.90 / 14.00	GA20-BH01-002 SPT 2.90-3.25 m 12, 19, 11/50mm HB N>30				pale grey and grey and orange, no sand			
WB		100% Water RETURN	3									
			4							w < PL	H	
				4.50 / 12.40	GA20-BH01-003 SPT 4.50-4.95 m 5, 12, 24 N=36				orange with red, trace fine grained, sub-angular gravel			
NMLC			5	5.00 / 11.90					high plasticity, pale brown			
				5.30					GRAVEL fine - coarse grained, poorly graded, sub-angular, brown, orange	M	MD	
									For Continuation Refer to Sheet 2			
			6									
			7									
			8									
			9									
			10									

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-01

CLIENT:	Department of Health and Human Services	COORDS: 327566.8 m E 5810364.8 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 16.9 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 18-9-20
JOB NO:	20145767	HOLE DEPTH: 14.57 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2								
				3								
				4								
				5	5.36		Continuation of Sheet 1					
NMLC	100% Water RETURN	100	60 (100)	6	11.54		SILTSTONE pale brown	HW			5.36-5.48 m: J, 80°, Pl, Sm, SAND Ct 5.38-5.55 m: DBX2, sp = 170 mm 5.50 m: J, 0°, Un, Sm, CLAY Ve 5.63-5.96 m: JX3, 0°, sp = 110-200 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve 6.00-6.38 m: JX3, 0°, sp = 80-150 mm, Un, Sm-Ro, FeO, GRAVEL Sn-Ct	
		100	60 (100)	7	6.46 10.44		grey brown	HW - MW			6.65 m: DB 7.05-7.20 m: DBX3 7.48 m: J, 0°, Pl-Un, Ro, FeO, GRAVEL Sn-Ct 7.89 m: J, 0°, Pl, Sm-Ro, FeO, CLAY Sn-Ve	
		100	40 (100)	8	8.00 8.90		orange brown	HW			8.00 m: J, 20°, Pl, Sm-Ro, FeO, GRAVEL Sn-Ct, <20 mm 8.05-8.43 m: JX6, 0°, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve	
	24-09-20	100	55 (100)	9	8.50 8.40		pale grey brown	HW - MW			8.50 m: J, 10°, Pl, Sm-Ro, FeO, CLAY Sn-Ve 8.73 m: J, 15°, Cv, Sm-Ro, FeO, GRAVEL Sn-Ct 8.86 m: J, 10°, Pl, Sm, CLAY Ve 9.14 m: J, 15°, Pl, Ro, FeO Sn 9.27 m: J, 5-20°, sp = 10-20 mm, Pl-Un, Sm-Ro, FeO, GRAVEL Sn-Ct 9.43 m: J, 0°, Un, Ro, FeO, GRAVEL Sn-Ct 9.60 m: J, 0°, Pl, Sm-Ro, FeO, CLAY Sn-Ve 9.75-10.10 m: J, 85°, Pl, Sm, CLAY Ve	
				10	10.00							

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-01

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327566.8 m E 5810364.8 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 16.9 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 18-9-20
JOB NO:	20145767	HOLE DEPTH: 14.57 m	CHECKED: DATE:

Drilling

METHOD	WATER	TCR	RQD (SCR)
NMLC	100% Water RETURN	100	35 (100)
		100	60 (100)
		100	75 (100)

Field Material Description

DEPTH (metres)	DEPTH RL	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING
10	6.90	SILTSTONE pale brown orange brown	HW
11	11.50 / 5.40	pale grey brown	HW - MW
12	12.00 / 4.90	brown, iron oxide	
	12.60 / 4.30	brown grey	MW
13			
14	14.00 / 2.90	grey with brown	MW - SW
	14.57 / 2.33	END OF BOREHOLE @ 14.57 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ 9.00 m DEPTH STANDPIPE INSTALLED	
15			
16			
17			
18			
19			
20			

GRAPHIC LOG

INFERRED STRENGTH UCS MPa: VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200

LABORATORY STRENGTH (MPa)

Defect Information

DEFECT DESCRIPTION & Additional Observations
10.14-10.49 m: JX4, 0°, sp = 60-180 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve
10.61-10.70 m: JX2, 0-10°, sp = 100 mm, Pl-Un, Sm-Ro, Feo, CLAY, SAND Sn-Ct
10.92 m: J, 5°, Un, Sm, FeO, CLAY Sn-Ve
11.09-11.33 m: JX4, 0-30°, sp = 0-120 mm, Pl-Un, Sm-Ro, Feo, CLAY, SAND Sn-Ct
11.43 m: J, 0°, Pl, Ro, FeO Sn
11.50-11.60 m: JX4, 0-90°, sp = 0-50 mm, Pl-Un, Sm-Ro, Feo, CLAY, SAND Sn-Ct
11.69-11.85 m: JX2, 0°, sp = 250 mm, Pl, Ro, FeO Sn
12.07-12.67 m: JX9, 0-5°, sp = 30-200 mm, Un, Ro, FeO, fine GRAVEL Sn-Ct, drilling induced some opening
13.19-13.62 m: JX4, 0-30°, sp = 70-250 mm, Pl-Un, Sm-Ro, FeO, SAND, GRAVEL Sn-Ct
13.65 m: J, 20°, Pl, Sm-Ro, FeO Sn
13.90 m: J, 40°, Pl, Sm-Ro, FeO Sn
14.35-14.39 m: Jmultiple, 30°, sp = 0-5 mm, Pl, Sm-Ro, FeO, GRAVEL Sn-Ct

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

PRELIMINARY

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PRELIMINARY REPORT OF STANDPIPE INSTALLATION: GA20-BH-HAW-01

GOLDER

SHEET: 1 OF 1

CLIENT:	Department of Health and Human Services	COORDS: 327566.8 m E 5810364.8 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 16.9 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 18-9-20
JOB NO:	20145767	HOLE DEPTH: 14.57 m	CHECKED: DATE:

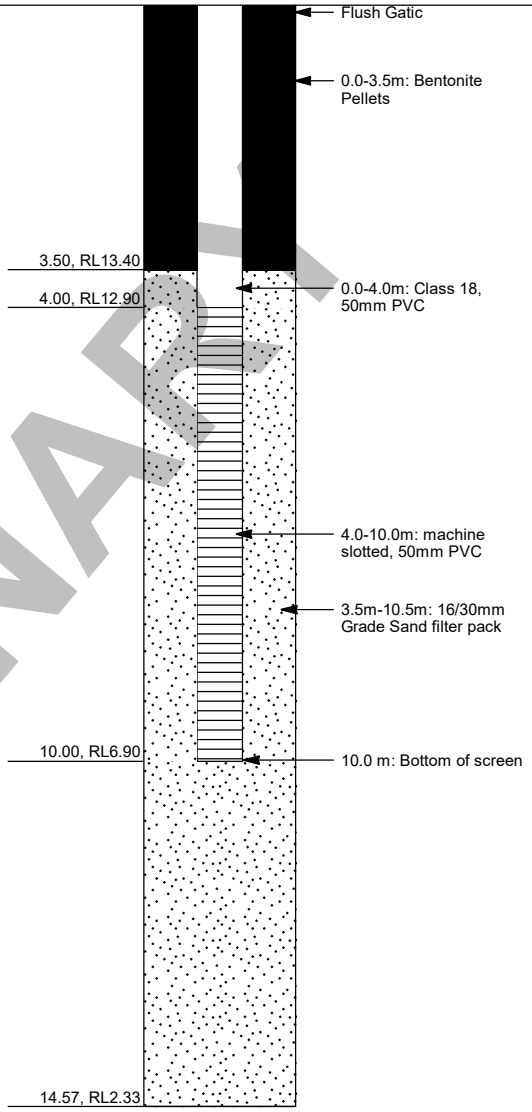
Drilling | **Field Material Description** | **Instrumentation Details**

METHOD: ADT, WB, NMLC, NMLC, NMLC

WATER: 100% Water RETURN; 100% Water RETURN; 24-09-20; 100% Water RETURN

DEPTH (metres): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

DEPTH RL	SOIL/ROCK MATERIAL DESCRIPTION
16.90 / 0.50	CLAY
16.40 / 1.00	SANDY CLAY
15.90 / 1.30 / 1.50	SANDY CLAY
15.40 / 2.50	CLAYEY SAND
14.40 / 2.90	CLAY
14.00 / 4.50	
12.40 / 5.00	
5.30 / 5.35 / 11.94	GRAVEL
	SILTSTONE
6.46 / 10.44	
8.00 / 8.90	
8.50 / 8.40	
10.00 / 6.90	
11.50 / 5.40	
12.00 / 4.90	
12.60 / 4.30	
14.00 / 2.90	
14.57 / 2.33	END OF BOREHOLE @ 14.57 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ 9.00 m DEPTH STANDPIPE INSTALLED



PRELIMINARY

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-02

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327594.2 m E 5810363.4 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 17.3 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 17-9-20
JOB NO:	20145767	HOLE DEPTH: 14.92 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	17.30	GA20-BH-HAW-02/200 DS 0.00-0.10 m PID=0.1 R = 1A			SC	Clayey SAND fine - coarse grained, brown, medium plasticity clay, trace fine to coarse grained, sub-angular to anguar gravel, trace glass fragments and roots	M - W	L - MD	
				0.30 / 17.00	GA20-BH-HAW-02/2002 DS 0.40-0.50 m PID=0.0 R = 0A			CI	Sandy CLAY medium plasticity, pale grey, fine to medium grained sand	w ~ PL - w > PL	St	
			1	1.00 / 16.30	GA20-BH-HAW-02/200 DS 0.90-1.00 m PID=0.0 R = 0A			CH	Sandy CLAY high plasticity, orange and pale grey, fine to medium grained sand	w ~ PL		
				1.50 / 15.80	GA20-BH-HAW-02/200 DS 1.40-1.50 m PID=0.0 R = 0A GA20-BH02-001 SPT 1.50-1.95 m 7, 7, 12 N=19			CH	CLAY high plasticity, orange and grey, with fine to medium grained sand, with fine to coarse grained, sub-rounded to sub-angular gravel	w < PL	VSt	
			2	2.80 / 14.50	GA20-BH02-002 SPT 3.00-3.35 m 6, 9, 7/50mm HB N>16				SILTSTONE pale grey, residual soil to extremely weathered siltstone			
			3						For Continuation Refer to Sheet 2			
			4									
			5									
			6									
			7									
			8									
			9									
			10									

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-02

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327594.2 m E 5810363.4 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 17.3 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 17-9-20
JOB NO:	20145767	HOLE DEPTH: 14.92 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2								
				3	3.40		Continuation of Sheet 1					
NMLC	100% Water RETURN	70	35 (50)	4	3.55 / 13.75		SILTSTONE pale grey / pale brown	RS - XW / HW			3.73 m: JX2, 60-70°, sp = 0-50 mm, Pl, Sm, CLAY, SAND Ve-Ct	
		100	35 (100)					HW - MW / HW			3.80 m: J, 0°, Pl, Sm, Cn 3.87 m: J, 30°, Pl, Sm, Cn 4.02 m: J, 0°, Un, Sm, Cn 4.17 m: DB 4.38-4.46 m: JX2, 0°, Pl-Un, Sm, CLAY Ve	
		95	0 (95)	5							4.56 m: DB 4.65-5.00 m: J, 85°, Pl, Sm, CLAY Cn-Ve 4.82 m: J, 5°, Pl, Sm, CLAY Ve 4.90-5.47 m: J, 85°, Pl, Sm, CLAY Ve 5.07-5.27 m: JX4, 0°, sp = 50-110 mm, Pl, Sm, FeO Sn	
		100	15 (85)	6	5.47 / 11.80		CORE LOSS SILTSTONE pale brown	HW - MW HW			5.38 m: DB 5.50-5.80 m: J, 80-90°, Pl, Sm, CLAY Ve 5.66 m: J, 45°, Pl, Sm, CLAY Cn-Ve 6.08 m: DB 6.17-6.40 m: Jx8, 0-10°, sp = 10-60 mm, Pl-Un, Sm, FeO, CLAY, SAND Sn-Ct 6.40-6.50 m: Jmultiple, 60-75°, sp = 0-40 mm, Pl-St, Sm, Cn	
		100	40 (100)	7	6.95 / 10.35		brown with brown grey	HW - MW / MW			6.50-6.60 m: CS, GRAVEL, <100 mm 6.78 m: J, 10°, Pl, Sm, CLAY Ve 6.89 m: J, 40°, Pl, Sm, FeO, CLAY Sn-Ve 6.96 m: HB 7.10 m: J, 10°, Pl, Sm, CLAY Ve 7.14 m: J, 0°, Pl-Un, Sm, FeO Sn 7.17 m: JX2, 0-40°, sp = 0-20 mm, Pl, Sm, FeO, CLAY Sn-Ve 7.40-7.50 m: JX3, 0-15°, sp = 50-70 mm, Pl, Sm, CLAY Cn-Ve, disturbed by drilling 7.53 m: J, 30°, Pl, Sm, FeO Sn 7.64 m: J, 10°, Pl, Sm, FeO Sn 7.74 m: J, 0°, Un, Sm, FeO, SAND, GRAVEL Sn-Ct	
		100	35 (100)	8	7.90 / 9.40		brown grey with brown	MW - SW			8.10-8.30 m: J, 80°, Pl, Sm, FeO Cn-Sn 8.10 m: DB 8.10-8.30 m: J, 80°, Pl, Sm, FeO Cn-Sn 8.35-8.60 m: JX3, 0°, sp = 110-150 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve 8.68-9.03 m: Jmultiple, 0-90°, sp = 0-60 mm, Pl-Un, Sm, FeO Sn	
		100	65 (100)	9							9.14 m: J, 20°, Pl, Sm, CLAY Cn-Ve 9.43 m: J, 15°, Pl, Sm, FeO Sn 9.58 m: J, 50°, Pl-Un, Sm, Cn 9.77 m: J, 0-10°, Un-St, Sm, Cn	
				10								

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-02

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327594.2 m E 5810363.4 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 17.3 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 17-9-20
JOB NO:	20145767	HOLE DEPTH: 14.92 m	CHECKED: DATE:

Drilling

METHOD	WATER	TCR	RQD (SCR)
NMLC	100% Water RETURN	100	65 (100)
		100	85 (95)
		100	35 (100)
		100	40 (100)

Field Material Description

DEPTH (metres)	DEPTH RL	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING
10		SILTSTONE pale brown	MW - SW
11	11.80 5.50	orange brown	MW
12	12.90 4.40	pale brown	HW - MW
13	13.60 3.70	grey brown	
14	14.92 2.38	END OF BOREHOLE @ 14.92 m TARGET DEPTH GROUNDWATER NOT OBSERVED BACKFILLED	
15			
16			
17			
18			
19			
20			

GRAPHIC LOG

INFERRED STRENGTH UCS MPa: VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200

LABORATORY STRENGTH (MPa)

Defect Information

DEFECT DESCRIPTION & Additional Observations

10.05 m: HB
10.17-10.21 m: JX2, 0-10°, sp = 20-40 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve

10.82 m: EWS, GRAVEl, SAND, <40 mm

11.06 m: J, 5°, Pl, Sm, Cn

11.25 m: J, 30°, Pl-Un, Sm, CLAY, SAND Ve-Ct
11.40 m: J, 5°, Pl, FeO, CLAY Sn-Ve

11.82 m: J, 0°, Pl-Un, Sm, CLAY Cn-Ve

12.00-12.12 m: J, 80°, Un, Ro, FeO, SAND Sn-Ct
12.12-12.90 m: IS, CLAY, <80 mm
12.12-12.18 m: JX4, 0°, Pl-Un, Sm, SAND Ct

12.12-12.90 m: IS, CLAY, <80 mm
12.26-12.43 m: JX2, 50°, Pl, Ro, FeO, SAND Sn-Ct
12.46-12.55 m: JX2, 0-5°, Pl, Sm-Ro, FeO Sn
12.55-12.68 m: J, 80-90°, Cv, Ro, FeO, SAND Sn-Ct
12.77 m: J, 0°, Pl, Sm, CLAY Ve
13.03-13.26 m: JX5, 0-45°, sp = 30-120 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve

13.40-13.45 m: J, 45°, Pl, Sm, FeO, CLAY Sn-Ve
13.54-13.62 m: JX3, 0-20°, sp = 20-70 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve
13.93 m: J, 0°, Pl-Un, Sm, CLAY Ve
13.99-14.08 m: JX3, 0-45°, sp = 0-70 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve
14.15 m: J, 0°, Pl, Sm, CLAY Ve
14.19-14.23 m: CS, FeO, GRAVEL Sn-Ct, <50 mm
14.34-14.39 m: J, 50°, Pl, Sm, CLAY Ve
14.38-14.50 m: J, 80°, Pl, Sm, CLAY Ve
14.49-14.59 m: JX2, 0-20°, sp = 100 mm, Pl-Un, Sm, CLAY Ve
14.71-14.83 m: JX4, 0-90°, sp = 0-50 mm, Pl-Un, Sm-Ro, FeO, CLAY, SAND, GRAVEL Sn-Ct

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

PRELIMINARY

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-03

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327631.9 m E 5810356.3 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 19.8 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 21-9-20
JOB NO:	20145767	HOLE DEPTH: 15.45 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT			0	19.80	GA20-BH-HAW-03/200 DS 0.00-0.10 m PID=0.1 R = 1A			CI	Sandy Gravelly CLAY medium plasticity, brown, fine to coarse grained, sub-angular to angular gravel, fine to coarse grained sand, with grass	w < PL	F	
				0.40 19.40	GA20-BH-HAW-03/2002 DS 0.40-0.50 m PID=0.1 R = 0A			CH	CLAY high plasticity, orange brown with red and grey, trace fine to coarse grained sand	w < PL - w ~ PL	St	
	L-M		1	1.00 18.80	GA20-BH-HAW-03/200 DS 0.90-1.00 m PID=0.1 R = 0A				orange with pale grey and red, trace fine to coarse grained, sub-rounded to sub-angular gravel			
	M			1.50 18.30	GA20-BH-HAW-03/200 DS 1.40-1.50 m PID=0.0 R = 0A GA20-BH03-001 SPT 1.50-1.77 m 7, 18/120mm HB N>18				orange with pale grey, with fine to coarse grained, sub-angular gravel, trace fine to coarse grained sand	w < PL	VSt - H	
			2						For Continuation Refer to Sheet 2			
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

PRELIMINARY

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-03

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327631.9 m E 5810356.3 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 19.8 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 21-9-20
JOB NO:	20145767	HOLE DEPTH: 15.45 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2	2.00		Continuation of Sheet 1					
NMLC	100% Water RETURN	100	0 (30)		17.80		SILTSTONE brown orange with brown	HW			2.06-2.20 m: IS, CLAY, GRAVEL, <140 mm 2.20-2.25 m: J, 90°, Pl, Sm, CLAY Ve 2.25-2.30 m: CS, <50 mm 2.32-2.39 m: J, 80°, Pl, Sm, CLAY Ve 2.37-2.53 m: J, 85°, Pl-Un, Sm, CLAY Ve 2.38-2.41 m: Jmultiple, 0-90°, Pl, Sm, CLAY Cn-Ve 2.46-2.52 m: JX2, 0°, sp = 120 mm, Pl, Sm, CLAY Cn-Ve 2.55-2.65 m: CS, <100 mm, disturbed by drilling	
		100	0 (100)		2.65							
		20	0 (0)	3	17.15 3.67		CORE LOSS					
		100	0 (0)	4	16.13 4.60		SILTSTONE/BRECCIA pale grey and orange and brown					
		100	0 (75)		15.20 5.12		SILTSTONE pale brown	HW			4.65-4.68 m: CS, probably induced by drilling 4.74 m: J, 40°, Pl, Sm, CLAY Cn-Ve 4.74-4.85 m: J, 85-90°, Un-St, Sm, Cn	
		85	20 (85)	5	14.59 5.70		CORE LOSS SILTSTONE brown orange with brown	HW			4.74 m: J, 40°, Pl, Sm, CLAY Cn-Ve 4.74-4.85 m: J, 85-90°, Un-St, Sm, Cn 4.75-4.80 m: J, St, Sm, probably induced by drilling 4.85-4.88 m: CS, GRAVEL, <30 mm	
		60	0 (50)	6	14.10 6.12 13.68 6.70		CORE LOSS SILTSTONE pale brown	HW			4.90-4.94 m: J, 70°, Un, Sm, CLAY, GRAVEL Ct 5.03 m: J, 40°, Un, Sm, CLAY, SAND Ct 5.21-5.24 m: DB 5.30 m: J, 45°, Pl-Un, Sm, CLAY, SAND Ve-Ct 5.35 m: J, 0°, Un, Sm, GRAVEL Ct, drilling induced opening 5.50 m: J, 15°, Pl, Sm, CLAY, GRAVEL Ve-Ct	
		30	0 (20)	7	13.10 7.35		CORE LOSS				5.55-5.70 m: J, 85°, Pl, Sm, SAND, GRAVEL Ct, disturbed by drilling 6.12-6.20 m: J, 85°, Pl, Sm, CLAY Ve, disturbed by drilling 6.19-6.25 m: JX2, 0-10°, sp = 60 mm, Pl-Un, Sm, GRAVEL Ct	
		100	40 (100)	8	12.45 8.10		SILTSTONE pale brown	HW			6.19-6.38 m: J, 80°, Pl, Sm, CLAY Ct, disturbed by drilling 6.19-6.25 m: JX2, 0-10°, sp = 60 mm, Pl-Un, Sm, GRAVEL Ct 6.40-6.47 m: JX3, 5°, sp = 30-40 mm, Pl, Sm, CLAY Cn-Ve	
		80	25 (45)		11.63 8.50		CORE LOSS SILTSTONE pale grey brown, iron oxide	HW			6.54 m: EWS, SAND, <30 mm 6.59-6.70 m: EWS, CLAY, SAND, GRAVEL, <110 mm 7.38-7.43 m: IS, CLAY, <50 mm	
		75	0 (55)	9	8.68 11.12 9.30		CORE LOSS SILTSTONE pale brown, iron oxide	HW			7.47-7.77 m: JX4, 0-10°, Un, Sm-Ro, CLAY, SAND Ve-Ct, drilling induced opening 7.90 m: J, 45°, Pl, Sm, CLAY Ve 8.07 m: J, 0°, Pl-Un, Sm, CLAY Ve-Ct 8.17-8.23 m: EWS, CLAY, SAND, GRAVEL, <50 mm	
	24-09-20	70	0 (60)		10.50 9.78 10.02		CORE LOSS	HW			8.40 m: J, 65°, Pl, Sm, CLAY, fine quartz GRAVEL Ve-Ct 8.42-8.50 m: EWS, CLAY, <80 mm 8.80-8.95 m: JX5, 0-30°, sp = 0-60 mm, Un, Sm-Ro, FeO, SAND, GRAVEL, CLAY Sn-Ct 9.02-9.06 m: IS, CLAY, SAND, GRAVEL,	
				10								

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-03

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327631.9 m E 5810356.3 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 19.8 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 21-9-20
JOB NO:	20145767	HOLE DEPTH: 15.45 m	CHECKED: DATE:

Drilling

METHOD	WATER	TCR	RQD (SCR)
NMLC	100% Water RETURN	70	0 (60)
		100	15 (100)
		60	10 (45)
		85	10 (75)
		60	30 (60)
		100	0 (75)
		55	0 (35)

Field Material Description

DEPTH (metres)	DEPTH RL	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING
10		SILTSTONE pale grey and pale brown, iron oxide	HW
11	11.52		
	8.28	CORE LOSS	
	11.90		
12	7.90	SILTSTONE pale brown and pale grey with brown	XW - HW
	12.26		
	7.54	SILTSTONE/BRECCIA pale brown with brown	HW
	12.50		
	12.67	CORE LOSS	
	7.13	SILTSTONE pale brown and pale grey with brown	HW
13	13.50		
	6.30	CORE LOSS	HW
	13.74		
	6.06	SILTSTONE pale grey with brown	
14	14.60		XW - HW
	5.20	CORE LOSS	
	15.00		
15	4.80	SILTSTONE pale grey with brown	XW - HW
	15.45		
	4.35	END OF BOREHOLE @ 15.45 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ 9.30 m DEPTH STANDPIPE INSTALLED	
16			
17			
18			
19			
20			

GRAPHIC LOG

INFERRED STRENGTH UCS MPa: VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200

LABORATORY STRENGTH (MPa)

Defect Information

DEFECT DESCRIPTION & Additional Observations

<40 mm
9.10-9.15 m: JX2, 60-70°, sp = 0-20 mm, Pl, Sm, CLAY Ve, disturbed by drilling
9.15-9.30 m: EWS, CLAY, <150 mm
9.84 m: J, 5°, Un, Sm, CLAY Ve
9.92 m: DB
10.08-10.11 m: JX2, 0-40°, sp = 0-30 mm, Un, Sm-Ro, FeO, CLAY Sn-Ve, disturbed by drilling
10.18-10.25 m: DBX2, sp = 70 mm
10.38 m: JX2, 0-60°, sp = 0-50 mm, Pl-Un, Sm, SAND, GRAVEL Ct
10.46 m: DB
10.49-10.54 m: EWS, CLAY, SAND, <50 mm
10.59 m: DB
10.66-10.85 m: EWS, <200 mm
10.93 m: DB
11.05-11.13 m: JX3, 0-20°, sp = 30-50 mm, Pl-Un, Sm, SAND Ct, disturbed by drilling
11.27-11.44 m: JX5, 0-10°, sp = 30-50 mm, Un, Sm, FeO, SAND, GRAVEL Sn-Ct
12.04-12.18 m: DBX2
12.30-12.36 m: EWS, CLAY, GRAVEL, <60 mm
12.40-12.50 m: EWS, CLAY, <100 mm
12.70 m: DB
12.84 m: J, 20°, Pl-Un, Sm, CLAY, SAND Ve-Ct
13.08 m: J, 40°, Pl, Sm, GRAVEL Ct, disturbed by drilling
13.12-13.15 m: J, 30°, Pl, Sm, CLAY Ct, <30 mm
13.23 m: J, 0°, Un, Sm-Ro, FeO, GRAVEL Sn-Ct
13.29-13.40 m: Jmultiple, 45-55°, sp = 0-20 mm, Pl, Sm-Ro, FeO, GRAVEL Sn-Ct
13.44-13.50 m: EWS, <60 mm
13.82 m: DB
14.09-14.18 m: DBX3
14.21-14.28 m: EWS, CLAY, SAND, <70 mm
14.30 m: J, 0°, Pl-Un, Sm, CLAY, SAND Ct, <5 mm
14.34-14.38 m: J, 60°, Pl, Sm, CLAY Ct, <40 mm
14.39-14.52 m: Jmultiple, 0-90°, sp = 0-20 mm, Pl, Sm, CLAY Cn-Ve
14.54-14.60 m: EWS, CLAY, <60 mm
15.00-15.06 m: J, 70°, Pl, Sm-Ro, FeO, GRAVEL Sn-Ct
15.06-15.13 m: EWS, CLAY, GRAVEL, <70 mm
15.20 m: J, 60°, Pl, Sm, CLAY Ve
15.24 m: J, 0°, Pl-Un, Sm, CLAY, SAND Ct, <10 mm
15.28-15.30 m: EWS, CLAY, SAND, GRAVEL, <20 mm
15.30-15.40 m: J, 0-90°, sp = 0-20 mm, Pl, Sm, CLAY Cn-Ve
15.40-15.45 m: HB

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

PRELIMINARY

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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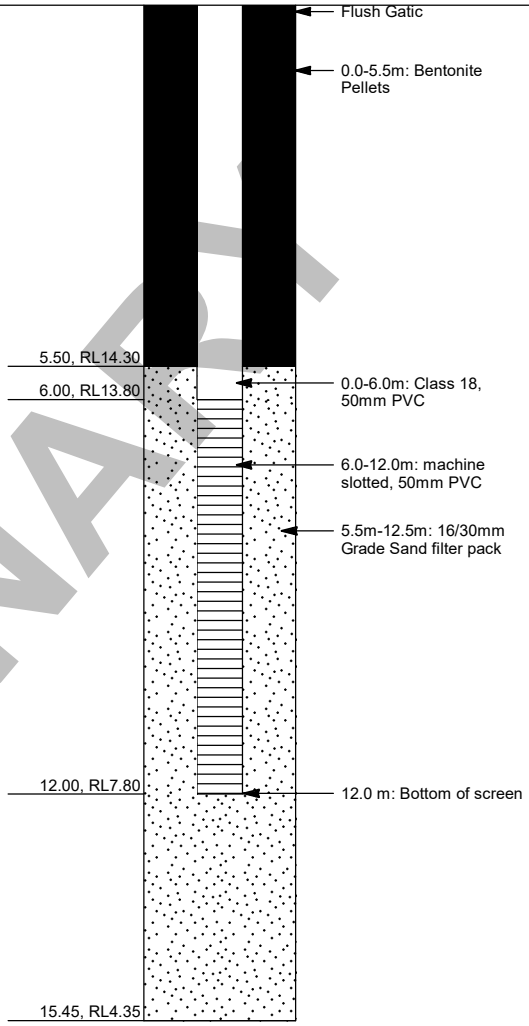
PRELIMINARY REPORT OF STANDPIPE INSTALLATION: GA20-BH-HAW-03

SHEET: 1 OF 1

CLIENT:	Department of Health and Human Services	COORDS: 327631.9 m E 5810356.3 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 19.8 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 21-9-20
JOB NO:	20145767	HOLE DEPTH: 15.45 m	CHECKED: DATE:

Drilling | **Field Material Description** | **Instrumentation Details**

METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION
ADT		0	0.40		SANDY GRAVELLY CLAY
			19.40 / 1.00		CLAY
			18.80 / 1.50		
			18.30 / 2.00		
NMLC	100% Water RETURN		17.80 / 2.65		SILTSTONE
			17.15 / 3.67		CORE LOSS
			16.13 / 4.60		SILTSTONE/BRECCIA
		5	15.20 / 5.12		SILTSTONE
			14.59 / 5.70		CORE LOSS
					SILTSTONE
			6.12		CORE LOSS
			13.68 / 6.70		SILTSTONE
			13.10 / 7.35		CORE LOSS
			12.45 / 8.10		SILTSTONE
			8.50		CORE LOSS
					SILTSTONE
			11.12 / 9.30		CORE LOSS
	24-09-20		10.50 / 9.78		SILTSTONE
					CORE LOSS
NMLC	100% Water RETURN	10	10.02 / 11.52		SILTSTONE
			11.90		CORE LOSS
			12.26		SILTSTONE
			12.50		SILTSTONE/BRECCIA
			7.13 / 13.50		CORE LOSS
					SILTSTONE
			13.74		CORE LOSS
			6.06 / 14.60		SILTSTONE
			15.00		CORE LOSS
		15	15.45		SILTSTONE
			4.35		END OF BOREHOLE @ 15.45 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ 9.30 m DEPTH STANDPIPE INSTALLED
		20			



PRELIMINARY

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-04

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327564.6 m E 5810335.3 m N MGA94 55	DRILL RIG: Comacchio Geo 305
PROJECT:	Public Housing Renewal Project	SURFACE RL: 14.2 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 1-9-20
JOB NO:	20145767	HOLE DEPTH: 15.35 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	14.20	GA20-BH04/2001 DS 0.00-0.10 m PID=0.1 R = 2A			CI	Gravelly Sandy CLAY medium plasticity, brown, fine to coarse grained sand, fine to coarse grained, sub-rounded to sub-angular gravel, trace wood, glass, brick fragments	w < PL	F - St	FILL??
				0.30 / 13.90	GA20-BH04/2002 DS 0.40-0.50 m PID=0.0 R = 0A			CI	Sandy CLAY medium - high plasticity, pale grey with pale brown, fine to medium grained sand			
			1	1.00 / 13.20	GA20-BH04/2003 DS 0.90-1.00 m PID=0.2 R = 0A			CI-CH	Sandy CLAY medium plasticity, brown, fine to coarse grained sand, trace fine grained gravel, trace roots	w < PL - w ~ PL		
WB				1.50 / 12.70	GA20-BH04/2004 DS 1.40-1.50 m PID=0.0 R = 0A GA20-BH04-001 U63 1.50-1.90 m PP = 450-530 kPa			CH	CLAY high plasticity, orange and pale grey		VSt - H	
			2									
			3	3.00 / 11.20	GA20-BH04-002 SPT 3.00-3.45 m 2, 4, 9 N=13				orange and pale grey with grey	w < PL		
				3.30 / 10.90					trace fine to medium grained, sub-rounded to sub-angular gravel, trace fine to coarse grained sand		St	
			4		GA20-BH04-003 SPT 3.80-4.25 m 6, 8, 16 N=24						VSt	
				4.50	GA20-BH04-004 SPT 4.50-4.60 m 10/100mm HB N=R				SILTSTONE orange and pale grey, extremely weathered siltstone		H - Fb	
			5						For Continuation Refer to Sheet 2			
			6									
			7									
			8									
			9									
			10									

PRELIMINARY

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-04

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327564.6 m E 5810335.3 m N MGA94 55	DRILL RIG: Comacchio Geo 305
PROJECT:	Public Housing Renewal Project	SURFACE RL: 14.2 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 1-9-20
JOB NO:	20145767	HOLE DEPTH: 15.35 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2								
				3								
				4	4.60		Continuation of Sheet 1					
NMLC	100% Water RETURN	120	0 (100)	5	9.60		SILTSTONE orange with pale grey	HW			4.70 m: IS, CLAY, <10 mm 4.70-4.90 m: J, 90°, Pl-Un, Sm, CLAY Ct, <2 mm 4.70 m: IS, CLAY, <10 mm 4.70-4.90 m: J, 90°, Pl-Un, Sm, CLAY Ct, <2 mm 4.91 m: IS, CLAY, SAND, <30 mm 4.95-5.40 m: Jmultiple, 0-90°, sp = 0-50 mm, Pl-Un, Sm, CLAY Ct, <5 mm 5.20-5.33 m: JX3, 0°, sp = 60-70 mm, Un, Sm, CLAY Ve-Ct, <10 mm 5.40-5.75 m: IS, CLAY, SAND, fine GRAVEL, <350 mm 5.86 m: IS, CLAY, SAND, <60 mm 6.23-6.33 m: JX2, 0-10°, sp = 90-100 mm, Pl, Sm, FeO, CLAY Sn-Ct	
		100	55 (85)	6	6.50			HW - MW				
					7.70		orange brown	MW			6.90-6.95 m: JX2, 10-20°, sp = 40-60 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve, disturbed by drilling 7.20-7.91 m: JX3, 0-10°, sp = 350 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve	
		100	70 (100)	7								
				8	8.00 6.20		pale brown				7.94-8.00 m: CS, SAND, fine GRAVEL, <60 mm 8.00-8.10 m: J, 90°, Pl, Sm, FeO Sn 8.28-8.31 m: EWS, SAND, <30 mm	
		100	50 (100)	9				MW - SW			8.83 m: J, 0-10°, Un, Sm-Ro, FeO, SAND Sn-Ct, <5 mm 9.10 m: JX2, 0-60°, sp = 0-50 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve 9.19-9.28 m: Jmultiple, 0-90°, sp = 0-20 mm, Pl, Sm, FeO Sn	
		100	85 (100)	10								

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-04

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327564.6 m E 5810335.3 m N MGA94 55	DRILL RIG: Comacchio Geo 305
PROJECT:	Public Housing Renewal Project	SURFACE RL: 14.2 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 1-9-20
JOB NO:	20145767	HOLE DEPTH: 15.35 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
NMLC	100% Water RETURN	100	85 (100)	10			SILTSTONE orange with pale grey	MW - SW			9.93 m: J, 0°, Un, Sm, FeO Sn 9.97 m: J, 0°, Pl-Un, Sm, SAND Ct, <10 mm 10.25-10.40 m: JX2, 0°, sp = 150 mm, Pl-Un, Sm, FeO Sn	
		100	70 (100)	11	11.50 2.70		pale grey brown				10.94 m: J, 0°, Un, Sm, CLAY Ve 11.40-11.60 m: JX4, 0-5°, sp = 20-130 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve 11.60-11.74 m: J, 60-70°, Pl-St, Sm, FeO, SAND, CLAY Sn-Ct	
		100	85 (100)	12				MW - SW			12.22 m: J, 0°, Pl, Sm, FeO, CLAY Sn-Ve 12.40 m: DB	
				13	12.85 1.35		brown grey with brown				12.91-12.96 m: JX2, 20-30°, sp = 40 mm, Pl, Sm, FeO, SAND Sn-Ct 13.34-13.40 m: JX3, 0-10°, sp = 10-30 mm, Pl, Sm, FeO, CLAY Sn-Ve	
		100	70 (100)	14	14.20 0.00		dark grey				14.27-14.59 m: JX2, 10°, sp = 320 mm, Pl, Sm, FeO, CLAY Sn-Ve	
				15	15.35 -1.15		END OF BOREHOLE @ 15.35 m TARGET DEPTH GROUNDWATER NOT OBSERVED BACKFILLED				15.05 m: J, 0°, Pl, Sm-Ro, FeO, GRAVEL Sn-Ct, <20 mm 15.10-15.24 m: J, 70°, Pl, Sm, FeO, CLAY Sn-Ve	
				16								
				17								
				18								
				19								
				20								

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-05

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327597.8 m E 5810320.3 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 15.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 7-9-20
JOB NO:	20145767	HOLE DEPTH: 15.52 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	15.00	GA20-BH-HAW-05/2001 DS 0.00-0.10 m PID=0.1 R = 1A			CI	Sandy CLAY medium plasticity, brown, fine to coarse grained sand, with fine to coarse grained, sub-angular to angular gravel	w < PL		
				0.50 / 14.50	GA20-BH-HAW-05/2002 DS 0.40-0.50 m PID=0.0 R = 1A			CI	Clayey SAND fine - medium grained, medium plasticity, brown, medium plactisity clay	w ~ PL		
			1	1.00 / 14.00	GA20-BH-HAW-05/2003 DS 0.90-1.00 m PID=0.2 R = 0A			CI-CH	CLAY medium - high plasticity, orange, red, grey, with fine to coarse grained sand, trace fine grained, sub-angular gravel, trace wood fragments		F - St	
				1.50 / 13.50	GA20-BH05-001 SPT 1.00-1.45 m 2, 3, 5 N=8 GA20-BH-HAW-05/2004 DS 1.40-1.50 m PID=0.0 R = 0A			CH	CLAY high plasticity, orange and grey, trace fine grained sand	w < PL		
WB		100% Water RETURN	2	2.80 / 12.20	GA20-BH05-002 SPT 2.50-2.95 m 4, 5, 8 N=13			CH	Gravelly CLAY high plasticity, grey and orange and white, fine to medium grained, sub-angular gravel		St	
			3	4.00 / 11.00	GA20-BH05-003 SPT 4.00-4.20 m 15, 5/50mm HB N>5				SILTSTONE orange with yellow and pale grey, residual soil to extremely weathered siltstone		H - Fb	
			4						For Continuation Refer to Sheet 2			
			5									
			6									
			7									
			8									
			9									
			10									

PRELIMINARY

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-05

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327597.8 m E 5810320.3 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 15.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 7-9-20
JOB NO:	20145767	HOLE DEPTH: 15.52 m	CHECKED: DATE:

Drilling

METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL
NMLC	100% Water RETURN (24-09-20)	60	0 (25)	0–5	4.73
		80	0 (20)	5–6	5.45
		45	0 (10)	6–7	6.20
		100	0 (45)	7–8	7.10
		100	0 (100)	8–9	7.85
		115	5 (115)	9–10	9.85

Field Material Description

GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)
	Continuation of Sheet 1			
	SILTSTONE orange and brown	XW - HW		
	CORE LOSS			
	SILTSTONE orange and brown			
	CORE LOSS			
	SILTSTONE orange and pale grey with brown			
	CORE LOSS			
	SILTSTONE orange and brown			
	pale grey			
	orange with brown	HW - MW		
	pale orange grey	MW		

Defect Information

DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
4.73-4.83 m: EWS, CLAY, SAND, GRAVEL, <100 mm	
4.83-5.00 m: Jmultiple, 0-90°, sp = 0-20 mm, Sm-Ro, FeO Sn, disturbed by drilling	
5.45-5.55 m: CS, CLAY, GRAVEL, <100 mm, disturbed by drilling	
5.60 m: J, 20°, Pl, Sm-Ro, FeO, SAND Sn-Ct	
5.64 m: JX2, 10-30°, sp = 0-20 mm, Pl, Sm-Ro, CLAY, SAND, GRAVEL Ct, <3 mm	
5.69-5.77 m: EWS, CLAY, GRAVEL, <80 mm	
5.80 m: J, 0-60°, St, Sm-Ro, FeO, CLAY Sn-Ve	
5.88-5.98 m: JX3, 0°, sp = 40-80 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve	
5.90 m: J, 0°, Pl, Sm-Ro, FeO, CLAY, SAND Sn-Ct, <10 mm	
6.00-6.05 m: Jmultiple, 10-80°, sp = 0-40 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve	
6.05-6.10 m: EWS, CLAY, GRAVEL, <50 mm	
6.20-6.43 m: Jmultiple, 0-90°, sp = 0-30 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve, disturbed by drilling	
6.20-6.50 m: IS, CLAY, <300 mm	
6.20-6.43 m: Jmultiple, 0-90°, sp = 0-30 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve, disturbed by drilling	
6.50-6.60 m: Jmultiple, 0-90°, sp = 0-30 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve, disturbed by drilling	
7.13-7.15 m: JX2, 0-10°, sp = 20-40 mm, Pl, Sm-Ro, FeO Sn	
7.20-7.85 m: IS, CLAY, SAND, GRAVEL	
7.90-7.94 m: JX2, 45°, sp = 40 mm, Pl-Un, Sm-Ro, FeO, SAND, GRAVEL Sn-Ct	
7.94-7.98 m: J, 70°, Pl-Un, Sm, CLAY Ve	
8.00-8.05 m: EWS, CLAY, <50 mm	
8.05-8.22 m: J, 75°, Pl-Un, Sm, SAND Ct, <5 mm	
8.27 m: DB	
8.30-9.10 m: Jmultiple, 0-60°, sp = 0-100 mm, Pl, Sm-Ro, FeO, SAND Sn-Ct	

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-05

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327597.8 m E 5810320.3 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 15.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 7-9-20
JOB NO:	20145767	HOLE DEPTH: 15.52 m	CHECKED: DATE:

Drilling

METHOD	WATER	TCR	RQD (SCR)
NMLC	100% Water RETURN	115	5 (115)
		100	45 (100)
		100	30 (100)
		100	0 (100)
		100	10 (100)

Field Material Description

DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)
10			SILTSTONE orange and brown	MW		
11	11.15 3.85		pale grey with brown	HW - MW		
12	12.75 2.25		pale brown with brown and pale grey			
13						
14						
15	15.00 0.00		brown with grey brown	MW		
	15.52 -0.52		END OF BOREHOLE @ 15.52 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ 8.60 m DEPTH STANDPIPE INSTALLED			
16						
17						
18						
19						
20						

Defect Information

DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
8.45-9.11 m: J, 85°, Pl, Sm, CLAY Ve 9.10-9.85 m: J, 85°, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve 9.33-9.80 m: Jmultiple, 0-60°, Pl-Un, Sm-Ro, FeO, CLAY, SAND Sn-Ct 9.80-10.18 m: J, 85°, Pl-Un, Sm, Cn, partially closed joint 9.85 m: J, 0°, Un, Sm, CLAY Ve 10.00-10.63 m: J, 85°, Pl, Sm, CLAY Ve-Ct 10.15-10.50 m: JX3, 0-10°, Pl-Un, Sm, CLAY, SAND Ve-Ct 10.71-11.05 m: DB 11.16-11.76 m: J, 85-90°, Pl-Un, Sm, FeO, CLAY Sn-Ve 11.18-11.68 m: JX5, 0-5°, sp = 100-150 mm, Pl-St, Sm, CLAY Ve 11.94 m: J, 0°, Pl-Un, Sm, CLAY Ve 12.10 m: J, 30°, Pl, Sm-Ro, FeO Sn 12.13-12.22 m: J, 90°, Un, Sm, CLAY Ve 12.37-12.75 m: JX4, 0-5°, sp = 50-140 mm, Pl-Un, Sm, CLAY Ve 12.81-13.30 m: Jmultiple, 0-90°, sp = 0-10 mm, Pl-St, Ro, FeO Cn-Sn 13.60 m: J, 0°, Un, Sm-Ro, FeO, CLAY Sn-Ve 13.75-14.65 m: JX2, 85-90°, sp = 0-50 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve 14.60-14.67 m: CS, disturbed by drilling 14.80-14.86 m: JX4, 0-90°, sp = 0-20 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve 15.03-15.50 m: Jmultiple, 0-90°, sp = 0-30 mm, Pl-Un, Sm-Ro, FeO Cn-Sn	

PRELIMINARY

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PRELIMINARY REPORT OF STANDPIPE INSTALLATION: GA20-BH-HAW-05

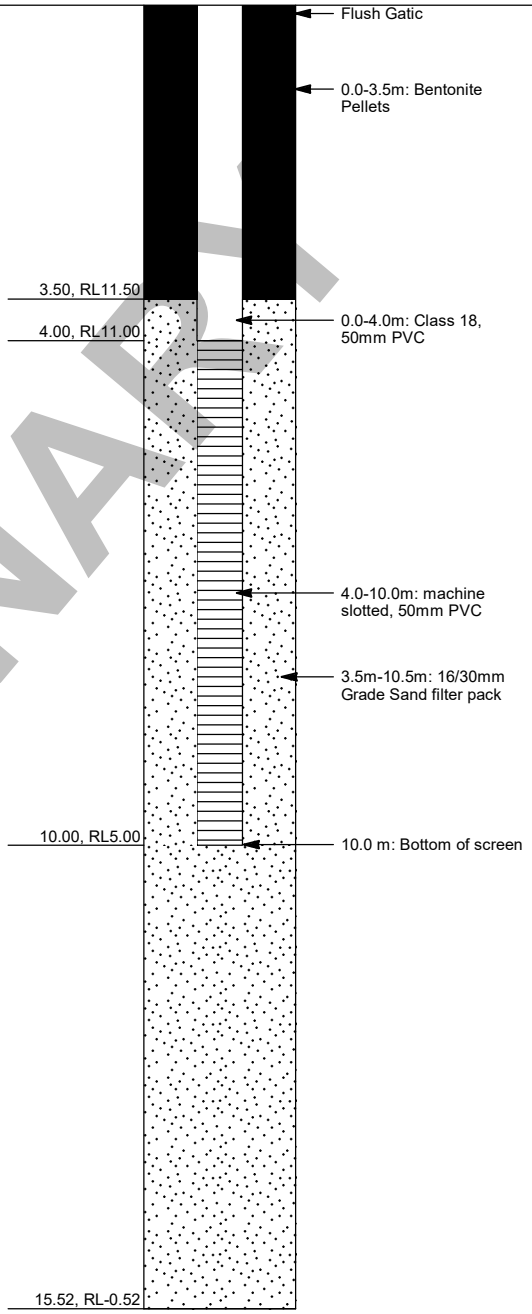
GOLDER

SHEET: 1 OF 1

CLIENT:	Department of Health and Human Services	COORDS: 327597.8 m E 5810320.3 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 15.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 7-9-20
JOB NO:	20145767	HOLE DEPTH: 15.52 m	CHECKED: DATE:

Drilling | **Field Material Description** | **Instrumentation Details**

METHOD	WATER	DEPTH (metres)	DEPTH RL	SOIL/ROCK MATERIAL DESCRIPTION
ADT		0	15.00	SANDY CLAY
			0.50	
			14.50	CLAYEY SAND
			1.00	
			14.00	CLAY
			1.50	
			13.50	CLAY
		2		
			2.80	
WB	100% Water RETURN		12.20	GRAVELLY CLAY
			4.00	
		4	11.00	SILTSTONE
			4.73	
NMLC			5.00	SILTSTONE
			10.00	CORE LOSS
			5.45	
			9.55	SILTSTONE
		6	6.10	
			8.80	CORE LOSS
			6.60	SILTSTONE
			8.40	CORE LOSS
			7.10	
			7.90	SILTSTONE
			7.80	
			7.85	
		8	7.15	
	100% Water RETURN 24-09-20		9.85	
		10	5.15	
			11.15	
			3.85	
NMLC		12		
			12.75	
			2.25	
		14		
			15.00	
			0.00	
			15.52	
			-0.52	END OF BOREHOLE @ 15.52 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ 8.60 m DEPTH STANDPIPE INSTALLED
		16		
		18		



PRELIMINARY

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-06

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327626.0 m E 5810324.7 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 17.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 16-9-20
JOB NO:	20145767	HOLE DEPTH: 13.60 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	17.00	GA20-BH-HAW-06/200 DS 0.00-0.10 m PID=0.0 R = 1A				Sandy Gravelly CLAY medium plasticity, brown, fine to coarse grained, sub-angular to angular gravel, fine to coarse grained sand			
				0.30 / 16.70	GA20-BH-HAW-06/2002 DS 0.40-0.50 m PID=0.0 R = 0A				CLAY high plasticity, orange and grey, trace fine to medium grained sand		F - St	
			1	1.00 / 16.00	GA20-BH-HAW-06/200 DS 0.90-1.00 m PID=0.0 R = 0A				orange and pale grey, trace fine grained, sub-rounded to sub-angular gravel			
				1.50 / 15.50	GA20-BH-HAW-06/200 DS 1.40-1.50 m PID=0.0 R = 0A				orange and pale grey with red, trace fine to medium grained, sub-angular to angular gravel	w < PL		
			2	2.00 / 15.00	GA20-BH06-001 SPT 1.50-1.95 m 3, 7, 10 N=17				orange and pale grey, trace fine to coarse grained, sub-angular to angular gravel		VSt	
				2.30 / 14.70					pale grey			
			3	3.00 / 14.00	GA20-BH06-002 SPT 3.00-3.43 m 8, 15, 16/130mm HB N>31				SILTSTONE pale grey, residual soil to extremely weathered siltstone			
			4						For Continuation Refer to Sheet 2			
			5									
			6									
			7									
			8									
			9									
			10									

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-06

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327626.0 m E 5810324.7 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 17.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 16-9-20
JOB NO:	20145767	HOLE DEPTH: 13.60 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2								
				3								
					3.50		Continuation of Sheet 1					
NMLC		100	0 (50)	4	13.50 / 3.72		SILTSTONE pale grey	XW			3.70-3.75 m: CS, GRAVEL, <50 mm	
		100	0 (65)		13.28 / 4.30		pale brown with pale grey and brown, Iron oxide	HW - MW			3.75-3.87 m: J, 80°, Pl, Sm-Ro, FeO, GRAVEL Sn-Ct 3.75-3.90 m: JX5, 30°, sp = 10-50 mm, Pl, Sm-Ro, FeO Sn	
		30	0 (15)	5	12.70 / 5.20		CORE LOSS				3.75-3.87 m: J, 80°, Pl, Sm-Ro, FeO, GRAVEL Sn-Ct 3.75-3.90 m: JX5, 30°, sp = 10-50 mm, Pl, Sm-Ro, FeO Sn 3.82-3.95 m: J, 80°, Pl, Sm-Ro, FeO Sn 4.05-4.15 m: IS, soft CLAY, <100 mm 4.16-4.30 m: CS, <150 mm, disturbed by drilling	
					11.80 / 5.60		SILTSTONE pale brown with pale grey and orange, Iron oxide	HW - MW			5.20-5.35 m: CS, GRAVEL, <150 mm, disturbed by drilling 5.35-5.40 m: IS, CLAY, <50 mm	
		35	0 (0)	6	11.40 / 6.00		CORE LOSS				5.40-5.53 m: J, 80°, Pl, Sm-Ro, FeO Sn 5.41-5.53 m: Jmultiple, 0-45°, sp = 0-20 mm, Pl, Sm-Ro, FeO, SAND Sn-Ct 5.53-5.60 m: CS, <70 mm, disturbed by drilling	
					11.00 / 6.20		SILTSTONE pale brown with pale grey and orange, recovered as fine to coarse grained, sub-angular to angular GRAVEL with CLAY					
		20	0 (0)		10.80 / 6.60		CORE LOSS					
					6.70		SILTSTONE pale brown with brown, recovered as medium to coarse grained, sub-angular GRAVEL	HW				
		100	30 (100)	7	10.30 / 7.20		SILTSTONE pale brown with brown and pale grey, Iron oxide				6.93 m: J, 30°, Pl-Un, Sm, CLAY Ve 7.03 m: J, 0°, Un, Sm-Ro, FeO, SAND, GRAVEL Sn-Ct, <20 mm, drilling induced opening	
		0	0 (0)		9.80 / 7.75		CORE LOSS				7.15 m: J, 0°, Un, Sm-Ro, FeO, SAND, GRAVEL Sn-Ct	
		100	0 (100)	8	9.25 / 8.82		SILTSTONE brown orange with brown and pale grey, Iron oxide	HW			7.75-7.80 m: J, 60°, Pl-Un, Sm, CLAY, SAND Ve-Ct 7.92 m: J, 0°, Un, Sm, FeO, SAND Sn-Ct	
		100	0 (90)								8.30-8.38 m: JX2, 0°, sp = 80 mm, Un 8.56 m: J, 0°, Un, Sm, GRAVEL Ct, <10 mm	
					8.18 / 9.08		CORE LOSS	HW - MW			8.63 m: J, 0°, Un, Sm-Ro, FeO, GRAVEL Sn-Ct, <30 mm, drill;ing induced opening	
		60	15 (35)	9	7.92		SILTSTONE brown orange with brown	HW - MW			8.66-8.70 m: JX2, 40-50°, sp = 20-40 mm, Pl, Sm-Ro, FeO Sn 8.76-8.82 m: EWS, CLAY, <50 mm 9.26 m: J, 45°, Un, Sm, CLAY Cn-Ve 9.34-9.46 m: EWS, CLAY, GRAVEL, <120 mm	
		100	20 (100)	10							9.50-9.84 m: JX5, 0-45°, sp = 0-150 mm, Pl-Un, Sm-Ro, FeO, SAND Sn-Ct 9.90-10.20 m: J, 85-90°, Pl, Sm, CLAY Ve	

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-06

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327626.0 m E 5810324.7 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 17.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 16-9-20
JOB NO:	20145767	HOLE DEPTH: 13.60 m	CHECKED: DATE:

Drilling

METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL
NMLC		100		10	
		100	30 (85)	11	11.25
		40	0 (20)		5.75 / 11.79
		100	20 (80)	12	5.21
		75	0 (35)	13	13.00
		100	0 (30)		13.15 / 3.85 / 13.60
				14	3.40
				15	
				16	
				17	
				18	
				19	
				20	

Field Material Description

GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)
	SILTSTONE brown orange with brown	HW		
		HW - MW		
	CORE LOSS			
	SILTSTONE brown orange with brown	HW - MW		
	CORE LOSS			
	SILTSTONE brown orange with brown	HW - MW		
	END OF BOREHOLE @ 13.60 m TARGET DEPTH GROUNDWATER NOT OBSERVED BACKFILLED	XW - HW		

Defect Information

DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
10.00-10.24 m: JX4, 0°, sp = 30-100 mm	
10.34 m: J, 20°, Pl-Un, Sm, CLAY Ve	
10.53 m: J, 45°, Un, Sm, CLAY Ve	
10.70-11.20 m: Jmultiple, 0-90°, sp = 0-70 mm, Pl-Un, Sm-Ro, FeO, CLAY, SAND Sn-Ct	
11.20-11.25 m: EWS, CLAY, SAND, <50 mm	
11.80-11.87 m: CS, disturbed by drilling	
11.85-11.95 m: J, 80°, Pl, Sm-Ro, FeO, SAND Sn-Ct	
12.00-12.15 m: CS, disturbed by drilling	
12.20-12.23 m: J, 70°, Un, Sm-Ro, SAND, GRAVEL Ct	
12.36-12.44 m: EWS, SAND, GRAVEL, <80 mm	
12.52 m: J, 0°, St, Sm-Ro, FeO Sn	
12.60-12.75 m: CS, <150 mm, disturbed by drilling	
12.70-12.80 m: J, 85°, Pl-Un, Sm-Ro, CLAY, SAND Ve-Ct	
12.77-13.00 m: Jmultiple, 0-70°, sp = 0-30 mm, Pl, Sm-Ro, FeO Sn	
12.80-12.90 m: J, 80°, Pl, Sm-Ro, SAND, CLAY Ct, <50 mm	
13.15-13.20 m: CS, disturbed by drilling	
13.20-13.30 m: J, 90°, Pl, Sm-Ro, SAND, CLAY Ct, <10 mm	

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-07

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327564.3 m E 5810308.8 m N MGA94 55	DRILL RIG: Comacchio Geo 305
PROJECT:	Public Housing Renewal Project	SURFACE RL: 12.4 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 31-8-20
JOB NO:	20145767	HOLE DEPTH: 14.70 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	12.40	GA20-BH07/2001 DS 0.00-0.10 m PID=0.0			CI	FILL: CLAY medium plasticity, brown, with fine to coarse grained sand, trace fine to medium grained, sub-rounded to sub-angular gravel, grass	w < PL		
				0.20 / 12.20				CI				
				0.50 / 11.90	GA20-BH07/2002 DS 0.40-0.50 m PID=0.0 R = 0A			CH	Sandy CLAY medium plasticity, brown, fine grained sand		F - St	
			1	1.00 / 11.40	GA20-BH07/2003 DS 0.90-1.00 m PID=0.0 R = 0A			CH	Sandy CLAY high plasticity, pale brown with orange, fine grained sand	w < PL - w ~ PL		
									CLAY high plasticity, orange and pale grey, trace fine grained sand			
WB		100% Water RETURN		1.50 / 10.90	GA20-BH07/2004 DS 1.40-1.50 m PID=0.0 R = 0A				orange and pale grey			
			2		GA20-BH07-001 U63 1.50-1.90 m PP = 400-450 kPa						VSt	
			3		GA20-BH07-002 SPT 2.70-3.15 m 3, 4, 6 N=10					w < PL		
					PP = 350->600 kPa						St	
			4	4.00 / 8.40	GA20-BH07-003 SPT 4.00-4.35 m 5, 10, 7/50mm HB N>17							
				4.30					SILTSTONE orange and pale grey, extremely weathered siltstone			
									For Continuation Refer to Sheet 2			
			5									
			6									
			7									
			8									
			9									
			10									

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-07

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327564.3 m E 5810308.8 m N MGA94 55	DRILL RIG: Comacchio Geo 305
PROJECT:	Public Housing Renewal Project	SURFACE RL: 12.4 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 31-8-20
JOB NO:	20145767	HOLE DEPTH: 14.70 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2								
				3								
				4	4.35		Continuation of Sheet 1					
NMLC	100% Water RETURN	100	0 (0)	5	8.05		SILTSTONE orange with pale grey	XW				
		100	0 (0)		5.40			XW - HW				
		100	75 (100)	6	7.00		orange brown	HW			5.55 m: DB 5.90 m: J, 10-15°, Un, Sm-Ro, FeO, SAND Sn-Ct, <3 mm 6.04 m: J, 0° 6.46-6.54 m: J, 60-70°, Pl, Sm, FeO, CLAY Sn-Ve 6.54 m: J, 0°, Pl, probably induced by drilling	
		100	65 (95)	7							7.33 m: J, 0°, Pl, Sm, hard CLAY Ct, <5 mm 7.34-7.42 m: Jmutiple, 80-90°, Pl, Sm, Cn, probably induced by drilling 7.54-7.57 m: IS, CLAY, <30 mm 7.58-7.65 m: IS, CLAY, <70 mm 7.93 m: J, 0-10°, Pl-Un, Sm, FeO Sn	
		100	35 (100)	8				HW - MW			8.33 m: J, 5°, Pl-Un, Sm, FeO Sn 8.35-8.44 m: J, 90°, Un, Sm-Ro, FeO Sn 8.44-8.80 m: JX5, 0-10°, sp = 50-110 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve 8.76 m: J, 20°, Pl, Sm-Ro, FeO Sn 8.81-8.96 m: JX3, 0-20°, sp = 60-80 mm, Pl-St, Sm, CLAY Ve, probably induced by drilling 9.03-9.58 m: JX2, 10°, sp = 550 mm, Pl, Sm, CLAY Ve 9.65-10.00 m: J, 80°, Pl, Sm, CLAY Ve	
				9								
				10								

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-07

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327564.3 m E 5810308.8 m N MGA94 55	DRILL RIG: Comacchio Geo 305
PROJECT:	Public Housing Renewal Project	SURFACE RL: 12.4 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 31-8-20
JOB NO:	20145767	HOLE DEPTH: 14.70 m	CHECKED: DATE:

Drilling

METHOD	WATER	TCR	RQD (SCR)
NMLC	100% Water RETURN	100	45 (85)
		100	25 (75)
		100	45 (100)
		100	55 (100)

Field Material Description

DEPTH (metres)	DEPTH RL	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING
10	10.10 / 2.30	SILTSTONE orange with pale grey beddings dip 10 degrees	HW
11			HW - MW
			MW
12	12.85 / -0.45	grey and pale brown	MW - SW
13			
14	14.20 / -1.80	grey	SW
	14.70 / -2.30	END OF BOREHOLE @ 14.70 m TARGET DEPTH GROUNDWATER NOT OBSERVED BACKFILLED	
15			
16			
17			
18			
19			
20			

INFERRED STRENGTH UCS MPa: VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200

LABORATORY STRENGTH (MPa)

Defect Information

DEFECT DESCRIPTION & Additional Observations

10.09 m: DB
10.24-10.33 m: EWS, CLAY, GRAVEL, <100 mm
10.42-10.45 m: JX2, 0-10°, Pl-St, Sm, FeO Cn-Ve
10.53-10.62 m: EWS, CLAY, <100 mm
10.84 m: J, 10°, Un, Sm-Ro, SAND, GRAVEL Ct
11.03-11.06 m: P, 10-20°, Pl, Sm, FeO, SAND Sn-Ct
11.09-11.15 m: EWS, CLAY, <60 mm
11.41 m: J, 10°, Pl, Sm, FeO Sn
11.58-11.78 m: PX3, 10-20°, Pl, Sm-Ro, FeO, CLAY Sn-Ve
11.90-12.00 m: EWS, CLAY, SAND, <100 mm
12.04 m: J, 0°, Un, Sm, FeO Sn
12.27 m: J, 0-10°, Pl-Un, Sm, FeO, CLAY Sn-Ve
12.28-12.38 m: J, 70°, Pl, Sm, FeO, CLAY, SAND Sn-Ct
12.55-12.76 m: JX4, 10°, Pl-Un, Sm, FeO Cn-Sn
13.13 m: J, 0°, Un, Sm, FeO Sn
13.37 m: J, 0-10°, Pl-Un, Sm, CLAY Ve
13.48 m: J, 0-10°, Pl-Un, Sm, FeO Sn
13.93-13.97 m
14.06-14.09 m: JX2, 10°, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve
14.25-14.29 m: JX2, 0-5°, Pl, Sm, Cn
14.40 m: J, 0-30°, St, Sm, CLAY Ve
14.50-14.63 m: JX2, 0°, Pl, Sm, Cn

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-08

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327602.9 m E 5810301.0 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 14.1 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 9-9-20
JOB NO:	20145767	HOLE DEPTH: 14.20 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	14.10	GA20-BH-HAW-08/200 DS 0.00-0.10 m PID=0.1 R = 1A GA20-BH-HAW-08/2002 DS 0.40-0.50 m PID=0.4 R = 1A				Sandy CLAY medium plasticity, brown, fine to coarse grained sand, with fine to coarse grained, sub-angular to angualr gravel, trace, glass, wood fragments		F - St	
				0.90								
			1	13.20	GA20-BH-HAW-08/200 DS 0.90-1.00 m PID=0.0 R = 0A				CLAY		S	
				1.50	GA20-BH-HAW-08/200							
				12.60	DS 1.40-1.50 m PID=0.0 R = 0A GA20-BH08-001 SPT 1.50-1.95 m HW/150mm, 2, 5 N=7				CLAY high plasticity, yellow, pale grey	w < PL	St	
			2									
				3.00								
WB		100% Water RETURN	3	13.10	GA20-BH08-002 SPT 3.00-3.45 m 4, 6, 9 N=15				CLAY high plasticity, pale grey, yellow with red, trace fine grained sand, trace fine to coarse grained, sub-rounded to sub-angular gravel			
				11.00								
				3.40								
				10.70					pale grey			
				3.80					with fine to medium grained sand			
				10.30	GA20-BH08-003 SPT 3.80-4.12 m 11, 18, 5/20mm HB N>23				SILTSTONE pale grey, residual soil to extremely weathered siltstone		H - Fb	
NMLC			4									
			5									
									For Continuation Refer to Sheet 2			
			6									
			7									
			8									
			9									
			10									

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-08

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327602.9 m E 5810301.0 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 14.1 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 9-9-20
JOB NO:	20145767	HOLE DEPTH: 14.20 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2								
				3								
				4								
				5	5.18		Continuation of Sheet 1					
NMLC	100% Water RETURN	100	0 (30)		8.92		SILTSTONE pale brown	XW			5.45-5.50 m: DB	
		100	0 (100)		5.85			HW			5.50-5.85 m: J, 90°, Pl, Sm, CLAY Ve 5.58 m: J, 0°, Un, Sm, SAND Ct 5.64-5.82 m: JX5, 0-5°, Pl-Un, Sm, CLAY, SAND Ve-Ct	
		60	0 (45)	6	6.00		CORE LOSS					
		100	0 (125)		8.10		SILTSTONE brown with pale grey	HW - MW			5.82-5.85 m: CS, <30 mm, disturbed by drilling 6.00-6.04 m: CS, GRAVEL, <40 mm, disturbed by drilling 6.04-6.20 m: JX7, 0-30°, sp = 0-20 mm, Pl, Sm, FeO, CLAY Sn-Ve	
		100	65 (100)	7	6.70 7.40		pale brown	HW			6.20-6.65 m: Jmultiple, 0-90°, sp = 0-20 mm, Pl-Un, Sm, FeO, CLAY, SAND Sn-Ct 6.85 m: J, 0°, Un, Sm, CLAY Ve 7.05-7.14 m: DB, <90 mm	
		100	35 (100)	8							7.50 m: DB 7.84 m: J, 0°, Un, Sm, CLAY Ve 7.90-8.00 m: J, 60°, Pl, Sm, CLAY Ve 8.06 m: J, 0°, Pl-Un, Sm, CLAY Ve 8.06-8.18 m: J, 60°, Pl, Sm, CLAY, SAND Ve-Ct 8.06 m: J, 0°, Pl-Un, Sm, CLAY Ve 8.06-8.18 m: J, 60°, Pl, Sm, CLAY, SAND Ve-Ct 8.15-8.30 m: J, 85°, Pl, Sm, FeO, CLAY Sn-Ve, disturbed by drilling	
		100	20 (100)	9				HW - MW			8.23 m: J, 0°, Pl-Un, Sm, CLAY Ve 8.30-8.33 m: JX2, 0-40°, sp = 0-30 mm, Pl, Sm, CLAY Ve 8.45 m: J, 40°, Pl, Sm, FeO Sn 8.62-8.92 m: JX4, 0-50°, sp = 60-130 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve 9.04-9.09 m: JX2, 0-70°, sp = 0-50 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve, disturbed by drilling	
				10								

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-08

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327602.9 m E 5810301.0 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 14.1 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 9-9-20
JOB NO:	20145767	HOLE DEPTH: 14.20 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
NMLC	100% Water RETURN	100	45 (100)	10			SILTSTONE brown with pale grey	MW - SW			9.11 m: J, 0°, Pl-St, Sm, Cn 9.20-9.34 m: JX4, 0-10°, sp = -30-70 mm, Pl, Sm-Ro, FeO, SAND, CLAY Sn-Ct 9.20-9.50 m: J, 90°, Pl, Sm, FeO, CLAY Sn-Ve 9.20-9.34 m: JX4, 0-10°, sp = -30-70 mm, Pl, Sm-Ro, FeO, SAND, CLAY Sn-Ct 9.20-9.50 m: J, 90°, Pl, Sm, FeO, CLAY Sn-Ve 9.40-9.45 m: JX2, 0-70°, sp = 0-50 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve, disturbed by drilling 9.48 m: J, 5°, Pl, Sm, FeO, CLAY Sn-Ve 9.70-9.95 m: JX2, 0-20°, sp = 250 mm, Pl-St, Sm, CLAY Ve 10.10-10.53 m: JX4, 25°, sp = 50-250 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve 10.75-10.79 m: JX3, 0-70°, sp = 0-50 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve, disturbed by drilling 10.87 m: J, 0°, Pl, Sm, FeO, CLAY Sn-Ve 11.06-11.33 m: JX3, 0-20°, sp = 70-200 mm, Pl, Sm, CLAY Ve 11.26 m: J, 0°, Pl, Sm, GRAVEL Ct, <10 mm 11.54-11.92 m: JX6, 0-20°, sp = 40-90 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve 12.10 m: JX2, 0°, sp = 10 mm, Pl, Sm, FeO, CLAY Sn-Ve 12.28-12.30 m: JX2, 0°, sp = 20 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve 12.48-12.59 m: JX2, 0°, sp = 110 mm, St, Sm, Cn 12.80 m: J, 5°, Pl-Un, Sm, CLAY Ve 13.04 m: J, 0°, Pl, Sm, CLAY Ve 13.25-13.72 m: JX7, 0-10°, sp = 50-200 mm, Pl, Sm, CLAY Ve 13.85-14.20 m: FZ, <350 mm	
		100	45 (100)	11								
		100	45 (100)	12								
		100	30 (100)	13	13.00 1.10		brown grey					
				14	13.85 0.25		brown					
					14.20 -0.10		END OF BOREHOLE @ 14.20 m TARGET DEPTH GROUNDWATER NOT OBSERVED BACKFILLED					
				15								
				16								
				17								
				18								
				19								
				20								

PRELIMINARY

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-09

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327635.2 m E 5810298.2 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 16.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 4-9-20
JOB NO:	20145767	HOLE DEPTH: 16.85 m	CHECKED: DATE:

Drilling | **Sampling** | **Field Material Description**

METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	16.00	GA20-BH09/2001 DS 0.00-0.10 m PID=0.0 R = 1A GA20-BH09/2002 DS 0.40-0.50 m PID=0.1 R = 1A			CI	Sandy CLAY medium plasticity, brown, fine to coarse grained sand, with fine to coarse grained, sub-angular to angular gravel, trace roots, glass, wood fragments	w < PL w < PL - w ~ PL	F - St	
				0.80								
			1	15.20	GA20-BH09/2003 DS 0.90-1.00 m PID=0.0 R = 0A			CH	CLAY high plasticity, grey with orange			
				1.40								
				14.60	GA20-BH09-001 SPT 1.00-1.45 m 3, 4, 6 N=10 GA20-BH09/2004 DS 1.40-1.50 m PID=0.0 R = 0A				orange and grey		St	
			2									
				2.50								
WB				13.50	GA20-BH09-002 SPT 2.50-2.95 m 4, 7, 10 N=17			CH	Sandy CLAY high plasticity, pale grey with orange, fine to medium grained sand, with fine grained gravel			
			3							w < PL		
				4.00								
			4	12.00	GA20-BH09-003 SPT 4.00-4.45 m 6, 12, 18 N=30			CH	CLAY high plasticity, orange and pale grey, trace fine to coarse grained sand, trace fine grained, dub-rounded to sub-angular gravel		VSt	
				4.50								
				11.50					trace fine to coarse grained sand, trace fine to coarse grained, dub-rounded to sub-angular gravel			
			5									
				5.50								
NMLC		100% Water RETURN 24-09-20		10.50	GA20-BH09-004 SPT 5.50-5.95 m 3, 4, 6 N=10				trace fine grained sand, trace fine to medium grained, sub-rounded to sub-angular gravel	w < PL - w ~ PL		
				5.90								
			6	10.10					pale grey and orange with grey, with fine grained sand	w < PL	St	
				7.00								
			7	9.00	GA20-BH09-005 SPT 7.00-7.30 m 12, 18/150mm HB N>18				SILTSTONE pale grey, residual soil to extremely weathered siltstone		H - Fb	
									For Continuation Refer to Sheet 2			
			8									
			9									
			10									

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-09

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327635.2 m E 5810298.2 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 16.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 4-9-20
JOB NO:	20145767	HOLE DEPTH: 16.85 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2								
				3								
				4								
				5								
				6								
				7	7.34		Continuation of Sheet 1					
NMLC	100% Water RETURN	100	0 (0)		8.66		SILTSTONE/BRECCIA pale grey and orange and brown, recovered as coarse sand to sub-angular gravel sized clasts of siltstone in a clay matrix					
				8	8.00							
		90	0 (35)		8.23 7.77		CORE LOSS SILTSTONE/BRECCIA pale grey and orange and brown, recovered as coarse sand to sub-angular gravel sized clasts of siltstone in a clay matrix	XW - HW			8.23-8.31 m: J, 80°, Pl, Sm, CLAY Cn-Ve 8.29 m: DB 8.33 m: J, 0°, Pl, Sm, FeO, SAND Sn-Ct 8.38 m: DB 8.41-8.56 m: EWS, SAND, GRAVEL, <150 mm 8.55-8.62 m: P, 80°, Pl-Un, Sm, SAND Ve-Ct, disturbed by drilling 8.65-8.70 m: EWS, CLAY, SAND, <50 mm 8.90-9.00 m: HB 9.00-9.13 m: CS, SAND, GRAVEL, <130 mm 9.15-9.50 m: P, 80-85°, sp = 0-120 mm, Pl, Sm, SAND Cn-Ct, disturbed by drilling 9.27-9.30 m: EWS, 0°, Pl, Sm-Ro, SAND,	
					8.70							
		80	0 (45)	9	7.30 8.90 7.10		SILTSTONE pale grey with orange and brown CORE LOSS SILTSTONE pale grey and orange, beddings dip 80 to 90 degrees	XW - HW				
		100	0 (75)	10								

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-09

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327635.2 m E 5810298.2 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 16.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 4-9-20
JOB NO:	20145767	HOLE DEPTH: 16.85 m	CHECKED: DATE:

Drilling

METHOD	WATER	TCR	RQD (SCR)
NMLC	100% Water RETURN	100	0 (75)
		85	0 (45)
		100	0 (60)
		100	0 (75)
		70	0 (20)
		85	0 (45)
		100	0 (50)
		100	0 (55)
		85	0
		100	0

Field Material Description

DEPTH (metres)	DEPTH RL	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING
10		SILTSTONE pale grey and orange, beddings dip 80 to 90 degrees	XW - HW
	10.70		
	10.85	CORE LOSS	
11	5.15	SILTSTONE pale grey and orange	XW - HW
			HW - MW
12			XW - HW
	12.80		HW - MW
	13.00	CORE LOSS	
13	3.00	SILTSTONE	HW - MW
	13.50		
		CORE LOSS	
	2.40	SILTSTONE	HW - MW
14			HW
			HW - MW
15	15.07		
	15.25	CORE LOSS	
	0.75	SILTSTONE	HW
16			HW - MW
			HW
			HW - MW
	16.85		HW
17	-0.85	END OF BOREHOLE @ 16.85 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ 5.60 m DEPTH STANDPIPE INSTALLED	HW - MW
18			
19			
20			

INFERRED STRENGTH UCS MPa: VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200

LABORATORY STRENGTH (MPa)

Defect Information

DEFECT DESCRIPTION & Additional Observations

GRAVEL Ct, <10 mm
9.51-9.64 m: Jmultiple, 0-90°, sp = 0-50 mm, Pl, Sm-Ro, FeO Sn
9.65-9.70 m: EWS, CLAY, <50 mm
9.70-9.76 m: DB
9.83 m: J, 5°, Un, Sm, CLAY Ve
9.95-10.03 m: EWS, CLAY, SAND, <80 mm
10.05-10.45 m: Jmultiple, 0-90°, sp = 0-50 mm, Pl, Sm, Cn
10.10 m: DB
10.50 m: J, 70°, Pl, Sm, SAND Ct, <20 mm
10.55-10.70 m: EWS, CLAY, SAND, GRAVEL, <150 mm
10.86-10.90 m: EWS, CLAY, SAND, <50 mm
10.90-11.00 m: DB
11.40-11.60 m: CS, <200 mm, disturbed by drilling
11.60-11.66 m: EWS, CLAY, GRAVEL
11.70-11.83 m: JX4, 0-10°, sp = 10-50 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve
11.73-11.92 m: Jmultiple, 70°, sp = 0-80 mm, Pl, Sm, CLAY, SAND, GRAVEL Ve-Ct, some disturbed by drilling
11.95-12.00 m: JX4, 0-80°, sp = 0-20 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve
12.05-12.20 m: Jmultiple, 10-85°, sp = 0-10 mm, Pl, Sm-Ro, FeO Sn
12.24-12.36 m: JX3, 60-70°, sp = 30-80 mm, Pl-Un, Sm, SAND, GRAVEL Ct, disturbed by drilling
12.38-12.50 m: Jmultiple, 0-90°, sp = 0-30 mm, Pl-Un, Sm-Ro, CLAY, SAND Ve-Ct
12.50-12.54 m: EWS, CLAY, <50 mm
12.55-12.69 m: Jmultiple, 0-30°, sp = 0-40 mm, Pl-Un, Sm-Ro, FeO, SAND, GRAVEL Sn-Ct
12.63-12.71 m: EWS, SAND, CLAY, <80 mm
12.71-12.80 m: J, 85°, Pl, Sm-Ro, SAND Ct
12.72-12.80 m: JX3, 0-20°, sp = 20-30 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve
13.00-13.05 m: CS, SAND, GRAVEL, <50 mm
13.05-13.10 m: Jmultiple, 0-90°, sp = 0-30 mm, Pl-Un, Sm-Ro, FeO Sn
13.18-13.30 m: EWS, CLAY, SAND, <120 mm
13.18-13.44 m: Jmultiple, 0-20°, sp = 0-50 mm, Pl, Sm-Ro, FeO Sn
13.18-13.30 m: EWS, CLAY, SAND, <120 mm
13.18-13.44 m: Jmultiple, 0-20°, sp = 0-50 mm, Pl, Sm-Ro, FeO Sn
13.38-13.50 m: EWS, CLAY, SAND, <120 mm
13.60-13.63 m: CS
13.70 m: J, 0°, Pl-Un, Sm-Ro, SAND Ct, <20 mm
13.72-13.80 m: Jmultiple, 0-60°, sp = 0-20 mm, Pl, Sm-Ro, FeO Sn
13.81-13.90 m: EWS, CLAY, SAND, <100 mm
13.92-13.97 m: Jmultiple, 0-60°, sp = 0-30 mm, Pl-Un, Sm-Ro, FeO, SAND Sn-Ct
14.00-14.08 m: J, 85°, Pl-Un, Sm, SAND Ct
14.08-14.20 m: EWS, CLAY, SAND, <120 mm
14.25-14.75 m: CS, <500 mm, disturbed by drilling
14.70-14.90 m: J, 85°, Pl-Un, Sm, CLAY, SAND Ve-Ct
14.92-14.97 m: JX3, 0-70°, sp = 0-20 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve
14.98-15.07 m: EWS, CLAY, SAND, <90 mm
15.25-15.35 m: JX3, 90°, sp = 0-20 mm, Pl, Sm, Cn
15.35-15.40 m: <50 mm
15.40-15.55 m: CS, SAND, GRAVEL, <150 mm
15.60-16.00 m: Pmultiple, 80-90°, sp = 0-20 mm, Pl-Un, Sm, FeO, CLAY Sn-Ve
15.75 m: J, 0°, Un, Sm, FeO, SAND Sn-Ct
15.85-16.00 m: EWS, CLAY, SAND, <50 mm
16.00-16.15 m: CS, FeO Sn, disturbed by drilling

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-09

SHEET: 4 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327635.2 m E 5810298.2 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 16.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 4-9-20
JOB NO:	20145767	HOLE DEPTH: 16.85 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	*DEPTH* RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)		DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				20								16.20-16.25 m: Jmultiple, 80-90°, sp = 0-20 mm, Pl, Sm, CLAY Cn-Ve, disturbed by drilling 16.25 m 16.25-16.65 m: JX4, 0°, sp = 100-150 mm, Un, Sm, SAND, fine GRAVEL Ct 16.25 m 16.25-16.65 m: JX4, 0°, sp = 100-150 mm, Un, Sm, SAND, fine GRAVEL Ct 16.45-16.70 m: EWS, CLAY, SAND, GRAVEL, <150 mm 16.72 m: J, 60°, Pl, Sm, CLAY Cn-Ve 16.75-16.85 m: EWS, CLAY, SAND, GRAVEL, <100 mm	
				21									
				22									
				23									
				24									
				25									
				26									
				27									
				28									
				29									
				30									

PRELIMINARY

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PRELIMINARY REPORT OF STANDPIPE INSTALLATION: GA20-BH-HAW-09

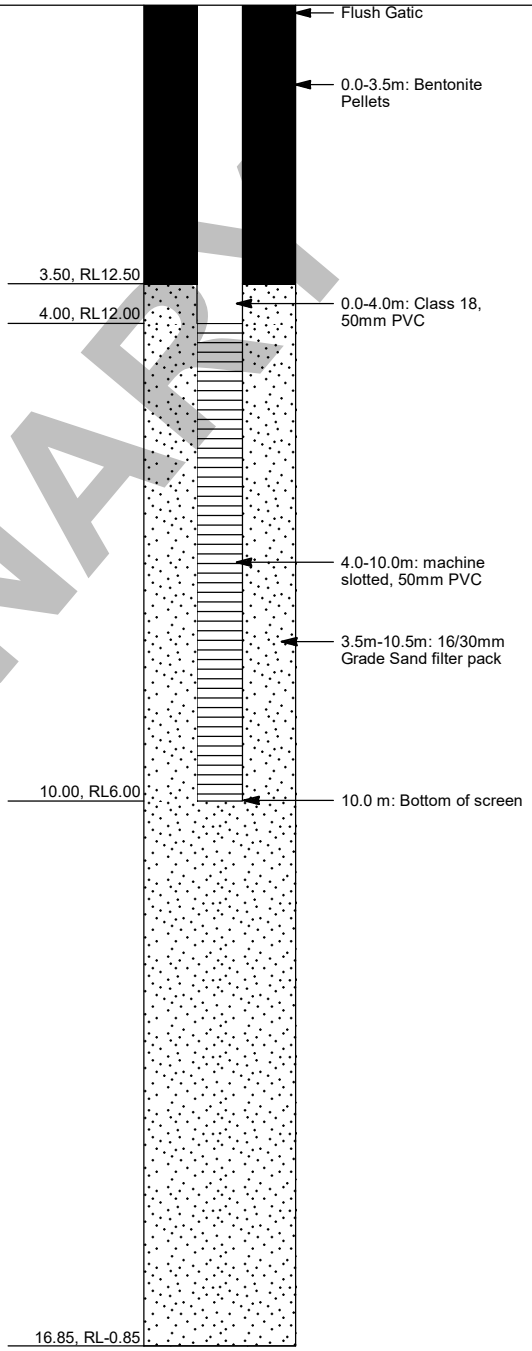
GOLDER

SHEET: 1 OF 1

CLIENT:	Department of Health and Human Services	COORDS: 327635.2 m E 5810298.2 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 16.0 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 4-9-20
JOB NO:	20145767	HOLE DEPTH: 16.85 m	CHECKED: DATE:

Drilling | **Field Material Description** | **Instrumentation Details**

METHOD	WATER	DEPTH (metres)	DEPTH RL	SOIL/ROCK MATERIAL DESCRIPTION
ADT		0	16.00	SANDY CLAY
			0.80	
			15.20	CLAY
			1.40	
		2	14.60	
			2.50	
WB			13.50	SANDY CLAY
		4	4.00	
			12.00	CLAY
			4.50	
NMLC	24-09-2020 Water RETURN		11.50	
			5.50	
			10.50	
			5.90	
		6	10.10	
			7.00	
			7.34	SILTSTONE
NMLC	100% Water RETURN		8.66	SILTSTONE/BRECCIA
			8.00	
		8		CORE LOSS
			7.77	SILTSTONE/BRECCIA
			8.70	
			8.90	SILTSTONE
			7.10	CORE LOSS
				SILTSTONE
		10		
			10.70	
			5.15	CORE LOSS
				SILTSTONE
		12		
			12.80	
			13.00	CORE LOSS
			3.00	SILTSTONE
			13.50	
			2.40	CORE LOSS
		14		SILTSTONE
			15.07	
			0.75	CORE LOSS
				SILTSTONE
		16		
			16.85	
			-0.85	END OF BOREHOLE @ 16.85 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ 5.60 m DEPTH STANDPIPE INSTALLED
		18		



PRELIMINARY

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-10

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327562.5 m E 5810276.2 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 11.5 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 22-9-20
JOB NO:	20145767	HOLE DEPTH: 14.50 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	11.50	GA20-BH-HAW-10/200 DS 0.00-0.10 m PID=0.4 R = 1A			CL-CI	Sandy CLAY low - medium plasticity, brown, fine to coarse grained sand			
				0.50	GA20-BH-HAW-10/200 DS 0.40-0.50 m PID=0.0 R = 1A			CI	CLAY medium plasticity, brown, yellow, pale grey, with fine to coarse grained sand, trace fine to coarse grained, sub-angular gravel, trace brick and wood fragments	w < PL	F - St	
			1	11.00 / 1.00	GA20-BH-HAW-10/200 DS 0.90-1.00 m PID=0.1 R = 1A				brown, black, orange, trace fine to coarse grained sand, trace fine to medium grained, sub-angualr gravel	w < PL - w ~ PL		
				10.50 / 1.50	GA20-BH-HAW-10/200 DS 1.40-1.50 m PID=0.0 R = 1A				red, yellow, brown, black, trace fine to coarse grained sand, trace fine to coarse grained, sub-rounded to sub-angular gravel			
			2	10.00	GA20-BH10-2001 SPT 2.00-2.45 m 5, 6, 3 N=9					w < PL		
				2.50 / 9.00					plastic, metal fragments		St	
			3	2.80 / 8.70				CI-CH	CLAY medium - high plasticity, brown grey, with fine grained sand	w < PL - w ~ PL		
				3.20 / 8.30	GA20-BH10-002 U63 3.20-3.60 m PP = 550->600 kPa			CH	CLAY high plasticity, orange and grey		H	
WB		100% Water RETURN	4	4.50 / 7.00	GA20-BH10-003 SPT 4.50-4.95 m 3, 5, 12 N=17				orange with grey	w < PL		
			5								VSt	
			6	6.00 / 5.50					SILTSTONE pale grey and orange, residual soil to extremely weathered siltstone			
									For Continuation Refer to Sheet 2			
			7									
			8									
			9									
			10									

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-10

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327562.5 m E 5810276.2 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 11.5 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 22-9-20
JOB NO:	20145767	HOLE DEPTH: 14.50 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2								
				3								
				4								
				5								
				6	6.20		Continuation of Sheet 1					
NMLC	100% Water RETURN	100	70 (100)		5.30		SILTSTONE grey brown	HW - MW			6.30-6.70 m: JX3, 0°, sp = 160-220 mm, Pl, Sm-Ro, FeO Sn	
		100	100 (100)									
		100	0 (100)	7							6.93 m: DB 7.03 m: J, 0°, Un, Sm, CLAY Ve 7.14 m: DB 7.20 m: J, 0°, Pl, Sm-Ro, FeO, calcite Sn 7.22-7.28 m: JX2, 0°, sp = 20 mm, Pl, Sm-Ro, FeO Sn	
		100	75 (100)	8							7.35 m: J, 30°, Pl, Sm-Ro, FeO Sn 7.43 m: J, 0°, Pl, Sm-Ro, FeO Sn 7.70 m: DB 7.93 m: J, 0°, Pl, Sm-Ro, FeO Sn 8.02 m: DB 8.23 m: J, 40°, Cv, Sm-Ro, FeO Sn	
					8.50 3.00		brown grey	MW - SW			8.40 m: J, 65°, Pl, Sm-Ro, FeO Sn 8.50-8.55 m: DB	
		100	80 (100)	9							9.24-9.54 m: DBX2, sp = 300 mm	
				10								

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-10

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327562.5 m E 5810276.2 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 11.5 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 22-9-20
JOB NO:	20145767	HOLE DEPTH: 14.50 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
NMLC	100% Water RETURN	100	80 (100)	10 11			SILTSTONE grey brown	MW - SW			9.92 m: J, 0°, Pl, Sm-Ro, FeO Sn 10.00-10.04 m: CS, <40 mm, disturbed by drilling 10.04-10.10 m: J, 90°, Pl, Sm-Ro, FeO, CLAY Sn-Ve 10.10-10.12 m: CS, <20 mm 10.27 m: J, 5°, Pl, Sm-Ro, FeO Sn 10.47-10.50 m: JX2, 0-15°, sp = 0-30 mm, Pl, Sm-Ro, FeO Sn, drilling induced opening 10.55 m: DB 11.18 m: J, 30°, Pl, Sm, CLAY Ve 11.38-11.39 m: JX2, 0°, sp = 2-10 mm, Pl, Sm-Ro, FeO, CLAY Sn-Ve	
		100	70 (100)	12	11.45 0.05		dark grey with brown	HW			11.65 m: DB 11.87 m: J, 15°, Pl, Sm-Ro, FeO Sn 12.04 m: J, 10°, Pl-Un, Sm-Ro, FeO Sn 12.12 m: DB 12.42 m: J, 15°, Pl-Un, Sm, Cn 12.66 m: J, 0°, Pl, Sm, FeO Sn 12.72-12.90 m: J, 80°, Pl, Sm, CLAY Cn-Ve, disturbed by drilling	
		100	65 (100)	13 14	14.50 -3.00		END OF BOREHOLE @ 14.50 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ m DEPTH STANDPIPE INSTALLED				13.19 m: J, 0°, Pl, Sm, SAND Ct 13.25-13.28 m: JX5, 0°, sp = 0-5 mm, Pl-St, Sm, FeO, GRAVEL Sn-Ct 13.38-13.43 m: JX2, 0°, sp = 50 mm, Pl, Sm, CLAY Ve 13.38-13.50 m: J, 70°, Pl, Sm, CLAY Cn-Ve 13.38-13.43 m: JX2, 0°, sp = 50 mm, Pl, Sm, CLAY Ve 13.38-13.50 m: J, 70°, Pl, Sm, CLAY Cn-Ve 13.77 m: J, 10°, Pl, Sm, FeO, CLAY Sn-Ve 14.39-14.50 m: CS, disturbed by drilling	
				15 16 17 18 19 20								

PRELIMINARY

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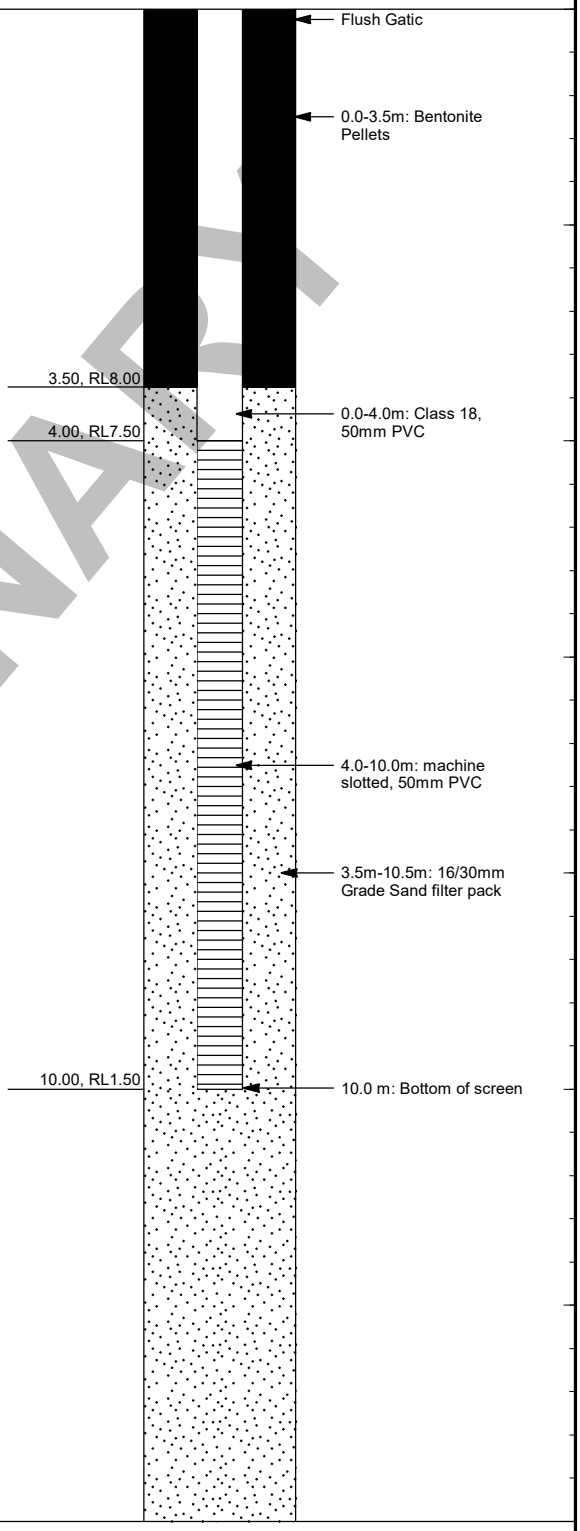
PRELIMINARY REPORT OF STANDPIPE INSTALLATION: GA20-BH-HAW-10

SHEET: 1 OF 2

CLIENT:	Department of Health and Human Services	COORDS: 327562.5 m E 5810276.2 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 11.5 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 22-9-20
JOB NO:	20145767	HOLE DEPTH: 14.50 m	CHECKED: DATE:

Drilling | **Field Material Description** | **Instrumentation Details**

METHOD	WATER	DEPTH (metres)	DEPTH RL	SOIL/ROCK MATERIAL DESCRIPTION
ADT		0	11.50	SANDY CLAY
			0.50 / 11.00	CLAY
			1.00 / 10.50	
			1.50 / 10.00	
		2	2.50 / 9.00	
			2.80 / 8.70	CLAY
			3.20 / 8.30	CLAY
WB	100% Water RETURN	4	4.50 / 7.00	
		6	6.00 / 6.20	SILTSTONE
NMLC	100% Water RETURN		5.30	SILTSTONE
		8	8.50 / 3.00	
		10		
NMLC	100% Water RETURN		11.45 / 0.05	
		12		
		14		



PRELIMINARY

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF STANDPIPE INSTALLATION: GA20-BH-HAW-10

SHEET: 2 OF 2

CLIENT:	Department of Health and Human Services	COORDS: 327562.5 m E 5810276.2 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 11.5 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 22-9-20
JOB NO:	20145767	HOLE DEPTH: 14.50 m	CHECKED: DATE:

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
NMLC		14	14.50		SILTSTONE	14.50, RL-3.00
			-3.00		END OF BOREHOLE @ 14.50 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ m DEPTH STANDPIPE INSTALLED	
		16				
		18				
		20				
		22				
		24				
		26				
		28				

PRELIMINARY

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-11

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327599.0 m E 5810276.5 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 12.5 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 11-9-20
JOB NO:	20145767	HOLE DEPTH: 14.52 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	12.50	GA20-BH-HAW-11/200 DS 0.00-0.10 m PID=0.3 R = 1A			CI	Sandy CLAY medium plasticity, brown, dark brown, fine to coare grained sand, trace fine to coarse grined gravel, sub-angular to angular			
				0.50 / 12.00	GA20-BH-HAW-11/2002 DS 0.40-0.50 m PID=0.2 R = 1A			CI-CH	CLAY medium - high plasticity, pale grey, brown, grey, orange, with fine to coarse grained sand			
			1	1.00 / 11.50	GA20-BH-HAW-11/200 DS 0.90-1.00 m PID=0.1 R = 1A				brown with orange and pale grey	w < PL	St - VSt	
				1.50 / 11.00	GA20-BH-HAW-11/200 DS 1.40-1.50 m PID=0.1 R = 1A				orange and pale grey with brown, trace fine to medium grained sand, with fine to coarse grained, sub-angular gravel			
			2	2.00 / 10.50	GA20-BH11-001 SPT 1.50-1.95 m 11, 15, 14 N=29				SILTSTONE pale grey, yellow, extremely weathered siltstone			
			3		GA20-BH-HAW-11/2003-BH11-002 R = 0A SPT 2.75-2.80 m 5/50mm HB N=R				For Continuation Refer to Sheet 2			
			4									
			5									
			6									
			7									
			8									
			9									
			10									

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-11

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327599.0 m E 5810276.5 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 12.5 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 11-9-20
JOB NO:	20145767	HOLE DEPTH: 14.52 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2								
					2.87		Continuation of Sheet 1					
NMLC	100% Water RETURN	100	45 (100)	3	9.63		SILTSTONE pale brown	HW			3.14-3.20 m: CS, FeO, CLAY Sn-Ve, probably induced and disturbed by drilling 3.28 m: DB 3.40 m: DB	
		85	0 (40)		3.50 3.60 8.90		CORE LOSS SILTSTONE pale brown with pale grey	RS - XW				
		95	0 (95)	4	4.05 4.16 8.34		CORE LOSS SILTSTONE pale brown, Iron oxide	HW			4.16-5.70 m: JX2, 80-90°, sp = 0-60 mm, Pl-Un, Sm-Ro, FeO Cn-Sn 4.27-5.70 m: Jmultiple, 0-10°, sp = 5-200 mm, Pl-St, Sm, FeO, CLAY Sn-Ve, some disturbed and opened by drilling	
		105	55 (105)	5	5.80 6.70		pale grey with pale brown, Iron oxide	HW - MW			5.77-5.80 m: JX2, 0°, sp = 30 mm, Pl, Sm, CLAY Ve 6.05 m: J, 30°, Pl-Un, Sm, CLAY Ve 6.11-6.21 m: JX2, 0°, Pl, Sm, Cn 6.29 m: J, 0°, Pl-Un, Sm-Ro, FeO Sn	
		100	65 (100)	6 7	7.80 4.70		pale brown, Iron oxide	HW			6.84-7.00 m: JX3, 0°, sp = 20-90 mm, Pl-Un, Sm-Ro, FeO Sn 7.02 m: J, 0°, Pl-Un, Sm-Ro, FeO Sn 7.81 m: J, 0°, Pl, Sm, CLAY Ve 7.93-8.06 m: J, 70°, Un, Ro, FeO, SAND Sn-Ct 8.25-9.00 m: J, 80-90°, Pl-Un, Sm, CLAY Cn-Ve	
		100	15 (100)	8 9 10							8.60-8.86 m: JX5, 0-10°, Un, Sm-Ro, FeO, CLAY Sn-Ve 8.70-8.80 m: J, 80°, Un, Sm-Ro, FeO, SAND Sn-Ct 9.00-9.80 m: J, 85°, Pl-Un, Sm, CLAY Cn-Ve 9.10-9.81 m: JX8, 0-5°, sp = 30-200 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve	

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-11

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327599.0 m E 5810276.5 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 12.5 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 11-9-20
JOB NO:	20145767	HOLE DEPTH: 14.52 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
NMLC	100% Water RETURN	100	0 (90)	10			SILTSTONE pale brown, Iron oxide	HW			9.97 m: J, 30°, Pl, Sm, CLAY Ve 10.10-10.73 m: JX9, 0-10°, sp = 30-150 mm, Pl-Un, Sm-Ro, FeO, CLAY, SAND Sn-Ct	
				11				HW			10.81-10.89 m: JX5, 0-80°, sp = 0-40 mm, Pl, Sm, CLAY Ve 11.00-11.25 m: J, 85°, Pl-Un, Sm, CLAY Ve 11.08-11.32 m: J4, 0°, sp = 40-100 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve 11.34-11.48 m: EWS, CLAY, SAND, <140 mm	
		100	25 (100)	12				MW			11.54 m: J, 70°, Pl, Sm, CLAY, SAND Ve-Ct, disturbed by drilling 11.80 m: J, 0-10°, Un, Sm-Ro, FeO, CLAY, SAND, GRAVEL Ve-Ct, <20 mm, disturbed by drilling 11.93 m: J, 0°, Pl, Sm-Ro, FeO Sn 12.20-12.33 m: JX2, 30°, sp = 130 mm, Pl, Sm-Ro, FeO, SAND Sn-Ct 12.23-13.00 m: J, 90°, Pl-Un, Sm, CLAY Cn-Ve 12.48-12.94 m: JX3, 0°, Pl-St, Sm-Ro, FeO, CLAY Sn-Ve	
		100	70 (100)	13							13.14-13.40 m: JX2, 0-5°, sp = 250 mm, Pl-Un, Sm, FeO Cn-Sn	
				14	14.52						13.70 m: J, 0°, St, Sm, Cn, probably induced by drilling 13.80 m: J, 0°, Pl, Sm, CLAY Ve 13.88 m: JX2, 0-80°, sp = 0-40 mm, Pl-Un, Sm-Ro, FeO, CLAY, SAND Sn-Ct 13.97 m: J, 0°, Pl-St, Sm, CLAY Ve 14.21 m: J, 5°, Pl, Sm, FeO Sn	
					-2.02		END OF BOREHOLE @ 14.52 m TARGET DEPTH GROUNDWATER NOT OBSERVED BACKFILLED					
				15								
				16								
				17								
				18								
				19								
				20								

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-12

SHEET: 1 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327649.7 m E 5810276.0 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 15.9 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 14-9-20
JOB NO:	20145767	HOLE DEPTH: 17.20 m	CHECKED: DATE:

Drilling | **Sampling** | **Field Material Description**

METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	L-M		0	15.90	GA20-BH-HAW-12/200 DS 0.00-0.10 m PID=0.0 R = 2A			CL-CI	Gravelly Sandy CLAY low - medium plasticity, brown, fine to coarse grained sand, fine to coarse grained, sub-angular to angular gravel			
				0.50 / 15.40	GA20-BH-HAW-12/200 DS 0.40-0.50 m PID=0.0 R = 1A				trace glass, brick, wood fragments			
			1	1.00 / 14.90	GA20-BH-HAW-12/200 DS 0.90-1.00 m PID=0.1 R = 1A			CI	CLAY medium plasticity, brown with orange and yellow and pale grey, trace fine to coarse grained sand		F - St	
					GA20-BH-HAW-12/200 DS 1.40-1.50 m PID=0.0 R = 1A					w < PL		
			2	2.50 / 13.40	GA20-BH12-001 SPT 2.50-2.95 m 2, 1, 1 N=2				grey and orange		S	
			3	3.80 / 12.10				CI-CH	CLAY medium - high plasticity, brown, grey, with fine grained sand			
WB		100% Water RETURN 24-09-20	4		GA20-BH12-002 U63 4.00-4.40 m PP = 150-250 kPa					w < PL - w ~ PL	St - VSt	
			5	5.50 / 10.40	GA20-BH12-003 SPT 5.50-5.95 m 3, 3, 5 N=8			CH	CLAY high plasticity, orange and pale grey with grey, trace fine to medium grained, rounded sand			
NMLC			6							w < PL	St	
		0% Water RETURN	7	7.00 / 8.90	GA20-BH12-004 SPT 7.00-7.45 m 4, 6, 7 N=13				orange and pale grey			
			8						For Continuation Refer to Sheet 2			
			9									
			10									

PRELIMINARY

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PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-12

SHEET: 2 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327649.7 m E 5810276.0 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 15.9 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 14-9-20
JOB NO:	20145767	HOLE DEPTH: 17.20 m	CHECKED: DATE:

Drilling						Field Material Description						Defect Information	
METHOD	WATER	TCR	RQD (SCR)	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
				0								
				1								
				2								
				3								
				4								
				5								
				6								
				7								
				8	8.00		Continuation of Sheet 1					
NMLC	0% Water RETURN	85	0 (85)		7.85		CORE LOSS	HW			8.05-8.40 m: Jmultiple, 0-90°, sp = 0-30 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve, disturbed by drilling	
					8.40		SILTSTONE pale grey and orange with brown					
		80	0 (10)		7.40		CORE LOSS	XW - HW			8.50-8.60 m: CS, GRAVEL, SAND, <100 mm 8.67-8.77 m: CS, GRAVEL, SAND, <100 mm	
							SILTSTONE orange brown with grey and brown					
		100	15 (85)	9				HW			8.80-8.85 m: CS, GRAVEL, SAND, <50 mm 8.85-8.90 m: IS, CLAY, <50 mm 8.90-9.23 m: Jmultiple, 0-60°, sp = 0-20 mm, Pl, Sm-Ro, FeO Cn-Sn 9.24-9.38 m: P, 50°, sp = 0-40 mm, Pl, Sm, FeO, CLAY, GRAVEL Cn-Ct 9.38-9.48 m: EWS, <100 mm 9.60-9.75 m: JX2, 40°, sp = 150 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve	
					9.48							
	50% Water RETURN	90	15 (70)		6.35		CORE LOSS	HW				
							SILTSTONE grey brown with brown					
				10								

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

PRELIMINARY

GAP 8_16.8 LIB.GLB Log GAP CORED BOREHOLE 20145767-DHHS_HAWTHORN_SHZ_FINAL.GPJ <<DrawingFile>> 30-09-2020 09:12 8.30.004 Datgel Tools

PRELIMINARY REPORT OF BOREHOLE: GA20-BH-HAW-12

SHEET: 3 OF 3

CLIENT:	Department of Health and Human Services	COORDS: 327649.7 m E 5810276.0 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 15.9 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 14-9-20
JOB NO:	20145767	HOLE DEPTH: 17.20 m	CHECKED: DATE:

Drilling

METHOD	WATER	TCR	RQD (SCR)
NMLC	50% Water RETURN	75	0 (55)
		100	0 (0)
		100	10 (90)
		100	10 (100)
		100	25 (100)
		100	35 (100)
		100	20 (95)

Field Material Description

DEPTH (metres)	DEPTH RL	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH UCS MPa (VL 0.6, L 2.0, M 6.0, H 20, VH 60, EH 200)	LABORATORY STRENGTH (MPa)
10	10.10				
	10.28	CORE LOSS			
	5.62	SILTSTONE orange brown with pale brown	XW - HW		
	10.70				
11	5.20	SILTSTONE/BRECCIA pale grey with orange, recovered as coarse sand to sub-angular to angular gravel sized clasts of siltstone in a clay matrix			
	11.83				
12	4.07	SILTSTONE	HW		
13					
14					
15					
16	16.00				
	-0.10	pale grey	HW		
	16.30				
	-0.40	orange brown with pale grey	MW		
	16.80				
	-0.90	dark grey			
17	17.20				
	-1.30	END OF BOREHOLE @ 17.20 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ 4.50 m DEPTH STANDPIPE INSTALLED			
18					
19					
20					

Defect Information

DEFECT DESCRIPTION & Additional Observations	AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)
9.86 m: J, 70°, Pl, Sm-Ro, FeO Sn 9.91-9.91 m: JX2, 45°, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ct 9.94-10.04 m: EWS, CLAY, <100 mm 10.38-10.43 m: JX2, 0-10°, sp = 50 mm, Pl-Un, Sm, GRAVEL, SAND Ct, <10 mm, drilling induced opening 10.47-10.57 m: J, 70°, Pl, Sm, CLAY, SAND Ct 10.68 m: J, 0°, Pl, Sm, Cn, probably induced by drilling	
11.83-12.00 m: Jmultiple, 0-85°, sp = 0-20 mm, Pl, Sm, CLAY, SAND Ve-Ct 12.00-12.10 m: IS, CLAY, <100 mm 12.13-12.70 m: Jmultiple, 0-15°, sp = 0-140 mm, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve	
12.88-13.30 m: JX7, 0°, Un, Sm, CLAY, SAND Ve-Ct	
13.45-13.58 m: JX5, 70-90°, sp = 0-80 mm, Pl-Un, Sm, CLAY, SAND, fine GRAVEL Ct 13.66-13.72 m: J, 70°, Pl, Sm, CLAY, SAND Ct, <3 mm 13.76 m: DB 13.86 m: JX2, 0-80°, sp = 0-40 mm, Pl-Un, Sm-Ro, FeO Sn 13.94 m: J, 30°, Pl, Sm, CLAY Ve 14.08 m: J, 60°, Pl-Un, Sm-Ro, FeO, CLAY Sn-Ve 14.30 m: J, 60°, Pl, Ro, SAND Ct, <2 mm 14.51-14.65 m: J, 80°, Pl, Sm, CLAY Ve 14.75 m: J, 60°, Pl, Sm, CLAY Ve	
15.06-15.12 m: JX2, 5-60°, sp = 10-80 mm, Pl-Un, Sm, CLAY Ve 15.21-15.30 m: J, 10-80°, sp = 0-110 mm, Un Sm-Ro, FeO, SAND, GRAVEL Sn-Ct 15.51 m: J, 30°, Pl-Un, Sm, FeO, SAND Sn-Ct 15.60 m: J, 10°, Pl, Sm, CLAY Ve 15.74 m: J, 5°, Un, Sm, CLAY Ve 15.87 m: J, 0°, Pl-Un, Sm, Cn 15.94 m: J, 20°, Pl-Un, Sm-Ro, FeO Sn 16.16-16.22 m: CS, <60 mm	
16.41-16.53 m: J, 0-10°, sp = 30-100 mm, Un Sm-Ro, FeO, SAND, GRAVEL Sn-Ct 16.61-16.66 m: CS, SAND, GRAVEL, <50 mm 16.74-16.87 m: J, 80°, Pl, Sm, CLAT Cn-Ve 17.03 m: J, 0°, Un, Sm, Cn 17.06-17.15 m: J, 70°, Pl-Un, Sm, SAND, GRAVEL Ct	

PRELIMINARY

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

GAP 8_16.8 LIB.GLB Log GAP CORED BOREHOLE 20145767-DHHS_HAWTHORN_SHZ_FINAL.GPJ <<DrawingFile>> 30-09-2020 09:12 8.30.004 Datgel Tools

PRELIMINARY REPORT OF STANDPIPE INSTALLATION: GA20-BH-HAW-12

GOLDER

SHEET: 1 OF 1

CLIENT:	Department of Health and Human Services	COORDS: 327649.7 m E 5810276.0 m N MGA94 55	DRILL RIG: Comacchio Geo 205
PROJECT:	Public Housing Renewal Project	SURFACE RL: 15.9 m DATUM: AHD	CONTRACTOR: Contract Drilling Services Pty Ltd
LOCATION:	1-7 Bills Street, Hawthorn	INCLINATION: -90° DIRECTION: 000°	LOGGED: SHZ DATE: 14-9-20
JOB NO:	20145767	HOLE DEPTH: 17.20 m	CHECKED: DATE:

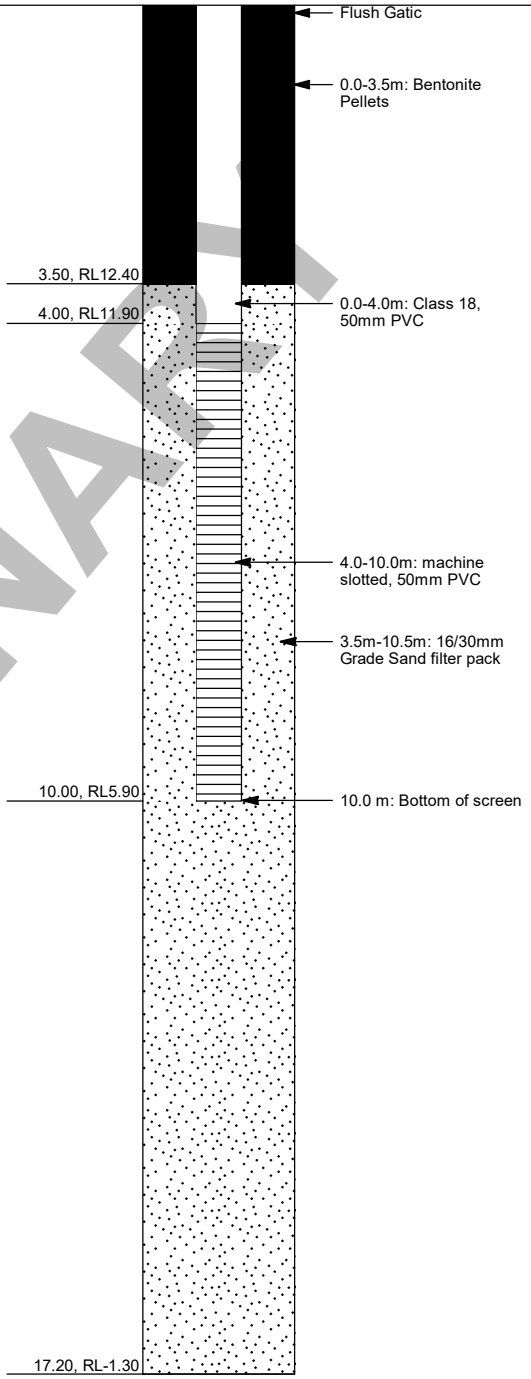
Drilling | **Field Material Description** | **Instrumentation Details**

METHOD: ADT, WB, NMLC, NMLC

WATER: 100% Water RETURN; 100% Water RETURN; 100% Water RETURN; 0% Water RETURN; 50% Water RETURN

DEPTH (metres): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18

DEPTH RL	SOIL/ROCK MATERIAL DESCRIPTION
15.90 / 0.50	GRAVELLY SANDY CLAY
15.40 / 1.00	
14.90	CLAY
2.50	
13.40 / 3.80	
12.10	CLAY
5.50	
10.40	CLAY
7.00	
8.90 / 8.00	
8.40	CORE LOSS
7.40	SILTSTONE
	CORE LOSS
9.48	SILTSTONE
6.35	CORE LOSS
10.10	SILTSTONE
5.62	CORE LOSS
10.70	SILTSTONE
5.20	SILTSTONE/BRECCIA
11.83	
4.07	SILTSTONE
16.00	
0.10 / 16.30	
-0.40	
16.80	
-0.90 / 17.20	
-1.30	END OF BOREHOLE @ 17.20 m TARGET DEPTH GROUNDWATER ENCOUNTERED @ 4.50 m DEPTH STANDPIPE INSTALLED



PRELIMINARY

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

GAP 8_16.8 LIB.GLB Log GAP WELL 3 20145767-DHHS_HAWTHORN_SHZ_FINAL.GPJ <<DrawingFile>> 30-09-2020 09:17 8.30.004 Datgel Tools

Borehole Log:	**BH1**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street, Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		SILT- grey with sand	ML	D	D		
	0.50	silty SAND- grey	SM	M	MD		
	1.00 1.50	sandy CLAY- medium plasticity brown orange mottled grey	CI	<PL	F		U50 Undisturbed sample Iss= 0.9%
	2.00 2.50 3.00 3.50 4.00 4.50 5.00	END OF TEST NO REFUSAL @ 2.0m BELOW ESL No ground water encountered					

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH2**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street, Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		SILT- grey with sand	ML	D	D		
		CLAY- medium plasticity brown orange mottled grey	CI	≈PL	F		
	0.50						
	1.00						
	1.50						
	2.00	END OF TEST NO REFUSAL @ 2.0m BELOW ESL No ground water encountered					
	2.50						
	3.00						
	3.50						
	4.00						
	4.50						
	5.00						

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH3**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street, Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		SILT- grey with sand	ML	D	D		
	0.50	silty SAND- grey	SM	W	L		
		sandy CLAY- medium plasticity brown orange mottled grey	CI	<PL	F		
	1.00	CLAY- medium plasticity brown orange mottled grey	CI	≈PL	F		
	1.50						
	2.00	END OF TEST NO REFUSAL @ 2.0m BELOW ESL No ground water encountered					
	2.50						
	3.00						
	3.50						
	4.00						
	4.50						
	5.00						

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH4**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street, Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
	0.50	SILT- grey with sand	ML	D	D		
		silty SAND- grey	SM	W	L		
	1.00	sandy CLAY- medium plasticity brown orange mottled grey	CI	<PL	F		Disturbed sample PI=7 LS=1.3
	1.50	CLAY- medium plasticity brown orange mottled grey	CI	≈PL	F		
	2.00	END OF TEST NO REFUSAL @ 2.0m BELOW ESL No ground water encountered					
	2.50						
	3.00						
	3.50						
	4.00						
	4.50						
	5.00						

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH5**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		SILT- grey with sand	ML	D	D		
	0.50	sandy CLAY- medium plasticity brown orange mottled grey	CI	<PL	F		
		CLAY- medium plasticity brown orange mottled grey	CI	≈PL	F		
	1.00						
	1.50						
		Extremely weathered SILTSTONE- low strength pale brown	XW	D	D		
	2.00	END OF TEST NO REFUSAL @ 2.0m BELOW ESL No ground water encountered					
	2.50						
	3.00						
	3.50						
	4.00						
	4.50						
	5.00						

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH6**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		FILL-silty SAND- grey building rubbles		M	L	FILL	
	0.50	FILL-sandy CLAY- medium plasticity brown orange mottled grey some organic matters, building rubles		>PL	F	FILL	Disturbed sample PI=35 LS=8.5
	1.00	silty SAND- grey	SM	W	L		
	1.50	sandy CLAY- medium plasticity brown orange mottled grey	CI	<PL	F		
	2.00	END OF TEST NO REFUSAL @ 2.0m BELOW ESL No ground water encountered					
	2.50						
	3.00						
	3.50						
	4.00						
	4.50						
	5.00						

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH7**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
	0.50	SILT- grey with sand	ML	D	D		
	1.00	silty SAND- grey	SM	W	L		
	1.50	CLAY- medium plasticity brown orange mottled grey	CI	≈PL	F		U50 Undisturbed sample Iss= 0.9%
	2.00	END OF TEST NO REFUSAL @ 2.0m BELOW ESL No ground water encountered					
	2.50						
	3.00						
	3.50						
	4.00						
	4.50						
	5.00						

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH8**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		FILL-silty SAND- grey building rubbles		M	L	FILL	
	0.50	SILT- grey with sand	ML	D	D		Disturbed sample PI=28 LS=8.0
	1.00	CLAY- medium plasticity brown orange mottled grey	CI	≈PL	F		
	1.50	Extremely weathered SILTSTONE- low strength pale brown	XW	D	D		
	2.00	END OF TEST NO REFUSAL @ 2.0m BELOW ESL No ground water encountered					
	2.50						
	3.00						
	3.50						
	4.00						
	4.50						
	5.00						

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH9**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		FILL-silty SAND- grey building rubbles		M	L	FILL	
	0.50 1.00 1.50 2.00 2.50	FILL-sandy CLAY- medium plasticity brown orange mottled grey some organic matters, building rubles		>PL	F	FILL	U50 Undisturbed sample Iss= 2.4%
	3.00 3.50 4.00 4.50 5.00	END OF TEST NO REFUSAL @ 3.0m BELOW ESL No ground water encountered					

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH10**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		FILL-silty SAND- grey building rubbles		M	L	FILL	
	0.50 1.00 1.50	FILL-sandy CLAY- medium plasticity brown orange mottled grey some organic matters, building rubles		>PL	F	FILL	
		CLAY- medium plasticity brown orange mottled grey	CI	≈PL	F		
	2.00 2.50 3.00 3.50 4.00 4.50 5.00	END OF TEST NO REFUSAL @ 2.0m BELOW ESL No ground water encountered					

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH11**	**Sheet:**	**1 of 1**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	EJ
Location:	Refer to Plan	Date:	2.12.2016

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
	0.50	FILL-silty SAND- grey building rubbles		M	L	FILL	
	1.00 1.50 2.00 2.50	FILL-sandy CLAY- medium plasticity brown orange mottled grey some organic matters, building rubles		>PL	F	FILL	Disturbed sample PI=14 LS=5.9 U50 Undisturbed sample Iss= 1.1%
	3.00 3.50 4.00 4.50 5.00	END OF TEST NO REFUSAL @ 3.0m BELOW ESL No ground water encountered					

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH12**	**Sheet:**	**1 of 2**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	JM
Location:	Refer to Plan	Date:	23.01.2017

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		FILL - Clayey Gravelly SAND: grey-brown, medium grain, gap graded, gravel (fine-coarse, poorly graded, sub-angular), clay (low plasticity), root fibres, building rubble (porcelain, bricks, glass)	SC-SP	M		Filling Material	
	0.50	FILL - CLAY with gravel: grey-brown mottled orange, medium plasticity, gravel (fine-coarse, poorly graded, sub-angular), root fibres	CI	=PL	VSt-H		
		FILL - Gravelly SAND: orange-brown, well graded, gravel (fine-coarse, sub-angular to sub-rounded), porcelain fragments	SW	D			
	1.00	Silty SAND: dark grey, fine, uniform, silt (low liquid limit), root fibres	SP-SM	D		Marine deposit	
		tending to; SAND: pale grey, fine, uniform		M			
	1.50						
	2.00	Clayey SAND: grey mottled orange-brown, fine, uniform, clay (low plasticity)	SC	M			
		CLAY with sand: orange-brown mottled grey, medium plasticity, sand (fine, uniform)	CI	>PL	VSt		
MA-V	2.50						
	3.00						
	3.50	pale grey mottled orange					
	4.00						
	4.50	Clayey SILT: orange, low plasticity; sandy (fine, uniform) reducing with depth, trace gravel (fine, sub-rounded)	ML-CL	>PL	F-St	Inferred weathered siltstone	
		tending to pale grey mottled orange					
	5.00						
		Borehole log continued on Sheet 2					

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH12**	**Sheet:**	**2 of 2**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	JM
Location:	Refer to Plan	Date:	23.01.2017

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		Continuation of Sheet 1					
		Clayey SILT: orange, low plasticity; sandy (fine, uniform) reducing with depth, trace gravel (fine, sub-rounded) tending to pale grey mottled orange	ML-CL	>PL	F-St	Inferred weathered siltstone	
	5.50						
	6.00						
	6.50						
MA-V		SILTSTONE: pale grey mottled orange, fine grained, inferred to be XW, very low to low strength		D		Weathered Siltstone	
	7.00						
	7.50						
		inferred DW, low to medium strength					
	8.00						
	8.50						
	9.00	END OF BOREHOLE @ 9.0 m Target depth reached, No water encountered					
	9.50						
	10.00						

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH13**	**Sheet:**	**1 of 2**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	JM
Location:	Refer to Plan	Date:	23.01.2017

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
MA-V		FILL - Clayey Gravelly SAND: grey-brown, medium grain, gap graded, gravel (fine-coarse, poorly graded, sub-angular), clay (low plasticity), root fibres, building rubble (porcelain, bricks, glass)	SC-SP	M		Filling Material	
	0.50	FILL - Sandy Gravelly CLAY: grey-brown, low plasticity, gravel (fine-coarse, poorly graded, sub-angular), root fibres, building rubble (porcelain, bricks, glass)	CL-SC	>PL	F		
	1.00						
	1.50						
	2.00						
	2.50						
		FILL - sandy CLAY with gravel: dark grey-brown mottled orange, medium plasticity, sand (fine to medium), gravel (fine-coarse, poorly graded, sub-angular), root fibres	CI	=PL	VSt-H	3.0m - Standing water during drilling 3.1m - Standing water 1 hour after drilling	
	3.00						
		CLAY with sand: orange-brown mottled grey, medium plasticity, sand (fine, uniform)	CI	>PL	VSt	Marine deposit	
	3.50						
	4.00	Clayey SILT: pale grey mottled orange, low plasticity; sandy (fine, uniform), sand reducing with depth, trace gravel (fine, sub-rounded)	ML-CL	>PL	F-St	Inferred weathered siltstone	
	4.50						
	5.00						
		Borehole log continued on Sheet 2					

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH13**	**Sheet:**	**2 of 2**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	JM
Location:	Refer to Plan	Date:	23.01.2017

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		Continuation of Sheet 1					
		Clayey SILT: pale grey mottled orange, low plasticity; sandy (fine, uniform), sand reducing with depth, trace gravel (fine, sub-rounded)	ML-CL	>PL	F-St	Inferred weathered siltstone	
	5.50	SILTSTONE: pale grey mottled orange, fine grained, inferred to be XW, very low to low strength		D		Weathered Siltstone	
	6.00						
	6.50						
MA-V	7.00						
	7.50						
	8.00						
	8.50	inferred DW, low to medium strength					
	9.00	END OF BOREHOLE @ 9.0 m Target depth reached					
	9.50						
	10.00						

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH14**	**Sheet:**	**1 of 2**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	JM
Location:	Refer to Plan	Date:	23.01.2017

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
MA-V	0.50, 1.00, 1.50, 2.00, 2.50	FILL - Sandy Gravelly CLAY: grey-brown, low plasticity, gravel (fine-coarse, poorly graded, sub-angular), root fibres, building rubble (porcelain, bricks, glass)	CL-SC	>PL	F	Filling Material	
	3.00, 3.50	FILL - sandy CLAY with gravel: dark grey-brown mottled orange, medium plasticity, sand (fine to medium), gravel (fine-coarse, poorly graded, sub-angular), root fibres	CI	=PL	VSt-H		
	4.00, 4.50, 5.00	clayey SAND: blue-grey, fine, uniform, low plasticity, glossy, chemical odour;	SC	W	S-F	Marine deposit	
		tending to; sandy CLAY: dark brown-grey	CL-SC	>PL	S-F		
		Borehole log continued on Sheet 2					

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

Borehole Log:	**BH14**	**Sheet:**	**2 of 2**
Client:	Department of Health and Human Services	Drill Rig:	-
Project:	Bills Street Hawthorn	Logged:	JM
Location:	Refer to Plan	Date:	23.01.2017

Method	Depth (metres)	Material Description	Soil Classification	Moisture	Consistency / Density	Structure, Origin, Water and Additional Observations	Sample or Field Test
		Continuation of Sheet 1					
	5.50	sandy CLAY: dark grey-brown, fine, uniform, low plasticity, lesser chemical odour	CL-SC	>PL	S-F	Marine deposit	
	6.00 6.50	Clayey SILT: pale grey mottled orange, low plasticity; sandy (fine, uniform), sand reducing with depth, trace gravel (fine, sub-rounded)	ML-CL	>PL	F-St	Inferred weathered siltstone	
MA-V	7.00 7.50 8.00 8.50	SILTSTONE: grey mottled orange, fine grained, inferred to be DW, low to medium strength		D		Weathered Siltstone	
	9.00 9.50 10.00	END OF BOREHOLE @ 9.0 m Target depth reached					

This borehole log is to be read in conjunction with the explanatory notes appended to the set of logs. This borehole log is not be reproduced without the full inclusion of all explanatory notes.

EXPLANATION OF NOTES, ABBREVIATIONS & TERMS USED ON BOREHOLE AND TEST PIT LOGS

DRILLING/EXCAVATION METHOD

HA	Hand Auger	W	Washbore	PT	Push Tube
MA-	Mechanical Auger Drilling	HQ	Diamond Core - 63 mm	EX	Excavator
-V	V-Bit	NMLC	Diamond Core - 52 mm	HAD	Hollow Auger Drilling
-TC	TC-Bit, e.g. ADT	NQ	Diamond Core - 47 mm		

PENETRATION/EXCAVATION RESISTANCE

L	Low resistance. Rapid penetration possible with little effort from the equipment used.
M	Medium resistance. Excavation/possible at an acceptable rate with moderate effort from the equipment used
H	High resistance. Further penetration is possible at a slow rate and requires significant effort from the equipment
R	Refusal or Practical Refusal. No further progress possible without the risk of damage or unacceptable wear to the digging implement or machine.

These assessments are subjective and are dependent on many factors including the equipment power, weight, condition or excavation or drilling tools, and experience of the operator.

WATER

∇	Water level at date shown	⇐	Partial water loss
⇒	Water inflow	|⇐|	Complete water loss

NO	Ground Water Not Observed: Ground water obersvation not possible. Ground water may or may not be present
NE	Ground Water Not Encountered: Ground water was not evident during excavation or a short time after completion. However, groundwater could be present in less permeable strata. Inflow may have been observed had the borehole/test pit been left open for a longer period.

SAMPLING AND TESTING

SPT	Standard Penetration Test to AS1289.6.3.1 - 2004
3,6,9 N=15	3,6,9 = blows per 150mm. N = blows per final 300mm penetration
30/80mm	Practical refusal, with blows and depth of penetration before refusal occurred
RW	Penetration caused under rod weight only
HW	Penetration caused under hammer and rod weight only
HB	Hammer bounce without penetration
R	Refusal to test
DCP	Dynamic Cone Penetrometer Test to AS1289.6.3.2 - 1997
DCP (p)	Dynamic Cone Penetrometer Test to AS1289.6.3.3 - 1997 Perth Sand Penetrometer
6	6 = blows per 100mm of penetration

DS	Disturbed sample
BDS	Bulk disturbed sample
U63	Undisturbed thin wall push tube sample, nominal sample diameter denoted in millimetres
W	Water sample
G	Gas sample
V	pilcon shear vane (kPa)
PP	Pocket penetrometer (kPa)
FP	Field permeability test over section noted
ES	Environmental sample
PI	Plastic Index (%)
PL	Plastic Limit (%)
LL	Liquid Limit (%)
MC	Moisture Content (%)
CBR	Californian Bearing Ration (%)

ROCK CORE RECOVERY

TCR = Total Core Recovery (%)

$$= \frac{Length\ of\ core\ recovered}{Length\ of\ core\ run} \times 100$$

RQD = Rock Quality Designation (%)

$$= \frac{\sum Axial\ lengths\ of\ core > 100\ mm}{Length\ of\ core\ run} \times 100$$

EXPLANATION OF NOTES, ABBREVIATIONS & TERMS USED ON BOREHOLE AND TEST PIT LOGS - SOIL DESCRIPTION (AS1726 - 1993)

SOIL CLASSIFICATION SYSTEM

Coarse Grained Soil

GW	Well graded gravels, gravel-sand mixtures, little or no fines
GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines, uniform gravels
GM	Silty gravels, gravel-sand-silt mixtures
GC	Clayey gravels, gravel-sand-clay mixtures
SW	Well-graded sands, gravelly sands, little or no fines
SP	Poorly-graded sands, gravelly sand, little or no fines
SM	Silty sands, sand-silt mixtures
SC	Clayey sands, sand-clay mixtures

Fine Grained Soils

ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or silts with low plasticity
CL, CI	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays
OL	Organic silts and organic silty clays of low plasticity
MH	Inorganic silts, micaceous or diatomaceous fine sand for silty soils
CH	Inorganic clays of high plasticity
OH	Organic clays of medium to high plasticity, organic silts
PT	Peat, humus, swamp soils with high organic contents

First Letter: G = Gravel, S = Sand, M = Silt, C = Clay; Second Letter: W = Well-graded, P = Poorly-graded, M = Mixture, O = Organic, L = Low plasticity, H = High plasticity

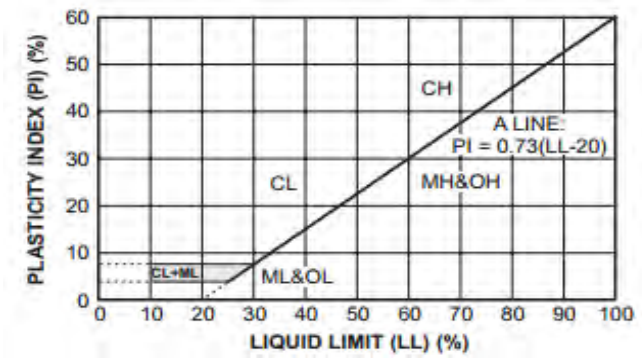
Soils may be a combination of multiple soil classifications where borderline

PARTICLE SIZE

Soil	Major Division	Sub-Division	Particle Size (mm)
Coarse	Boulders		>200
	Cobbles		63 - 200
	Gravel	Coarse	20 - 63
		Medium	6 - 20
		Fine	2.36 - 6
	Sand	Coarse	0.6 - 2.36
		Medium	0.2 - 0.6
		Fine	0.075 - 0.2
Fine	Silt		0.002 - 0.075
	Clay		< 0.002

0.075mm is the approximate minimum particle size discernible by eye

PLASTICITY CHART



MOISTURE CONDITION

Coarse	D	Dry	Sands and gravels are free flowing.
	M	Moist	Soils are darker than in the dry condition and may feel cool. Sands and gravels tend to cohere.
	W	Wet	Soils exude free water. Sands and gravels tend to cohere.
Fine	PL	Plastic Limit	Moisture content of fine grain soils are described; as below plastic limit (<PL), near to plastic limit (=PL), above plastic limit (>PL), near to the liquid limit (=LL), or above the liquid limit (>LL)
	LL	Liquid Limit	

CONSISTENCY AND DENSITY

Fine Grained Soils

			Pocket Pentrometer Reading (kPa)
VS	Very Soft	Exudes between fingers when squeezed	<25
S	Soft	Can be moulded by light finger pressure	20 - 50
F	Firm	Can be moulded by strong finger pressure	50 - 100
St	Stiff	Cannot be moulded by fingers. Can be indented by thumb	100 - 200
VSt	Very Stiff	Can be indented by thumb nail	200 - 400
H	Hard	Can be indented by thumb nail with difficulty	>400

Coarse Grained Soil

		Density Index %	'N' Value
VL	Very Loose	≤15	0 - 4
L	Loose	15 - 35	4 - 10
MD	Medium Dense	35 - 65	10 - 30
D	Dense	65 - 85	30 - 50
VD	Very Dense	>85	>50

SECONDARY OR MINOR SOIL COMPONENTS

Designation of components	In coarse grained soils				In fine grained soils	
	%Fines	Terminology	%Accessory Coarse Fraction	Terminology	%Sand/gravel	Terminology
Minor	≤5	'trace' clay/silt	≤15	'trace' sand/gravel	≤15	'trace' sand/gravel
	5 - 12	'with' clay/silt	15 - 30	'with' sand/gravel	15 - 30	'with' sand/gravel
Secondary	> 15	Prefix silty or clayey	>30	Prefix sandy or gravelly	>30	Prefix sandy or gravelly

EXPLANATION OF NOTES, ABBREVIATIONS & TERMS USED ON BOREHOLE AND TEST PIT LOGS - ROCK DESCRIPTION (AS1726 - 1993)

STRENGTH OF INTACT ROCK

Symbol	Term	Point Load Index, (I_{s50}) MPa	Field Guide to Strength
VL	Very Low	$0.03 \le I_{s50} < 0.1$	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; pieces up to 30mm thick can be broken by finger pressure
L	Low	$0.1 \le I_{s50} < 0.3$	Easily scored with knife; indentations 1mm to 3mm after firm blow with pick point; core 150mm long and 50mm diameter can be broken by hand; sharp edges of core friable
M	Medium	$0.3 \le I_{s50} < 1.0$	Readily scored with knife; core 150mm long and 50mm diameter can be broken by hand with difficulty
H	High	$1.0 \le I_{s50} < 3$	Core 150mm long and 50mm diameter cannot be broken by hand but can be broken by single firm blow of pick; rock rings under hammer
VH	Very High	$3 \le I_{s50} < 10$	Hand held specimen breaks with pick after more than one blow; rock rings under hammer
EH	Extremely High	$10 \le I_{s50}$	Specimen requires many pick blows to break intact rock, rock rings under hammer

Material with rock strength less than 'Very Low' are described using soil properties

DEGREE OF ROCK WEATHERING

Term		Symbol		Definition
Residual Soil		RS		Soil derived from the weathering of rock; the mass structure and material fabric are no longer evident the soil has not been significantly transported.
Extremely Weathered		XW		Material is weathered to such an extent that it has soil properties, i.e. it either disintegrates or can be remoulded, in water. Fabric of original rock still visible.
Highly Weathered	Distinctly Weathered	HW	DW	Rock strength is changed by weathering. The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognizable. Some minerals are decomposed to clay minerals. Porosity may be increased by leach, or may be decreased due to deposition of weathering products in pores.
Moderately Weathered		MW		The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly Weathered		SW		Rock is slightly discoloured but shows little or no change of strength from fresh rock
Fresh		FR		Rock shows no sign of decomposition or staining

Distinctly Weathered is to be used when it is not possible to differentiate between highly and moderately weathered.

Extremely Weathered material is to be described using soil properties

ROCK MASS PROPERTIES

Term	Separation of Stratification Planes	Term	Description
Thinly laminated	< 6mm	Fragmented	Primarily fragments < 20mm length and mostly of width < core diameter
Laminated	6mm to 20 mm	Highly fractured	Core lengths generally less than 20mm to 40mm with occasional fragments
Very thinly bedded	20mm to 60mm		
Thinly bedded	60mm to 200mm	Fractured	Core lengths mainly 30mm to 100mm with occasional shorter and longer pieces
Medium bedded	0.2m to 0.6m	Slightly fractured	Core lengths generally 0.3m to 1.0m with occasional longer and shorter sections
Thickly bedded	0.6m to 2.0m		
Massive	< 2m	Unbroken	Core has no fractures

DEFECT TYPES AND DESCRIPTIONS

Defect Type		Defect Shape		Surface Roughness		Defect Coatings	
BR	Bedding parting	PL	Planar	VR	Very rough	CL	Clean
JT	Joint	ST	Stepped	RO	Rough	ST	Stained
SR	Sheared surface	CR	Curved	SM	Smooth	VN	Veneer
SZ	Sheared zone	IR	Irregular	PO	Polished	CT	Coating
SS	Sheared seam	UN	Undulating	SL	Slickenside		
CS	Crushed seam						
IS	Infill seam						
XS	Extremely Weathered Seam						

Vertical Boreholes - The dip of the defect is given from the horizontal

Inclined Boreholes - The angle of the defect is given from the core axis

EXPLANATION OF NOTES, ABBREVIATIONS & TERMS USED ON BOREHOLE AND TEST PIT REPORTS

DRILLING/EXCAVATION METHOD

ADH	Hollow auger drilling	EX	Excavator	PQ3	Diamond core - 83 mm
ADT	Auger drilling with tc-bit	HA	Hand auger	PT	Push tube sampling
ADV	Auger drilling with v-bit	HAND	Excavated by hand methods	RAB	Rotary air blast
AIRCORE	Aircore	HMLC	Diamond core - 63 mm	RC	Reverse circulation
AT	Air track	HQ3	Diamond core - 61 mm	RT	Rock roller
BH	Backhoe bucket	JET	Jetting	SONIC	Sonic drilling
CT	Cable tool rig	MZ	Mazier tube sampling	SPT	Standard penetration testing
DTC	Diatube coring	NDD	Non-destructive digging	U	Undisturbed tube sampling
EE	Existing excavation	NMLC	Diamond core - 52 mm	WB	Washbore drilling
EPT	Extruded push tube	NQ3	Diamond core - 45 mm		

PENETRATION/EXCAVATION RESISTANCE

L **Low resistance.** Rapid penetration possible with little effort from the equipment used.

M **Medium resistance.** Excavation/possible at an acceptable rate with moderate effort from the equipment used.

H **High resistance** to penetration/excavation. Further penetration is possible at a slow rate and requires significant effort from the equipment.

R **Refusal or Practical Refusal.** No further progress possible without the risk of damage or unacceptable wear to the digging implement or machine.

These assessments are subjective and are dependent on many factors including the equipment power, weight, condition of excavation or drilling tools, and the experience of the operator.

WATER

▽	Water level at date shown	◁	Partial water loss
▷	Water inflow	◀	Complete water loss

GROUNDWATER NOT OBSERVED	The observation of groundwater, whether present or not, was not possible due to drilling water, surface seepage or cave in of the borehole/test pit.
GROUNDWATER NOT ENCOUNTERED	The borehole/test pit was dry soon after excavation. However, groundwater could be present in less permeable strata. Inflow may have been observed had the borehole/test pit been left open for a longer period.

SAMPLING AND TESTING

SPT	Standard Penetration Test to AS1289.6.3.1-2004
4,7,11 N=18	4,7,11 = Blows per 150mm. N = Blows per 300mm penetration following 150mm seating
30/80 mm	Where practical refusal occurs, the blows and penetration for that interval are reported
RW	Penetration occurred under the rod weight only
HW	Penetration occurred under the hammer and rod weight only
HB	Hammer double bouncing on anvil
DS	Disturbed sample
BDS	Bulk disturbed sample
G	Gas Sample
W	Water Sample
FP	Field permeability test over section noted
FV	Field vane shear test expressed as uncorrected shear strength (sv = peak value, sr = residual value)
PID	Photoionisation Detector reading in ppm
PM	Pressuremeter test over section noted
PP	Pocket penetrometer test expressed as instrument reading in kPa
U63	Thin walled tube sample - number indicates nominal sample diameter in millimetres
WPT	Water pressure test
DCP	Dynamic cone penetration test
CPT	Cone penetration test
CPTu	Cone penetration test with pore pressure (u) measurement

RANKING OF VISUALLY OBSERVABLE CONTAMINATION AND ODOUR (for specific soil contamination assessment projects)

R = 0	No visible evidence of contamination	R = A	No non-natural odours identified
R = 1	Slight evidence of visible contamination	R = B	Slight non-natural odours identified
R = 2	Visible contamination	R = C	Moderate non-natural odours identified
R = 3	Significant visible contamination	R = D	Strong non-natural odours identified

ROCK CORE RECOVERY

TCR = Total Core Recovery (%)	RQD = Rock Quality Designation (%)	SCR = Solid Core Recovery (%)	F = Fracture Frequency
$= \frac{\text{Length of core recovered}}{\text{Length of core run}} \times 100$	$= \frac{\sum \text{Axial lengths of core} > 100\text{ mm}}{\text{Length of core run}} \times 100$	$= \frac{\sum \text{Length of cyclindrical core recovered}}{\text{Length of core run}} \times 100$	$= \frac{\text{No. of defects}}{\text{Length of zone (m)}}$

METHOD OF SOIL DESCRIPTION USED ON BOREHOLE AND TEST PIT REPORTS

SYMBOLS

FILL

GRAVEL (GW, GP, GM or GC)

SAND (SW, SP, SM or SC)

SILT (ML or MH)

CLAY (CL, CI or CH)

ORGANIC SOILS (OL, OH or Pt)

COBBLES or BOULDERS

Combinations of these basic symbols may be used to indicate mixed materials such as sandy clay.

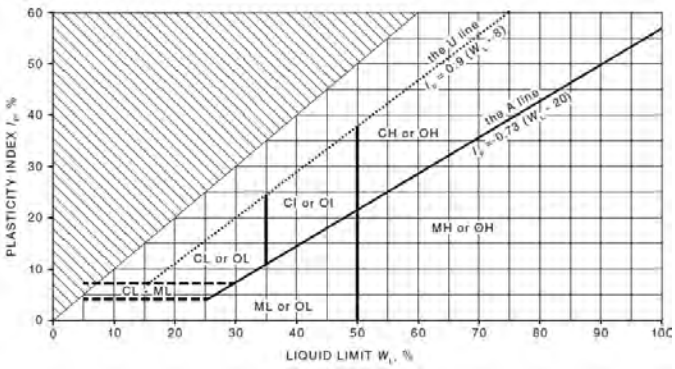
CLASSIFICATION AND INFERRED STRATIGRAPHY

Soil and Rock is classified and described in Reports of Boreholes and Test Pits using the preferred method given in AS1726-2017. The material properties are assessed in the field by visual/tactile methods.

Particle Size

Soil Group	Sub Division	Particle Size
BOULDERS		> 200 mm
COBBLES		63 to 200 mm
GRAVEL	Coarse	19 to 63 mm
	Medium	6.7 to 19 mm
	Fine	2.36 to 6.7 mm
SAND	Coarse	0.6 to 2.36 mm
	Medium	0.21 to 0.6 mm
	Fine	0.075 to 0.21 mm
SILT		0.002 to 0.075 mm
CLAY		< 0.002 mm

Plasticity Properties



MOISTURE CONDITION

Symbol	Term	Description
D	Dry	Sands and gravels are free flowing. Clays and silts may be brittle or friable and powdery.
M	Moist	Soils are darker than in dry condition and may feel cool. Sands and gravels tend to cohere.
W	Wet	Soils exude free water. Sand and gravels tend to cohere.

Moisture condition for fine grained soils is described relative to the plastic limit or liquid limit as specified in AS1726-2017.

CONSISTENCY AND DENSITY

Fine Grained Soils

Symbol	Term	Undrained Shear Strength
VS	Very Soft	0 to 12 kPa
S	Soft	12 to 25 kPa
F	Firm	25 to 50 kPa
St	Stiff	50 to 100 kPa
VSt	Very Stiff	100 to 200 kPa
H	Hard	Above 200 kPa
Fr	Friable	-

Coarse Grained Soils

Symbol	Term	Density Index (%)	SPN "N" *
VL	Very Loose	Less than 15	0 to 4
L	Loose	15 to 35	4 to 10
MD	Medium Dense	35 to 65	10 to 30
D	Dense	65 to 85	30 to 50
VD	Very Dense	Above 85	Above 50

In the absence of test results, consistency and density may be assessed from correlations with the observed behaviour of the material.

* SPT correlations are not stated in AS1726-2017, and may be subject to corrections for overburden pressure and equipment type.

CEMENTATION

Weakly Cemented	The soil may be easily disaggregated by hand in air or water.
Moderately Cemented	Effort is required to disaggregate the soil by hand in air or water.

TERMS FOR ROCK MATERIAL STRENGTH & WEATHERING AND ABBREVIATIONS FOR DEFECT DESCRIPTIONS

STRENGTH

Symbol	Term	UCS (MPa)	Field Guide
VL	Very Low	0.6 to 2	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30 mm can be broken by finger pressure.
L	Low	2 to 6	Easily scored with a knife; indentations 1 mm to 3 mm show in the specimen with firm blows of pick point; has dull sound under hammer. A piece of core 150 mm long by 50 mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
M	Medium	6 to 20	Readily scored with a knife; a piece of core 150 mm long by 50 mm diameter can be broken by hand with difficulty.
H	High	20 to 60	A piece of core 150 mm long by 50 mm diameter cannot be broken by hand but can be broken with pick with a single firm blow; rock rings under hammer.
VH	Very High	60 to 200	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
EH	Extremely High	>200	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Material with strength less than 'Very Low' shall be described using soil characteristics. The presence of an original rock structure, fabric or texture should be noted, if relevant.

ROCK MATERIAL WEATHERING

Symbol		Term	Field Guide
RS		Residual Soil	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
XW		Extremely Weathered	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible.
DW	HW	Highly Weathered	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognizable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
	MW	Moderately Weathered	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognizable, but shows little or no change of strength from fresh rock.
SW		Slightly Weathered	Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
FR		Fresh	Rock shows no sign of decomposition of individual minerals or colour changes.

ABBREVIATIONS FOR DEFECT TYPES AND DESCRIPTIONS

Defect Type		Coating or Infilling		Roughness	
P	Parting	Cn	Clean	VRo	Very Rough
X	Foliation	Sn	Stain	Ro	Rough
L	Cleavage	Ve	Veneer	Sm	Smooth
C	Contact	Ct	Coating	Po	Polished
J	Joint	In	Infill	Sl	Slickensided
SSu	Sheared Surface				
SS	Sheared Seam	**Planarity**			
SZ	Sheared Zone	Pl	Planar		
CS	Crushed Seam	Cv	Curved		
IS	Infilled Seam	Un	Undulating		
EWS	Extremely Weathered Seam	St	Stepped		
V	Vein	Ir	Irregular		

Vertical Boreholes – The dip (inclination from horizontal) of the defect is given.
Inclined Boreholes – The inclination is measured as the acute angle between the core axis and the vertical direction.

Updated in line with Australian Standard Geotechnical Site Investigations (AS1726:2017)

APPENDIX D

Assessment Framework

ADOPTED SOIL ASSESSMENT FRAMEWORK

D1.0 ADOPTED WASTE SOIL CLASSIFICATION FRAMEWORK

The EPA Victoria Industrial Waste Resource Guidelines (IWRG) 2009 provides guidance in relation to the sampling and categorisation of waste soils to be moved off-site for re-use or disposal. Waste classification involves an assessment of the soil, including site history, to identify which contaminants require analysis to determine the hazard category. The assessment must be for all chemical substances known and reasonably expected to be present in the waste.

Industrial waste can be categorised as one of four waste types as outlined in EPA Publication IWRG600.2 (EPA, 2010), *Waste Categorisation*, dated December 2010. In this document, waste material is categorised as either:

- Fill Material;
- Solid Inert Waste from an industrial source;
- Putrescible Waste from an industrial source; or
- Prescribed Industrial Waste.

There are generally no restrictions on the handling of Fill Material and soil meeting Fill Material criteria generally does not require disposal at a licensed landfill. However, the EPA requirements state that the disposal of Fill Material must not give rise to detrimental environmental impacts. If soil disposed as Fill Material is subsequently found to have generated detrimental environmental impacts, then the entities involved in that disposal are at risk of EPA imposed notices and penalties. It is, therefore, usually prudent to check the potential for detrimental environmental impacts by a regime of testing prior to disposal. Soil containing significant quantities of building rubble can be classified as Solid Inert Waste from an industrial source and require disposal to an EPA licensed landfill.

In accordance with EPA Publication IWRG621 (EPA, 2009a), *Soil Hazard Categorisation and Management*, dated June 2009, potentially contaminated soils must be categorised into one of four hazard categories, prior to off-site re-use or disposal. The hazard categories for are as follows:

- Category A (contaminated soil);
- Category B (contaminated soil);
- Category C (contaminated soil); and
- Fill Material.

Descriptions of the threshold limit values (upper limits) of contaminants for these categories are outlined in EPA Publication IWRG621.

The options for the management of waste contaminated soil in these categories are as follows:

- Category A (contaminated soil) – on-site remediation, off-site remediation or storage pending availability of treatment (i.e. immobilisation). Category A (contaminated soil) cannot be disposed to landfill, as there are currently no Victorian facilities licensed to accept Category A (contaminated soil).
- Category B (contaminated soil) or Category C (contaminated soil) – on-site remediation, off-site remediation or disposal to a licensed facility.

Soils with contaminant concentrations which exceed the Fill Material criteria are categorised as Category A, B or C (contaminated soil) and are described as Prescribed Waste under the Environment Protection (Prescribed Waste) (Amendment) Regulations 2007. Transport and disposal of Prescribed Waste is required

to be carried out in vehicles licensed to carry such materials utilising EPA Waste Transport Certificates. Landfill facilities accepting Prescribed Waste will have in place their own processes and procedures to assess the material being received.

There are currently no legislated disposal criteria in relation to PFAS contamination in soils in Victoria. Therefore any material with analytical results which exceed the LOR, can only be disposed via exemption from EPA until such time as EPA sets criteria.

EPA Publication IWRG702 (EPA, 2009b), *Soil Sampling*, dated June 2009, provides guidance on the minimum soil sampling frequencies as follows:

- One sample per 25 m^3 for soil volumes of less than 200 m^3 with a minimum of three samples; and
- One sample per 250 m^3 for soil volumes of greater than 200 m^3 within a minimum of ten samples, where there is sufficient data to calculate the 95% upper confidence limit of the mean.

It is noted that as the volume of soil to be disposed of is currently unknown however as there is currently no basement planned as part of this redevelopment the volume is likely to be minimal.

The framework described above will be superseded once the changes stipulated in the *Environment Protection Amendment Act* 2017 and the *Draft Environmental Protection Regulations* 2019 come into force. These legislative instruments were intended to come into force 1 July 2020, but have been delayed until 1 July 2021 as part of the Covid-19 Omnibus (Emergency Measure) Bill 2020 gazetted in April 2020.

D2.0 ADOPTED HUMAN HEALTH AND ECOLOGICAL SCREENING CRITERIA FOR SOIL

The State Environment Protection Policy (Prevention and Management of Contaminated Land) (Land SEPP) (GoV, 2002) outlines land use categories and specifies beneficial uses which must be protected for each of these categories. In accordance with Golder's understanding of the proposed development, site should be considered a "High Density" sensitive use in accordance with the Land SEPP, as the proposed development will make maximum use of available and space and minimise access to soil by the residents. The beneficial uses which must be protected based upon the proposed land use at the site are presented in Table D1.

Table D1: Protected Beneficial Uses of Land in accordance with the Land SEPP (GoV, 2002)

Beneficial Use	Land Use						
	Parks & Reserves	Agricultural	Sensitive use		Recreation/ Open space	Commercial	Industrial
			High density	Other			
Maintenance of ecosystems:							
Natural ecosystem	✓						
Modified ecosystem	✓	✓		✓	✓		
Highly Modified ecosystem		✓	✓	✓	✓	✓	✓
Human health	✓	✓	✓	✓	✓	✓	✓
Buildings & structures	✓	✓	✓	✓	✓	✓	✓
Aesthetics	✓		✓	✓	✓	✓	
Production of food flora and fibre.	✓	✓		✓			

Note: The column highlighted in green is shows the beneficial uses appropriate for the land use

The Land SEPP outlines indicators and objectives for land, based on the relevant beneficial uses. The adopted soil assessment criteria considered applicable for a "High Density" sensitive use land use are summarised in Table D2.

Table D2: Summary of Adopted Assessment Criteria for Soil

Beneficial Use	Adopted screening criteria
Maintenance of ecosystems *Highly modified ecosystems*	National Environment Protection (Assessment of Site Contamination) (ASC NEPM 1999) - Ecological Investigation Levels (EIL) and Ecological Screening Levels (ESLs) adopting 80% species protection level. In accordance with the amended NEPM 2013 (NEPC, 2013), site-specific EILs have been derived for this assessment. As soil parameters for the calculation of site-specific EILs was not undertaken as part of this assessment, conservative values have been adopted for inner urban soils; clay <10%, CEC 10 cmol/kg, and 0.5% organic carbon. The average pH for the fill and natural horizon were estimated based on the $CaCl_2$ extraction method for soil samples. The threshold limit values (upper limits) of contaminants for the adopted assessment criteria are presented at the end of this document).

Human health	ASC NEMP (1999) Human Health Investigation Levels (HIL) will be adopted for the protection of medium to high density sensitive land use (residential with minimal access to soil HIL B), and CRC Care Technical document 10 Human health screening Levels (HSLs) were adopted. HSLs have been selected with consideration of the soil type and depth of the contamination in relation to the current soil level and potential depth upon construction of a 3 m deep basement. Consideration will also be given to the Management Limits for TPH fraction F1 to F4 for residential, parkland and public open space.
Buildings and structures	Australian Standard AS2159-2009
Aesthetics	Field observations of visual and olfactory impacts

D2.1 Per and poly-fluoroalkyl substances (PFAS)

D2.1.1 Ecological Investigation Levels

The PFAS National Environmental Management Plan (2020), endorsed by the Heads of EPAs (HEPA), provides interim direct and indirect exposure guideline values for ecological protection. The direct exposure guideline value is intended to protect organisms living in, or have close contact with, soil (such as earthworms and plants). It is based on the human health soil criteria for public open spaces.

The indirect exposure soil guideline values are based on the 2017 Canadian Federal Environmental Quality Guidelines (FEQG) (Environmental and Climate Change Canada (ECCC), 2017). The adopted soil guideline values in the NEMP are for residential land use, and as stated in the NEMP they are intended to be protective of the various pathways in which organisms can be exposed due to bioaccumulation and / or off-site transport.

A summary of the ecological soil guidelines recommended in the PFAS for PFOS endorsed by HEPA in the PFAS NEMP are summarised in Table D3.

Table D3: Ecological Soil Criteria for PFAS

Exposure Scenario	PFOS	PFOA
Direct exposure: All land uses (mg/kg)	1	10
Indirect exposure: All land uses (mg/kg)	0.01	-

D2.1.2 Human Health

Soil screening guidance values published by the Heads of EPAs and New Zealand (HEPA) in the PFAS NEMP have been adopted for this assessment. The soil screening guidance values presented in the NEMP have been derived from existing nationally agreed values or in international guidance values where local values are unavailable. Human health soil screening levels were provided for four exposure scenarios as outlined in the Table D4 below. The screening levels were derived using the methodology outlined for Health Investigation Levels A, B, C and D in the National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) 1999, as amended on 2013 (NEPC 2013) and the FSANZ 2017 tolerable daily intakes (TDI) for PFOS and PFOA, with the exception of PFOA in a commercial / industrial exposure scenario is based on the anticipation of the Stockholm Convention low content limit.

The soil screening guidance values for PFOS+PFHxS and PFOA for the four exposure scenarios are provided in Table D4 below. For the purposes of this assessment "Residential with minimal opportunities for soil assess" has been adopted.

Table D4: NEMP (2018) Soil Screening Guideline Values for PFAS

Exposure Scenario	PFOS+PFHxS	PFOA
Residential with garden / accessible soil (mg/kg) (low density residential)	0.009	0.1
Residential with minimal opportunities for soil assess (high density residential) (mg/kg)	2	20
Public open space use (mg/kg)	1	10
Commercial / industrial premises (mg/kg)	20	50

D3.0 ADOPTED HUMAN HEALTH AND ECOLOGICAL SCREENING CRITERIA FOR GROUNDWATER

The State Environment Protection Policy (Waters) (Waters SEPP) (GoV, 2018) outlines groundwater segments and specifies beneficial uses which must be protected for each of these categories. A groundwater segment is based on the total dissolved solids (TDS) range of the groundwater in mg/L, as shown in Table D5 below.

Table D5: Protected Beneficial Uses of groundwater in accordance with the Water SEPP (GoV, 2018)

BENEFICIAL USE	SEGMENT (TDS mg/L)						
	A1 (0-600)	A2 (601-1,200)	B (1,201-3,100)	C (3,101-5,400)	D (5,401-7,100)	E (7,101-10,000)	F (>10,001)
Water dependent ecosystems and species	✓	✓	✓	✓	✓	✓	✓
Potable water supply (desirable)	✓						
Potable water supply (acceptable)		✓					
Potable mineral water supply	✓	✓	✓	✓			
Agriculture and irrigation (irrigation)	✓	✓	✓				
Agriculture and irrigation (stock watering)	✓	✓	✓	✓	✓	✓	
Industrial and commercial	✓	✓	✓	✓	✓		
Water-based recreation (primary contact recreation)	✓	✓	✓	✓	✓	✓	✓

BENEFICIAL USE	SEGMENT (TDS mg/L)						
	A1 (0-600)	A2 (601-1,200)	B (1,201-3,100)	C (3,101-5,400)	D (5,401-7,100)	E (7,101-10,000)	F (>10,001)
Traditional Owner cultural values	✓	✓	✓	✓	✓	✓	✓
Cultural and spiritual values	✓	✓	✓	✓	✓	✓	✓
Buildings and structures	✓	✓	✓	✓	✓	✓	✓
Geothermal properties	✓	✓	✓	✓	✓	✓	✓

The groundwater samples for the site were reported to range from 705 mg/L to 5 413 mg/L. A salinity value in this range is conservatively classified as Segment A2. The protected beneficial uses of groundwater at the site and the adopted assessment criteria are presented in **Table D6** below.

Table D6: Protected Beneficial uses and Adopted Assessment Criteria

Protected Beneficial Use for Segment C	Adopted Assessment Criteria
Water dependent ecosystems and species	ANZECC 2000 (Maintenance of Ecosystems, 95% Protection)
Potable mineral water supply	Australian drinking Water Guidelines (ADWG) (NHMRC, 2011)
Potable water supply (acceptable)	Australian drinking Water Guidelines (ADWG) (NHMRC, 2011)
Agriculture and irrigation (irrigation)	ANZECC 2000 (GW Long-Term Irrigation Water Protection)
Industrial and commercial	Industrial water use criteria vary widely depending on the type of industry. It was assumed that comparison to the criteria for more sensitive beneficial uses would provide an indication of whether this beneficial use would be affected.
Water-based recreation (primary contact recreation)	Guidelines for Managing Risk in Recreational Water (GMRRW) NHMRC, 2008 (Primary contact for bathing and swimming). Water quality criteria for inorganic contaminants are based on the drinking water criteria with a factor of 10 to allow for lower rates of ingestion during primary contact recreation.
Traditional Owner cultural values	There are no guidelines specifically available for the protection of Traditional Owner cultural values, however it is anticipated that by protecting human health and ecosystem this beneficial use will be adequately addressed.
Cultural and spiritual values	As above with Traditional Owner Cultural Values.
Buildings and structures.	Australian Standard AS2159-2009, Piling Design and Installation

Protected Beneficial Use for Segment C	Adopted Assessment Criteria
Geothermal properties	Groundwater temperatures at the site ranged between 17 and 19 °C, and the site is outside known geothermal areas. Therefore, this beneficial land use is not realised at the site.

D4.0 REFERENCES

ANZECC and Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ), 2000. Australian and New Zealand Guidelines for Fresh and Marine Water Quality, National Water Quality Management Strategy

Australian Government, 2018. Australian & New Zealand Guidelines for Fresh & Marine Water Quality Website. http://waterquality.gov.au/anz-guidelines.

Australian Standard AS2159-2009

Department of Health, 2018. Per- and poly-fluoroalkyl substances (PFAS): health effects and exposure pathways. Australian Government, Canberra. Available at https://www1.health.gov.au/internet/main/publishing.nsf/Content/2200FE086D480353CA2580C900817CDC/$File/HBGV-Factsheet-20190911.pdf

Environment and Climate Change Canada (ECCC), 2018. Canadian Environmental Protection Act 1999 Federal Environmental Quality Guidelines Perfluorooctane Sulfonate (PFOS). May 2018. Government of Canada, Gatineau. Available at https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/federal-environmental-quality-guidelines-perfluorooctane-sulfonate.html.

EPA Publication IWRG621 (EPA, 2009a), Soil Hazard Categorisation and Management, dated June 2009

EPA Publication IWRG702 (EPA, 2009b), Soil Sampling, dated June 2009

Friebel, E & Nadebaum, P 2011, Health screening levels for petroleum hydrocarbons in soil and groundwater. CRC Care Technical Report no. 10, CRC for Contamination Assessment and Remediation of the Environment Adelaide, Australia

Heads of EPA Australia and New Zealand 2020, PFAS National Environmental Management Plan Version 2.0

National Environment Protection (Assessment of Site Contamination) Measure 1999

NHMRC, NRMMC (2011) Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra.

State Environment Protection Policy (Prevention and Management of Contaminated Land) (Land SEPP) (GoV, 2002)

State Environment Protection Policy (Waters) (Waters SEPP) (GoV, 2018)

Inputs
Select contaminant from list below
As
Below needed to calculate fresh and aged ACLs
Below needed to calculate fresh and aged ABCs
or for fresh ABCs only
or for aged ABCs only

Outputs		
Land use	Arsenic generic EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	20	40
Urban residential and open public spaces	50	100
Commercial and industrial	80	160

Inputs
Select contaminant from list below
Cr_III
Below needed to calculate fresh and aged ACLs
Enter % clay (values from 0 to 100%)
10
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
or for aged ABCs only
Enter State (or closest State)
VIC
Enter traffic volume (high or low)
high

Outputs		
Land use	Cr III soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	140
Urban residential and open public spaces	#NUM!	410
Commercial and industrial	#NUM!	670

Inputs
Select contaminant from list below
Cu
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
10
Enter soil pH (calcium chloride method) (values from 1 to 14)
5.8
Enter organic carbon content (%OC) (values from 0 to 50%)
10
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
or for aged ABCs only
Enter State (or closest State)
VIC
Enter traffic volume (high or low)
low

Outputs		
Land use	Cu soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	65
Urban residential and open public spaces	#NUM!	170
Commercial and industrial	#NUM!	250

Inputs
Select contaminant from list below
Naphthalene
Below needed to calculate fresh and aged ACLs
Below needed to calculate fresh and aged ABCs
or for fresh ABCs only
or for aged ABCs only

Outputs		
Land use	Naphthalene generic EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	10	10
Urban residential and open public spaces	170	170
Commercial and industrial	370	370

Inputs
Select contaminant from list below
Ni
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
10
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
or for aged ABCs only
Enter State (or closest State)
VIC
Enter traffic volume (high or low)
high

Outputs		
Land use	Ni soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	40
Urban residential and open public spaces	#NUM!	180
Commercial and industrial	#NUM!	300

Inputs
Select contaminant from list below
Pb
Below needed to calculate fresh and aged ACLs
Below needed to calculate fresh and aged ABCs
or for fresh ABCs only
or for aged ABCs only

Outputs		
Land use	Lead generic EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	110	470
Urban residential and open public spaces	270	1100
Commercial and industrial	440	1800

Inputs
Select contaminant from list below
Zn
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
10
Enter soil pH (calcium chloride method) (values from 1 to 14)
5.8
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
or for aged ABCs only
Enter State (or closest State)
VIC
Enter traffic volume (high or low)
high

Outputs		
Land use	Zn soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	130
Urban residential and open public spaces	#NUM!	400
Commercial and industrial	#NUM!	590

APPENDIX E

Groundwater Sampling Records

COPY OF RECORD IN THE VICTORIAN WATER REGISTER

LICENCE TO CONSTRUCT WORKS

under Section 67 of the Water Act 1989

The information in this copy of record is as recorded at the time of printing. Current information should be obtained by a search of the register. The State of Victoria does not warrant the accuracy or completeness of this information and accepts no responsibility for any subsequent release, publication or reproduction of this information.

This licence does not remove the need to apply for any authorisation or permission necessary under any other Act of Parliament with respect to anything authorised by the works licence.

Water used under this licence is not fit for any use that may involve human consumption, directly or indirectly, without first being properly treated.

This licence is not to be interpreted as an endorsement of the design and/or construction of any works (including dams). The Authority does not accept any responsibility or liability for any suits or actions arising from injury, loss, damage or death to person or property which may arise from the maintenance, existence or use of the works.

Each person named as a licence holder is responsible for ensuring all the conditions of this licence are complied with.

This licence authorises its holders to construct the described works, subject to the conditions.

Licence Holder(s)

DEPARMENT OF HEALTH AND HUMAN SERVICES of 120 RACECOURSE RD FLEMINGTON VIC 3031

Licence Contact Details

DEPARMENT OF HEALTH AND HUMAN SERVICES	120 RACECOURSE RD FLEMINGTON VIC 3031

Licence Details

Expiry date	28 Aug 2021
Status	Active
Authority	Southern Rural Water
Name of waterway or aquifer	NA for construct/decommission
Water system	Unincorporated (GMU)

Summary of Licensed Works

The details in this section are a summary only. They are subject to the conditions specified in this licence.

Works ID	*Works type*	*Use of water*
WRK122312	Bore	Observation
WRK122313	Bore	Observation
WRK122314	Bore	Observation
WRK122315	Bore	Observation
WRK122316	Bore	Observation
WRK122317	Bore	Observation

Description of Licensed Works

WORKS ID WRK122312

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
327557.593	5810280.313	Zone 55

Land description

Volume 8167 Folio 033
Lot 1 of Plan TP242273Y

Property address

4/6 BILLS STREET, HAWTHORN, VIC 3122

Description of Licensed Works

WORKS ID WRK122313

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
327631.791	5810271.900	Zone 55

Land description

Volume 8167 Folio 033
Lot 1 of Plan TP242273Y

Property address

4/6 BILLS STREET, HAWTHORN, VIC 3122

Description of Licensed Works

WORKS ID WRK122314

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
327640.140	5810349.097	Zone 55

Land description
Volume 8167 Folio 033
Lot 1 of Plan TP242273Y

Property address
4/6 BILLS STREET, HAWTHORN, VIC 3122

Description of Licensed Works

WORKS ID WRK122315

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
327570.834	5810362.617	Zone 55

Land description
Volume 8167 Folio 033
Lot 1 of Plan TP242273Y

Property address
4/6 BILLS STREET, HAWTHORN, VIC 3122

Description of Licensed Works

WORKS ID WRK122316

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
327615.174	5810300.551	Zone 55

Land description
Volume 8167 Folio 033
Lot 1 of Plan TP242273Y

Property address
4/6 BILLS STREET, HAWTHORN, VIC 3122

Description of Licensed Works

WORKS ID WRK122317

Works type	Bore
Works subtype	Drilled bore
Proposed maximum depth	30.000 metres

Works location

Easting	*Northing*	*Zone MGA*
327587.580	5810327.967	Zone 55

Land description

Volume 8167 Folio 033
Lot 1 of Plan TP242273Y

Property address

4/6 BILLS STREET, HAWTHORN, VIC 3122

Related Instruments

Related entitlements	Nil
Related water-use entities	Nil

Application History

Reference	*Type*	*Status*	*Lodged date*	*Approved date*	*Recorded date*
WLI613351	Issue	Approved	28 Aug 2020	28 Aug 2020	

Conditions

Licence WLE079046 is subject to the following conditions:

Siting and construction

1 The bore(s) must be drilled at the location specified in the application approved by the Authority.

2 If after drilling the bore is considered unsatisfactory a replacement bore may be drilled on the land specified in the licence.

Preventing pollution

3 All earthworks must be carried out, and all drilling fluids and waters produced during construction and development must be disposed of, in ways that avoid contaminating native vegetation, waterways, aquifers, the riparian environment, the riverine environment or other people's property.

4 Construction must stop immediately if the Authority reasonably believes that fuel, lubricant, drilling fluid, soil or water produced during construction and development is at risk of being spilled into native vegetation, waterways, aquifers, the riparian environment, the riverine environment or other people's property.

5 The licence holder must construct and maintain bund walls, in accordance with the timeframe, specifications, guidelines or standards prescribed by the Authority, to prevent fuel, lubricant, drilling fluid, soil or water produced during construction and development from being spilled into native vegetation, waterways, aquifers, the riparian environment, the riverine environment or other people's property.

Construction standards

6 The bore(s) must be constructed, and where relevant decommissioned, in accordance with the Minimum Construction Requirements for Water Bores in Australia, Edition 3 or its successor.

Drilling licence and supervision requirements

7 The bore(s) must be constructed by, or under the direct supervision of, a driller licensed under the Water Act 1989 and endorsed as a Class 1, 2, or 3 driller, with appropriate endorsements.

8 If artesian pressure is expected or encountered, then a driller licensed under the Water Act 1989, and endorsed as a class 3 driller, must install casing in the bore(s) to a suitable depth, and in a suitable manner, to prevent its outbreak. A suitable valve must also be fitted to the bore.

Bore completion report

9 A Bore Completion Report must be submitted to the Authority within 28 working days of the bore(s) being completed.

Protecting water resources

10 No more than 6 bore(s) may be brought to final development under this licence.

11 At the completion of drilling and before the drilling rig leaves the site, all but 6 bore(s) must be decommissioned so as to eliminate physical hazards, conserve aquifer yield, prevent groundwater contamination and prevent the intermingling of desirable and undesirable waters.

12 The bore(s) must be located at least 30 metres from any authority's channel, reserve or easement unless authorised by the Authority.

Protecting water quality

13 Drilling must not exceed the maximum depth.

14 The bore(s) must be constructed so as to prevent aquifer contamination caused by vertical flow outside the casing.

15 If two or more aquifers are encountered, the bore(s) must be constructed to ensure that an impervious seal is made and maintained between each aquifer to prevent aquifer connection through vertical flow outside the casing; under no circumstances are two or more aquifers to be screened within the one bore or in any other manner to allow connection between them.

16 Boreheads must be constructed, to ensure that no flood water, surface runoff or potential

subsurface contaminated soakage can enter the bore or bore annulus.

Protecting other water users

17 The diameter of the drill casing must not exceed 130 millimetres.

18 The bore(s) must be constructed so that water levels in the bore(s) can be measured by an airline, a piezometer or a method approved in writing by the Authority.

Fees and charges

19 The licence holder must, when requested by the Authority, pay all fees, costs and other charges under the Water Act 1989 in respect of this licence.

END OF COPY OF RECORD

PROJECT	DHHS
PROJ. NUM	20145767
Golder Staff	SHZ
Devel. Method	Bailing

BH	Date of measurment	Depth to Water (m)	Measure Depth of Well (m)	Metres of Standing Water (D=B-A)	Well Casing Volume (E=DX2)	Total Volume to be Pumped (L)	Total bailed Volume (L)	Apperance (colour/clarity)	Odour	Final Measured Depth of Well from TOC (m) (24/09/2020)
GA20-BH01	21/09/2020	1.5	10	8.5	17	170	25	blured pale brown	N/A	9
GA20-BH03	22/09/2020	4.5	12	7.5	15	150	90	blured pale yellow brown	N/A	9.3
GA20-BH05	8/09/2020	3	10.15	7.15	14.3	143	65	blured pale yellow brown	N/A	8.6
GA20-BH09	9/09/2020	5.2	10	4.8	9.6	96	50	blured pale yellow brown	N/A	5.6
GA20-BH10	24/09/2020	0	10	10	20	200	90	blured pale yellow brown	N/A	-
GA20-BH12	15/09/2020	2.3	10.1	7.8	15.6	156	70	blured pale grey brown	N/A	4.5

GOLDER

Well Gauging

Weather (Cloud Cover/ Temp etc): 19°c, sunny

Project No: 20145767

Golder Staff: TWR

Low Tide (time & meters): -

Dipper/ IP: Geotech Interface Probe 5320

	Well ID	Date	Time	DTP (mbtoc)	DTW (mbtoc)	DTB (mbtoc)	Comment (colour/ odour)
GA20-	BH01	1/10/2020	7:35	—	9.010	9.850	TOC is level with soil in Gabic.
GA20-	BH03	1/10/2020	7:40	—	8.404	11.973	" "
GA20-	BH09	1/10/2020	7:45	—	5.250	11.570	Soft Bow
GA20-	BH12	1/10/2020	7:50	—	4.268	10.213	—
GA20-	BH05	1/10/2020	8:00	—	8.189	10.000	—
GA20-	BH10	1/10/2020	8:10	—	5.150	9.935	Soft Bow

Notes to table:

DTP = depth to product

mbtoc = metres below top of casing

DTW = depth to water

DTB = depth to base

IP = interface probe

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
WELL ID: GA20-13101	Project Number: 20145767	Date: 1/10/2020	
	Client: DHHS	Sampled By: TWR	
	Site Location: Hawthorn	Time: 14:25	

Weather Conditions (Temperature, Precipitation, Wind): 19°C, Sunny

Well Maintenance Required? YES / NO (NO circled) Detail

WELL INFORMATION	
Diameter of standpipe (mm)	50
Standpipe stick up (m)	-0.1
Surveyed reference point	TOC
Depth to top of filter pack (from log)	4.0
Depth to bottom of filter pack (from log)	10.0
Depth of well (from log)	14.57

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		*Purging and Sampling Information*	
Interface probe used?	YES / NO (YES circled)	Depth of pump intake (mbRP)	9.435 → 9.475 Bow
Initial depth to water (mbRP)	9.011	Length of hose (m)	17.5
Depth to product (mbRP)	–	Volume in hose (L)	1.225
Thickness of product (m)	–	Depth to water after placement of pump (mbRP)	8.834
Bailed product thickness (m)	–	Depth to water at end of purging (mbRP)	
Total depth of well (mbRP)	9.850	Depth to water after collection of samples (mbRP)	
Thickness of sediment on base of well (m)	–	Purging and Sampling Method	low flow

Controller settings		
CPM	1	1
Refill	50	97
Discharge	10	13
Throttle	38 PSI	38 PSI

WQM Model: YSI ProPlus 18L101818

WQM Calibration Certificate: Airmet 28-Sep-2020

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)	
14:30	–	0.1	8.834	–	–	–	–	–	–	
14:35	0.5	0.1	9.219	8.16	1276	88.5	3.83	21.4	Brown, high turbidity, no odour.	→ Paused to call Matt. Sheppa
14:55	1.0	0.05	9.366	6.66	1547	80.6	3.87	23.1	"	"
Dropped cycle rate. → 15:00	1.25	0.05	9.443	6.35	1687	84.1	3.80	24.7	"	"
15:05	1.50	0.05	79.48	6.41	935	84.2	3.95	24.7	"	→ Paused for 20min
15:40			79.48	→	Bailed Dry	→	Dry		Before bailer was sent down	
2/10/2020										
7:15			9.759	Dry well	→	no	Sample taken.			

SAMPLING RECORD

Time Sampled:
Colour:
Odour:
Turbidity: Low Medium High
Hydrocarbon Sheen ? Yes No
DI Water Lab Certificate No.

Sample IDs
Primary Duplicate:
Secondary Duplicate:
Trip Blank:
Rinsate:
Field Blank:

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)
Vials (P/UP)
1L Amber
1L Plastic
Phenols/COD/NH3 (F/UF; P/UP)
Ferrous/Ferric Iron (F/UF; P/UP)
Metals (F/UF;P/UP)
Cyanide
Sulphide
Other
Other

Notes:

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
WELL ID: GA20-BH03	Project Number: 20145767	Date: 1/10/2020	
	Client: DHHS	Sampled By: TWR	
	Site Location: Hawthorn	Time: 13:05	

Weather Conditions (Temperature, Precipitation, Wind): 19°c, sunny

Well Maintenance Required? YES (NO) Detail

WELL INFORMATION	
Diameter of standpipe (mm)	50
Standpipe stick up (m)	-0.1
Surveyed reference point	TOC
Depth to top of filter pack (from log)	6.0
Depth to bottom of filter pack (from log)	12.0
Depth of well (from log)	15.45

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		Purging and Sampling Information	
Interface probe used?	(YES) NO	Depth of pump intake (mbRP)	10.460
Initial depth to water (mbRP)	8.408	Length of hose (m)	11.5
Depth to product (mbRP)	–	Volume in hose (L)	0.805
Thickness of product (m)	–	Depth to water after placement of pump (mbRP)	8.316
Bailed product thickness (m)	–	Depth to water at end of purging (mbRP)	8.945
Total depth of well (mbRP)	11.973	Depth to water after collection of samples (mbRP)	9.222
Thickness of sediment on base of well (m)	–	Purging and Sampling Method	low flow

Controller settings	
CPM	1
Refill	40
Discharge	20
Throttle	31 PSI

WQM Model: YSI Pro Plus 18L101818

WQM Calibration Certificate: Airmet 28-Sep-2020

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
13:10	–	0.1	8.316	–	–	–	–	–	–
13:15	0.5	0.1	8.448	7.76	4942	98.7	1.96	18.3	Clear, low turbidity, no odour.
13:20	1.0	0.1	8.519	6.56	5027	101.8	2.40	18.4	" "
13:25	1.5	0.1	8.595	6.27	4961	103.7	2.92	18.2	" "
13:30	2.0	0.1	8.649	6.19	4880	103.5	2.60	18.2	" "
13:35	2.5	0.1	8.738	6.17	4813	100.8	3.09	18.2	" "
13:40	3.0	0.1	8.823	6.12	4734	97.1	2.60	18.2	" "
13:45	3.5	0.1	8.918	6.08	4758	94.1	2.77	18.2	" "
13:50	4.0	0.1	8.945	6.03	4720	93.1	2.89	18.3	" "

SAMPLING RECORD

Time Sampled: 13:55
Colour: Clear
Odour: none
Turbidity: (Low) Medium High
Hydrocarbon Sheen ? Yes (No)
DI Water Lab Certificate No. –

Sample IDs: GA20-BH03 / 50011020
Primary Duplicate:
Secondary Duplicate:
Trip Blank:
Rinsate:
Field Blank:

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2	Vials (P/UP)	1	Metals (F/UF/P/UP)
1	L Amber 100mL	–	Cyanide
2	L Plastic 500mL	–	Sulphide
1	Phenols/COD/NH3 (F/UF; P/UP)	–	Other
–	Ferrous/Ferric Iron (F/UF; P/UP)	–	Other

Notes:

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
WELL ID: GA20-BH05	Project Number: 20145787	Date: 1/10/20	
	Client: DHHS	Sampled By: TWR	
	Site Location: Hawthorn.	Time: 10:45	

Weather Conditions (Temperature, Precipitation, Wind): 19°c, Sunny

Well Maintenance Required? YES / (NO) Detail

WELL INFORMATION	
Diameter of standpipe (mm)	50
Standpipe stick up (m)	-0.1
Surveyed reference point	TOC
Depth to top of filter pack (from log)	4.0
Depth to bottom of filter pack (from log)	10.0
Depth of well (from log)	15.52

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		*Purging and Sampling Information*	
Interface probe used?	(YES) / NO	Depth of pump intake (mbRP)	9.615
Initial depth to water (mbRP)	8.190	Length of hose (m)	10.5
Depth to product (mbRP)	-	Volume in hose (L)	0.735
Thickness of product (m)	-	Depth to water after placement of pump (mbRP)	8.036
Bailed product thickness (m)	-	Depth to water at end of purging (mbRP)	8.987
Total depth of well (mbRP)	10.00	Depth to water after collection of samples (mbRP)	9.445
Thickness of sediment on base of well (m)	-	Purging and Sampling Method	lowflow

Controller settings	
CPM	1
Refill	40
Discharge	20
Throttle	30 PSI

WQM Model: YSI Pro Plus 18L101818

WQM Calibration Certificate: AiMev 28-Sep-20

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
10:50	-	0.1	8.036	-	-	-	-	-	-
10:55	0.5	0.1	8.305	6.77	6131	60.4	2.04	16.7	Pale brown, low turbidity, no odour.
11:00	1.0	0.1	8.417	6.37	5987	88.3	1.61	16.6	" "
11:05	1.5	0.1	8.538	6.14	5816	105.5	2.00	16.4	" "
11:10	2.0	0.1	8.616	6.06	5690	113.7	3.33	16.5	" "
11:15	2.5	0.1	8.709	5.94	5745	126.9	2.71	16.5	" "
11:20	3.0	0.1	8.817	5.83	5854	127.0	3.47	16.6	" "
11:25	3.5	0.1	8.902	5.77	5852	131.4	3.55	16.6	" "
11:30	4.0	0.1	8.987	5.72	5854	134.9	3.45	16.6	" "

SAMPLING RECORD

Time Sampled: 11:35
Colour: Pale Brown
Odour: none
Turbidity: (Low) Medium High
Hydrocarbon Sheen ? Yes (No)
DI Water Lab Certificate No. -

Sample IDs: GA20-BH05 / 50011020 (7 bottles)

Primary Duplicate:
Secondary Duplicate:
Trip Blank:
Rinsate:
Field Blank:

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2	Vials (P/UP)	1	Metals (F/UF/P/UP)
1	Amber 100mL	-	Cyanide
2	Plastic 500mL	-	Sulphide
1	Phenols/COD/NH3 (F/UF; P/UP)	-	Other
-	Ferrous/Ferric Iron (F/UF; P/UP)	-	Other

Notes:

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
Project Number:	20145767	Date:	1/10/20
Client:	DHU	Sampled By:	TWR
Site Location:	Hawthorn.	Time:	11:55

WELL ID: GA20-BH09

Weather Conditions (Temperature, Precipitation, Wind): 19°c, Sunny

Well Maintenance Required? YES / (NO) Detail

WELL INFORMATION	
Diameter of standpipe (mm)	50
Standpipe stick up (m)	-0.1
Surveyed reference point	TOC
Depth to top of filter pack (from log)	4.0
Depth to bottom of filter pack (from log)	10.0
Depth of well (from log)	16.85

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		Purging and Sampling Information	
Interface probe used?	(YES) NO	Depth of pump intake (mbRP)	8.125
Initial depth to water (mbRP)	5.292	Length of hose (m)	9.0
Depth to product (mbRP)	–	Volume in hose (L)	0.63
Thickness of product (m)	–	Depth to water after placement of pump (mbRP)	5.126
Bailed product thickness (m)	–	Depth to water at end of purging (mbRP)	5.504
Total depth of well (mbRP)	11.570	Depth to water after collection of samples (mbRP)	5.694
Thickness of sediment on base of well (m)	present	Purging and Sampling Method	low flow

Controller settings	
CPM	1
Refill	40
Discharge	20
Throttle	27 PSI

WQM Model: YSI Pro Plus 18C101818

WQM Calibration Certificate: Airmer 28-Sep-2020

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
12:00	–	0.1	5.126	–	–	–	–	–	–
12:05	0.5	0.1	5.445	6.79	8256	98.9	0.98	16.8	Pale brown, Med turbidity, no odour
12:10	1.0	0.1	5.523	6.68	8431	91.2	1.55	16.8	" "
12:15	1.5	0.1	5.534	6.63	8440	91.7	1.77	16.8	" "
12:20	2.0	0.1	5.513	6.59	8452	91.3	2.00	17.0	" "
12:25	2.5	0.1	5.495	6.55	8451	91.5	2.22	16.9	" ", low turbidity, " "
12:30	3.0	0.1	5.515	6.49	8456	91.4	2.12	16.8	" "
12:35	3.5	0.1	5.504	6.48	8459	90.7	2.23	16.7	" "

SAMPLING RECORD

Time Sampled: 12:40
Colour: Pale brown.
Odour: None
Turbidity: (Low) Medium High
Hydrocarbon Sheen ? Yes / (No)
DI Water Lab Certificate No. –

Sample IDs: GA20-BH09/50011020 (7 bottles)
Primary Duplicate:
Secondary Duplicate:
Trip Blank:
Rinsate:
Field Blank:

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2	Vials (P/UP)	1	Metals (F/UF/P/UP)
1	1L Amber 100mL	–	Cyanide
2	1L Plastic 500mL	–	Sulphide
1	Phenols/COD/NH3 (F/UF; P/UP)	–	Other
–	Ferrous/Ferric Iron (F/UF; P/UP)	–	Other

Notes:

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
WELL ID: GA20-BH10	Project Number: 2014 5767	Date: 1/10/20	
	Client: DHHS	Sampled By: TWR	
	Site Location: Hawthorn	Time: 8:20	

Weather Conditions (Temperature, Precipitation, Wind): 19°c, Sunny

Well Maintenance Required? YES / NO (NO circled) Detail

WELL INFORMATION	
Diameter of standpipe (mm)	50
Standpipe stick up (m)	-0.1
Surveyed reference point	TOC
Depth to top of filter pack (from log)	/
Depth to bottom of filter pack (from log)	
Depth of well (from log)	

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		Purging and Sampling Information	
Interface probe used?	YES / NO (YES circled)	Depth of pump intake (mbRP)	7.935
Initial depth to water (mbRP)	5.150	Length of hose (m)	9.0
Depth to product (mbRP)	–	Volume in hose (L)	0.63
Thickness of product (m)	–	Depth to water after placement of pump (mbRP)	4.990
Bailed product thickness (m)	–	Depth to water at end of purging (mbRP)	5.952
Total depth of well (mbRP)	9.935	Depth to water after collection of samples (mbRP)	7.348
Thickness of sediment on base of well (m)	present	Purging and Sampling Method	low flow

Controller settings	
CPM	1
Refill	40
Discharge	20
Throttle	29 PSI

WQM Model: YSI Pro Plus 18L/0/818

WQM Calibration Certificate: AiMer 28-Sep-2020

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
8:25	–	0.1	4.990	–	–	–	–	–	–
8:30	0.5	0.1	5.200	7.33	1639	85.3	4.76	16.9	Pale brown, med turbidity, no odour.
8:35	1.0	0.1	5.318	7.05	1696	77.8	5.71	17.2	" "
8:40	1.5	0.1	5.482	6.73	1693	77.7	3.66	17.4	" "
8:45	2.0	0.1	5.575	6.53	1677	80.3	6.84	17.7	" "
8:50	2.5	0.1	5.695	6.43	1667	82.3	6.00	17.8	" "
8:55	3.0	0.1	5.792	6.37	1635	85.0	6.11	17.4	" "
9:00	3.5	0.1	5.902	6.30	1626	87.4	6.23	17.4	" "
9:05	4.0	0.1	5.952	6.26	1633	88.7	5.91	17.4	" "

SAMPLING RECORD

Time Sampled: 9:10.
Colour: Pale brown
Odour: none
Turbidity: Low / Medium (Medium circled) / High
Hydrocarbon Sheen ? Yes / No (No circled)
DI Water Lab Certificate No. –

Sample IDs GA20-BH10/50011020 (7 bottle)
Primary Duplicate: GA20-BH10/58011020 (7 bottle)
Secondary Duplicate: GA20-BH10/59011020 (7 bottle)
Trip Blank: –
Rinsate: –
Field Blank: –

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2+2+2	Vials (P/UP)	1+1+1	Metals (F/UF; P/UP)
1+1+1	2 Amber 160mL	–	Cyanide
2+2+2	1 Plastic 500mL	–	Sulphide
1+1+1	Phenols/COD/NH3 (F/UF; P/UP)	–	Other
–	Ferrous/Ferric Iron (F/UF; P/UP)	–	Other

Notes:

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
WELL ID: GA20-BH12	Project Number: 20145787	Date: 1/10/2020	
	Client: DHHS	Sampled By: TWR	
	Site Location: Hawthorn	Time: 9:40	

Weather Conditions (Temperature, Precipitation, Wind): 19°C, Sunny

Well Maintenance Required? YES / (NO) Detail

WELL INFORMATION	
Diameter of standpipe (mm)	50
Standpipe stick up (m)	-0.11
Surveyed reference point	TOC
Depth to top of filter pack (from log)	4.10
Depth to bottom of filter pack (from log)	10.0
Depth of well (from log)	17.2

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		*Purging and Sampling Information*	
Interface probe used?	(YES) / NO	Depth of pump intake (mbRP)	7.00
Initial depth to water (mbRP)	4.281	Length of hose (m)	8.00
Depth to product (mbRP)	–	Volume in hose (L)	0.56
Thickness of product (m)	–	Depth to water after placement of pump (mbRP)	3.999
Bailed product thickness (m)	–	Depth to water at end of purging (mbRP)	4.884
Total depth of well (mbRP)	10.213	Depth to water after collection of samples (mbRP)	5.196
Thickness of sediment on base of well (m)	–	Purging and Sampling Method	low flow

Controller settings	
CPM	1
Refill	40
Discharge	20
Throttle	25 PSI

WQM Model: YSI Pro Plus 18L101818

WQM Calibration Certificate: Airmel 28-Sep-2020

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
9:45	–	0.1	3.999	–	–	–	–	–	–
9:50	0.5	0.1	4.419	6.43	1107	100.2	3.43	17.0	Clear, low turbidity, no odour.
9:55	1.0	0.1	4.474	6.27	1098	108.4	5.69	16.7	" "
10:00	1.5	0.1	4.564	6.11	1090	119.0	6.62	16.4	" "
10:05	2.0	0.1	4.670	6.05	1100	129.1	4.64	16.8	" "
10:10	2.5	0.1	4.758	6.01	1094	133.9	4.31	16.6	" "
10:15	3.0	0.1	4.831	5.97	1103	139.9	4.78	16.7	" "
10:20	3.5	0.1	4.884	5.97	1102	138.2	4.26	16.7	" "

SAMPLING RECORD

Time Sampled: 10:25
Colour: clear
Odour: none
Turbidity: (Low) Medium High
Hydrocarbon Sheen ? Yes (No)
DI Water Lab Certificate No. –
Notes:

Sample IDs: GA20-BH12/50011020 (7 bottles)
Primary Duplicate: –
Secondary Duplicate: –
Trip Blank: –
Rinsate: GA20-BH12/55011020 (5 bottles)
Field Blank: –

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2+2	Vials (P/UP)	1+1	Metals (F/UF;P/UP)
1+1	Amber 100mL	–	Cyanide
2	Plastic 500mL	–	Sulphide
1+1	Phenols/COD/NH3 (F/UF; P/UP)	–	Other
–	Ferrous/Ferric Iron (F/UF; P/UP)	–	Other

GAP FORM 60-1 / RL 1
FEBRUARY 2018

Expiry date:
Rinsate water: 8/11/2020 Batch no. M0713 (volatiles)
28/11/2020 Batch no M0721 (metals, etc)

APPENDIX F

Laboratory Certificates

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	mshepp[illegible]ard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

Containers: Change container type & size if necessary.

Required Turnaround Time (TAT): Default will be 5 days if not ticked.

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	HAW-TP01/1001/0.0-0.1	3/09/20	Soil	X	X									
2	HAW-TP01/1002/0.4-0.5	3/09/20	Soil											
3	HAW-TP01/1003/0.7-0.8	3/09/20	Soil	X										
4	HAW-TP01/1004/0.9-1.0	3/09/20	Soil											
5														
6	HAW-TP02/1001/0.0-0.1	3/09/20	Soil	X	X									
7	HAW-TP02/1801/0.0-0.1	3/09/20	Soil	X										
8	HAW-TP02/1901/0.0-0.1	3/09/20	Soil	To be forwarded to ALS										
9	HAW-TP02/1002/0.3-0.4	3/09/20	Soil	X										
10	HAW-TP02/1003/0.7-0.8	3/09/20	Soil	X										
	Add Rows		Total Counts	6	2									

Method of Shipment	☑ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Matt Sheppard	Signature		Date	4/09/2020	Time	12:00:00 AM
Laboratory Use Only	Received By	Jake	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	4/9	Time	5:22	Temperature	7.4
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	742353

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

CHAIN OF CUSTODY RECORD

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
EnviroSampleQLD@eurofins.com

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

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

Containers: Change container type & size if necessary

Required Turnaround Time (TAT): Default will be 5 days if not ticked.

☐ Overnight (reporting by 9am)♦ (♦Surcharge will apply)
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	HAW-TP03/1001/0.0-0.1	3/09/20	Soil	X	X									
2	HAW-TP03/1002/0.4-0.5	3/09/20	Soil	X										
3	HAW-TP03/1003/0.9-1.0	3/09/20	Soil	X										
4	HAW-TP04/1001/0.0-0.1	3/09/20	Soil	X	X									
5	HAW-TP04/1002/0.4-0.5	3/09/20	Soil	X										
6	HAW-TP04/1003/0.9-1.0	3/09/20	Soil	X										
7	HAW-TP05/1001/0.0-0.1	3/09/20	Soil	X	X									
8	HAW-TP05/1002/0.3-0.4	3/09/20	Soil	X										
9	HAW-TP05/1003/0.6-0.7	3/09/20	Soil	X										
10	HAW-TP06/1001/0.0-0.1	3/09/20	Soil	X	X									
	Add Rows		Total Counts	10	4									

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Signature	Date	Time

Laboratory Use Only							
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature		
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №		

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgl Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgl Standard Terms and Conditions is available on request.

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2065
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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

☐ Melbourne Laboratory
5 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Containers (Change container type & size if necessary)

Required Turnaround Time (TAT) (Default will be 5 days if not ticked)

☐ Overnight (reporting by 9am)♦ (♦Surcharge will apply)
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

Analyses: Where metals are requested, please specify "Total" or "Filtered". SUITE codes must be used to attract SUITE pricing

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	HAW-TP06/1002/0.3-0.4	3/09/20	Soil	X										
2	HAW-TP07/1001/0.0-0.1	3/09/20	Soil	X	X									
3	HAW-TP07/1002/0.3-0.4	3/09/20	Soil	X										
4	HAW-TP07/1003/0.6-0.7	3/09/20	Soil	X										
5	HAW-TP08/1001/0.0-0.1	3/09/20	Soil	X	X									
6	HAW-TP08/1002/0.3-0.4	3/09/20	Soil											
7	HAW-TP08/1003/0.8-0.9	3/09/20	Soil	X										
8	HAW-TP08/1004/1.9-2.0	3/09/20	Soil	X										
9	HAW-TP09/1001/0.0-0.1	3/09/20	Soil	X	X									
10	HAW-TP09/1002/0.3-0.4	3/09/20	Soil											
	Add Rows		Total Counts	8	3									

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name		Signature		Date		Time	
Laboratory Use Only	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Temperature	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request

CHAIN OF CUSTODY RECORD

Eurofins | Environment | Food | NATA Cl 165 565 541

☐ Sydney Laboratory
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02 9900 8400 EnviroSampleSY@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
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☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
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Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	mshepparD@golder.com.au
Email for Results	mshepparD@golder.com.au

Analyses — Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

Containers — Change container type & size if necessary

Required Turnaround Time (TAT) — Default will be 5 days if not ticked

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	Asbestos	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	HAW-TP09/1003/0.5-0.6	3/09/20	Soil	X											
2	HAW-TP09/1004/1.5-1.6	3/09/20	Soil												
3	HAW-TP10/1001/0.0-0.1	3/09/20	Soil	X	X										
4	HAW-TP10/1801/0.0-0.1	3/09/20	Soil	X	X										
5	HAW-TP10/1901/0.0-0.1	3/09/20	Soil	To be forwarded to ALS											
6	HAW-TP10/1002/0.4-0.5	3/09/20	Soil	X											
7	HAW-TP10A/1001/0.0-0.1	3/09/20	Soil	X											
8	HAW-TP10A/1002/0.4-0.5	3/09/20	Soil												
9	HAW-TP10A/1003/0.9-1.0	3/09/20	Soil	X											
10	HAW-TP01/PACM/0.1	3/09/20	Other			X									
	Add Rows		Total Counts	6	2	1									

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Signature	Date	Time

Laboratory Use Only								
	Received By	SYD | PNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature		
	Received By	SYD | PNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №		

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

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☐ Melbourne Laboratory
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Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses — Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to refind SUITE pricing

Containers — Change container type & size if necessary.

Required Turnaround Time (TAT) — Default will be 5 days if not ticked.

☐ Overnight (reporting by 9am)♦ (♦Surcharge will apply)
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	Asbestos	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	HAW-TP05/PACM/0.1	3/09/20	Other			X									
2	GA20-BH-HAW-07/2001/0.0-0.1	31/08/20	Soil	X											labeled as BH07-2001
3	GA20-BH-HAW-07/2002/0.4-0.5	31/08/20	Soil	X											labeled as BH07-2002
4	GA20-BH-HAW-07/2003/0.9-1.0	31/08/20	Soil												labeled as BH07-2003
5	GA20-BH-HAW-07/2004/1.4-1.5	31/08/20	Soil	X											labeled as BH07-2004
6	GA20-BH-HAW-04/2001/0.0-0.1	1/09/20	Soil	X											labeled as BH04-2001
7	GA20-BH-HAW-04/2002/0.4-0.5	1/09/20	Soil	X											labeled as BH04-2002
8	GA20-BH-HAW-04/2003/0.9-1.0	1/09/20	Soil												labeled as BH04-2003
9	GA20-BH-HAW-04/2004/1.4-1.5	1/09/20	Soil	X											labeled as BH04-2004
10	GA20-BH-HAW-09/2001/0.0-0.1	3/09/20	Soil	X											labeled as BH09-2001
	Add Rows		Total Counts	7		1									

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Signature	Date	Time	

Laboratory Use Only								
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature		
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №		

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	mshepparD@golder.com.au
Email for Results	mshepparD@golder.com.au

Analyses — Where models are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

Containers — Change container type & size if necessary

Required Turnaround Time (TAT) — Default will be 5 days if not ticked

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	Asbestos	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	GA20-BH-HAW-09/2002/0.4-0.5	3/09/20	Soil	X											labeled as BH09-2002
2	GA20-BH-HAW-09/2003/0.9-1.0	3/09/20	Soil												labeled as BH09-2003
3	GA20-BH-HAW-09/2004/1.4-1.5	3/09/20	Soil	X											labeled as BH09-2004
4															
5															
6															
7															
8															
9															
10															
	Add Rows		Total Counts	2											

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name		Signature		Date		Time	

Laboratory Use Only	Received by		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Temperature	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request

GA-BQ-035 SAMPLE CHAIN OF CUSTODY DOCUMENTATION - SOIL/ROCK

Sheet..... of.....

Project & Task Number: 20145767 | Quote/Order No.:
Site Location: Bills St | Lab Name: ALS
Sampled By: MGS | Mobile No.:
Turnaround (Days) Standard | BY:
Report Format: ~~HARD~~ ☐ ~~FAX~~ ☐ EMAIL ☐ ELECTRONIC DATA FORMAT ☐

GOLDER ASSOCIATES PTY LTD | Phone: 0418504912 | GOLDER
Invoice to be sent to au_accountspayable@golder.com.au | Fax
Project Manager: Matthew Sheppard | Email: msheppard@golder.com.au
Contact Phone: 0418504912
Results To: Matthew Sheppard | Email: msheppard@golder.com.au

Comments/Special Instructions:

Samples from a declared Fire Ant Area: No
Samples taken from a known Weed and or Pest Area: No

ANALYSIS REQUIRED

SAMPLE ID	Depth	SAMPLE MATRIX	SAMPLE DATE	SAMPLE TIME	No. Containers	PRESERVATIVE	No CONTAINERS	POSSIBLE HIGH CONCENTRATION	IWRG 621 Suite	PFS (full suite)
HAW-TP02/1901	0.0-0.1	S	3/09/2020		2		2		X	
HAW-TP10/1901	0.0-0.1	S	3/09/2020		2		2		X	X

15

COPY

SAMPLE MATRIX = Soil/Sediment/Fill/Rock/Other
SAMPLE TYPE = Composite(C)/Discrete(DC)/Disturbed(DS)/Core(CR)
HIGH CONCENTRATION: Tick box and circle expected parameters in analysis list

Container Type and Preservative Codes: P = Natural Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Preserved Vial; VS = Sulphuric Acid

	SIGNATURE	COMPANY	DATE	TIME
RELEASED BY	Matthew Sheppard	GOLDER	4/09/2020	1400
RECEIVED BY				
RELEASED BY				
RECEIVED BY				
RELEASED BY				
RECEIVED BY				

	SIGNATURE	COMPANY	DATE	TIME	Method of Shipment
RELEASED BY					Shipping Ref:
RECEIVED BY					

To Be Filled Out By Analysing Laboratory

Security Seal		Chilled		LAB. BATCH NUMBER	
Suitable Containers		Frozen		Bill to:	
Cool Box		Ambient		Address	

THIS FORM IS TO BE SIGNED BY GOLDER STAFF; COURIER/S; LABORATORY ON RECEIPT OF SAMPLES.

GA-BQ-035 / RL10
JULY 2018

#AU_CAU001_EnviroSampleVic

From: Michael Morrison
Sent: Friday, 4 September 2020 11:24 AM
To: #AU_CAU001_EnviroSampleVic; Jeffy Joseph
Subject: FW: Sample pick up
Attachments: 20145767_Bills_COC1.xlsm; Chain of Custody.xlsx

FYI

Kind Regards,

Michael Morrison
Analytical Services Manager
Phone: 03 8564 5933
Mobile: 0499 201 025
Email : michaelmorrison@eurofins.com

From: Sheppard, Matthew <MSheppard@golder.com.au>
Sent: Friday, 4 September 2020 11:03 AM
To: Michael Morrison <MichaelMorrison@eurofins.com>
Cc: Melbourne, Reception <receptionMel@golder.com.au>
Subject: Sample pick up

EXTERNAL EMAIL*

Mick,

Can I please get you to book a courier to pick up 3 cooler from our office today? Interlab duplicates are to be couriered to ALS with he attached COC. Your eReg COC is also attached. Please note that we have added a new analysis.

The courier will need to contact reception upon arrival.

Please contact me if you have any questions.

Yours sincerely

Matt Sheppard

Matthew Sheppard ((BSc (Geo, EnvSc), BBus (Econ), Dip Ed))
Senior Environmental Scientist

GOLDER

Golder Associates Pty Ltd
Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121, Australia (PO Box 6079, Hawthorn West VIC 3122)
T: +61 3 8862 3500 | D: +61 3 8862 3721 | M: 0418 504 912 | golder.com
LinkedIn | Instagram | Facebook | Twitter

Work Safe, Home Safe

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GOLDER

CHAIN OF CUSTODY

No. _____

GOLDER ASSOCIATES PTY LTD
Building 7, Botanicca Corporate Park,
570 – 588 Swan Street, Richmond, Victoria 3121
Tel: (03) 8862 3500
Fax: (03) 8862 3501

Golder Job Number:	20145767
Job Location:	Hawthorn.
Laboratory Issued To:	Eurofins
Order No.:	200728GOL
Sampled By (Golder):	TRK
Golder Job Contact:	Tim Kenner, Matt Sheppard
Golder Contact Email:	tkenner@golder.com.au, MEL-ENVdata <dbd4e@golder.com> msheppard@golder.com.au

# OBSERV - ATIONS	SAMPLE DATE	SAMPLE NUMBER TAAXXX/MONN	SAMPLE TYPE	SAMPLE DEPTH (m)	No. OF CONTAINERS	IWRG621	PFAS - 28 Analytes	HOLD
1	03/09/2020	HAW-TP01/1001	S - F	0.0-0.1	2			
2		" -TP01/1002	S - F	0.4-0.5	2			
3		" -TP01/1003	S - F	0.7-0.8	2			
4		-TP01/1004	S - F	0.9-1.0	2			
5		-TP02/1001	S - F	0.0-0.1	2			
6		-TP02/1801	S - F	0.0-0.1	2			
7		-TP02/1901	S - F	0.0-0.1	2			
8		-TP02/1002	S - F	0.3-0.4	2			
9		-TP02/1003	S - N	0.7-0.8	2.			
10		-TP03/1001	S - F	0.0-0.1	2			
11		-TP03/1002	S - F	0.4-0.5	2			
12		-TP03/1003	S - N	0.9-1.0	2			
13		-TP04/1001	S - F	0.0-0.1	2			
14		-TP04/1002	S - F	0.4-0.5	2			
15		-TP04/1003	S - N	0.9-1.0	2			
16		-TP05/1001	S - F	0.0-0.1	2			
17		-TP05/1002	S - F	0.3-0.4	2			
18		-TP05/1003	S - N	0.6-0.7	2			

Special Instructions:

TURN AROUND TIME REQUIRED

☐ 1 Working Day ☐ 2 Working Days ☐ 3 Working Days ☐ 4 Working Days ☐ 5 Working Days (standard) ☐ Other _____

SAMPLE RECEIPT

Relinquished by: T. Kenner Date: 03/09/2020
Organisation: Golder Associates Time:
Recieved by: Anth To Date: 4/9/20
Organisation: Eurofins Time: 9:22am

ANALYTICAL SCHEDULE

Relinquished by: Date:
Organisation: Golder Associates Time:
Received by: Date:
Organisation: Time:

DELIVERED BY: COURIER/LA ☐ GOLDER ☐
RECEIVED BY: FAX ☐ HAND ☐

SAMPLE STATUS: [X] Security Seal ☐ [X] Chilled ☐ Frozen ☐ Ambient

TCE 7.4.

RECEIVING LABORATORY TO CONFIRM RECEIPT OF ANALYTICAL SCHEDULE BY RETURN FAX TO : (03) 8862 3501

 # Observations to Assist Analysis and OH&S
C - Expected to be Highly Contaminated
N - NAPL Sample
HS - Expected High Salinity
HOC - Expected High Total Organic Carbon
S - Sheen
O - Odourous

Original (white) - Laboratory
Duplicate (yellow) - Project File
Triplicate (pink) - COC Book

Checked By: _____ Date: _____

GOLDER

CHAIN OF CUSTODY

No. _____

GOLDER ASSOCIATES PTY LTD
Building 7, Botanicca Corporate Park,
570 – 588 Swan Street, Richmond, Victoria 3121
Tel: (03) 8862 3500
Fax: (03) 8862 3501

Golder Job Number: 20145767
Job Location:
Laboratory Issued To: Eurofins
Order No.: 200728GOL
Sampled By (Golder):
Golder Job Contact: Tim Kenner, Matt Sheppard
Golder Contact Email: tkenner@golder.com.au, MEL-ENVdata <dbd4e@golder.com> msheppard@golder.com.au

# OBSERV - ATIONS	SAMPLE DATE	SAMPLE NUMBER TAAXXX/MQNN	SAMPLE TYPE	SAMPLE DEPTH (m)	No. OF CONTAINERS	IWRG621	PFAS - 28 Analytes	HOLD
1	03/09/2020	HAW-TP06/1001	S-F	0.0-0.1	2			
2		" -TP06/1002	S-N	0.3-0.4	2			
3		-TP07/1001	S-F	0.0-0.1	2			
4		-TP07/1002	S-F	0.3-0.4	2			
5		-TP07/1003	S-N	0.6-0.7	2			
6		-TP08/1001	S-F	0.0-0.1	2			
7		-TP08/1002	S-F	0.3-0.4	2			
8		-TP08/1003	S-F	0.8-0.9	2			
9		-TP08/1004	S-N	1.9-2.0	2			
10		-TP09/1001	S-F	0.0-0.1	2			
11		-TP09/1002	S-F	0.3-0.4	2			
12		-TP09/1003	S-F	0.5-0.6	2			
13		-TP09/1004	S-F	1.5-1.6	2			
14		-TP10/1001	S-F	0.0-0.1	2			
15		-TP10/1801	S-F	0.0-0.1	2			
16		-TP10/1901	S-F	0.0-0.1	2			
17		-TP10A/1001	S-F	0.0-0.1	2			
18		-TP10A/1002	S-F	0.4-0.5	2			

Special Instructions:

TURN AROUND TIME REQUIRED

☐ 1 Working Day ☐ 2 Working Days ☐ 3 Working Days ☐ 4 Working Days ☐ 5 Working Days (standard) ☐ Other _____

SAMPLE RECEIPT

Relinquished by: TKenner Date: 03/09/2020
Organisation: Golder Associates Time:
Recieved by: Date:
Organisation: Time:

ANALYTICAL SCHEDULE

Relinquished by: Date:
Organisation: Golder Associates Time:
Received by: Date:
Organisation: Time:

DELIVERED BY: COURIER/LA ☐ GOLDER ☐
RECEIVED BY: FAX ☐ HAND ☐

SAMPLE STATUS: [X] Security Seal; [X] Chilled; ☐ Frozen; ☐ Ambient

RECEIVING LABORATORY TO CONFIRM RECEIPT OF ANALYTICAL SCHEDULE BY RETURN FAX TO : (03) 8862 3501

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Golder Job Number: 20145767
Job Location:
Laboratory Issued To: Eurofins
Order No.: 200728GOL
Sampled By (Golder):
Golder Job Contact: Tim Kenner, Matt Sheppard
Golder Contact Email: tkenner@golder.com.au, MEL-ENVdata <dbd4e@golder.com> msheppard@golder.com.au

# OBSERV - ATIONS	SAMPLE DATE	SAMPLE NUMBER TAAXXX/MQNN	SAMPLE TYPE	SAMPLE DEPTH (m)	No. OF CONTAINERS	IWRG621	PFAS - 28 Analytes	Asbestos	HOLD
1	03/09/2020	HAW-TP04/1003	S-N	0.9-1.0	2				
2									
3		HAW-TP01/PACM_D.1	Frag	0.1	1			X	
4		HAW-TP05/PACM_D.1	Frag	0.1	1			X	
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									

Special Instructions:

TURN AROUND TIME REQUIRED

☐ 1 Working Day ☐ 2 Working Days ☐ 3 Working Days ☐ 4 Working Days ☐ 5 Working Days (standard) ☐ Other _____

SAMPLE RECEIPT

Relinquished by: TKenner Date: 03/09/2020
Organisation: Golder Associates Time:
Recieved by: Date:
Organisation: Time:

ANALYTICAL SCHEDULE

Relinquished by: Date:
Organisation: Golder Associates Time:
Received by: Date:
Organisation: Time:

DELIVERED BY: COURIER/LA ☐ GOLDER ☐

RECEIVED BY: FAX ☐ HAND ☐

SAMPLE STATUS: ☒ Security Seal ☒ Chilled ☐ Frozen ☐ Ambient

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Checked By: _____ Date: _____

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ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

Australia

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Dandenong South VIC 3175
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Site # 1254 & 14271

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Golder Associates Pty Ltd (Richmond)
Contact name:	Matthew Sheppard
Project name:	BILL ST HAWTHORN
Project ID:	20145767
Turnaround time:	5 Day
Date/Time received	Sep 4, 2020 5:22 PM
Eurofins reference	742353

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✓ Split sample sent to requested external lab.
- ✕ Some samples have been subcontracted.
- **N/A** Custody Seals intact (if used).

Notes

All GA20-BH samples were not received.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Matthew Sheppard - MSheppard@golder.com.au.

Note: A copy of these results will also be delivered to the general Golder Associates Pty Ltd (Richmond) email address.

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IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 742353
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 4, 2020 5:22 PM
Due: Sep 14, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Asbestos Absence /Presence	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
Newcastle Laboratory										
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	HAW-TP01/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09894			X	X	X
2	HAW-TP01/1003/0.7-0.8	Sep 03, 2020		Soil	M20-Se09895			X	X	
3	HAW-TP02/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09896			X	X	X
4	HAW-TP02/1801/0.0-0.1	Sep 03, 2020		Soil	M20-Se09897			X	X	

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Project ID: 20145767

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Sample Detail						Asbestos Absence /Presence	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
5	HAW-TP02/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09898			X	X	
6	HAW-TP02/1003/0.7-0.8	Sep 03, 2020		Soil	M20-Se09899			X	X	
7	HAW-TP03/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09900			X	X	X
8	HAW-TP03/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09901			X	X	
9	HAW-TP03/1003/0.9-1.0	Sep 03, 2020		Soil	M20-Se09902			X	X	
10	HAW-	Sep 03, 2020		Soil	M20-Se09903			X	X	X

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Sample Detail						Asbestos Absence /Presence	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	TP04/1001/0.0 -0.1									
11	HAW-TP04/1002/0.4 -0.5	Sep 03, 2020		Soil	M20-Se09904			X	X	
12	HAW-TP04/1003/0.9 -1.0	Sep 03, 2020		Soil	M20-Se09905			X	X	
13	HAW-TP05/1001/0.0 -0.1	Sep 03, 2020		Soil	M20-Se09906			X	X	X
14	HAW-TP05/1002/0.3 -0.4	Sep 03, 2020		Soil	M20-Se09907			X	X	
15	HAW-TP05/1003/0.6	Sep 03, 2020		Soil	M20-Se09908			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	-0.7									
16	HAW-TP06/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09909			X	X	X
17	HAW-TP06/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09910			X	X	
18	HAW-TP07/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09911			X	X	X
19	HAW-TP07/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09912			X	X	
20	HAW-TP07/1003/0.6-0.7	Sep 03, 2020		Soil	M20-Se09913			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
21	HAW-TP08/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09914			X	X	X
22	HAW-TP08/1003/0.8-0.9	Sep 03, 2020		Soil	M20-Se09915			X	X	
23	HAW-TP08/1004/1.9-2.0	Sep 03, 2020		Soil	M20-Se09916			X	X	
24	HAW-TP09/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09917			X	X	X
25	HAW-TP09/1003/0.5-0.6	Sep 03, 2020		Soil	M20-Se09918			X	X	
26	HAW-	Sep 03, 2020		Soil	M20-Se09919			X	X	X

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Contact Name: Matthew Sheppard

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	TP10/1001/0.0-0.1									
27	HAW-TP10/1801/0.0-0.1	Sep 03, 2020		Soil	M20-Se09920			X	X	X
28	HAW-TP10/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09921			X	X	
29	HAW-TP10A/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09922			X	X	
30	HAW-TP10A/1003/0.9-1.0	Sep 03, 2020		Soil	M20-Se09923			X	X	
31	HAW-TP01/PACM/0.	Sep 03, 2020		Building Materials	M20-Se09924	X				

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IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 742353
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 4, 2020 5:22 PM
Due: Sep 14, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Asbestos Absence /Presence	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	1									
32	HAW-TP05/PACM/0.1	Sep 03, 2020		Building Materials	M20-Se09925	X				
33	HAW-TP01/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09926		X			
34	HAW-TP01/1004/0.9-1.0	Sep 03, 2020		Soil	M20-Se09927		X			
35	HAW-TP08/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09928		X			
36	HAW-TP09/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09929		X			

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Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
37	HAW-TP09/1004/1.5-1.6	Sep 03, 2020		Soil	M20-Se09930		X			
38	HAW-TP10A/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09931		X			
Test Counts						2	6	30	30	11

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Golder Associates Pty Ltd (Richmond)
570-588 Swan Street
Richmond
VIC 3121

Attention:	Matthew Sheppard
Report	742353-AID
Project Name	BILL ST HAWTHORN
Project ID	20145767
Received Date	Sep 04, 2020
Date Reported	Sep 14, 2020

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

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Project Name BILL ST HAWTHORN
Project ID 20145767
Date Sampled Sep 03, 2020
Report 742353-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
HAW-TP01/PACM/0.1	20-Se09924	Sep 03, 2020	Approximate Sample 34g / 90 x 65 x 3mm Sample consisted of: Fibre board and adhesive	No asbestos detected. Organic fibre detected. No respirable fibres detected.
HAW-TP05/PACM/0.1	20-Se09925	Sep 03, 2020	Approximate Sample 23g / 60 x 45 x 8mm Sample consisted of: Fibre cement	No asbestos detected. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Melbourne	Sep 05, 2020	Indefinite

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Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Asbestos Absence /Presence	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
Newcastle Laboratory										
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	HAW-TP01/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09894			X	X	X
2	HAW-TP01/1003/0.7-0.8	Sep 03, 2020		Soil	M20-Se09895			X	X	
3	HAW-TP02/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09896			X	X	X
4	HAW-TP02/1801/0.0-0.1	Sep 03, 2020		Soil	M20-Se09897			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
5	HAW-TP02/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09898			X	X	
6	HAW-TP02/1003/0.7-0.8	Sep 03, 2020		Soil	M20-Se09899			X	X	
7	HAW-TP03/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09900			X	X	X
8	HAW-TP03/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09901			X	X	
9	HAW-TP03/1003/0.9-1.0	Sep 03, 2020		Soil	M20-Se09902			X	X	
10	HAW-	Sep 03, 2020		Soil	M20-Se09903			X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	TP04/1001/0.0 -0.1									
11	HAW-TP04/1002/0.4 -0.5	Sep 03, 2020		Soil	M20-Se09904			X	X	
12	HAW-TP04/1003/0.9 -1.0	Sep 03, 2020		Soil	M20-Se09905			X	X	
13	HAW-TP05/1001/0.0 -0.1	Sep 03, 2020		Soil	M20-Se09906			X	X	X
14	HAW-TP05/1002/0.3 -0.4	Sep 03, 2020		Soil	M20-Se09907			X	X	
15	HAW-TP05/1003/0.6	Sep 03, 2020		Soil	M20-Se09908			X	X	

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Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	-0.7									
16	HAW-TP06/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09909			X	X	X
17	HAW-TP06/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09910			X	X	
18	HAW-TP07/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09911			X	X	X
19	HAW-TP07/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09912			X	X	
20	HAW-TP07/1003/0.6-0.7	Sep 03, 2020		Soil	M20-Se09913			X	X	

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Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
21	HAW-TP08/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09914			X	X	X
22	HAW-TP08/1003/0.8-0.9	Sep 03, 2020		Soil	M20-Se09915			X	X	
23	HAW-TP08/1004/1.9-2.0	Sep 03, 2020		Soil	M20-Se09916			X	X	
24	HAW-TP09/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09917			X	X	X
25	HAW-TP09/1003/0.5-0.6	Sep 03, 2020		Soil	M20-Se09918			X	X	
26	HAW-	Sep 03, 2020		Soil	M20-Se09919			X	X	X

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Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	TP10/1001/0.0-0.1									
27	HAW-TP10/1801/0.0-0.1	Sep 03, 2020		Soil	M20-Se09920			X	X	X
28	HAW-TP10/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09921			X	X	
29	HAW-TP10A/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09922			X	X	
30	HAW-TP10A/1003/0.9-1.0	Sep 03, 2020		Soil	M20-Se09923			X	X	
31	HAW-TP01/PACM/0.	Sep 03, 2020		Building Materials	M20-Se09924	X				

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	1									
32	HAW-TP05/PACM/0.1	Sep 03, 2020		Building Materials	M20-Se09925	X				
33	HAW-TP01/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09926		X			
34	HAW-TP01/1004/0.9-1.0	Sep 03, 2020		Soil	M20-Se09927		X			
35	HAW-TP08/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09928		X			
36	HAW-TP09/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09929		X			

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 742353
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 4, 2020 5:22 PM
Due: Sep 14, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Asbestos Absence /Presence	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
37	HAW-TP09/1004/1.5-1.6	Sep 03, 2020		Soil	M20-Se09930		X			
38	HAW-TP10A/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09931		X			
Test Counts						2	6	30	30	11

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to “non-bonded / friable”.
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess degree of friability.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Sophie Bush	Senior Analyst-Asbestos (VIC)

Authorised by:

Katyana Gausel	Senior Analyst-Asbestos (NSW) (Key Technical Personnel)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Golder Associates Pty Ltd (Richmond)
570-588 Swan Street
Richmond
VIC 3121

Attention: **Matthew Sheppard**

Report **742353-S**
Project name BILL ST HAWTHORN
Project ID 20145767
Received Date Sep 04, 2020

Client Sample ID			**HAW-TP01/1001/0.0-0.1**	**HAW-TP01/1003/0.7-0.8**	**HAW-TP02/1001/0.0-0.1**	**HAW-TP02/1801/0.0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09894**	**M20-Se09895**	**M20-Se09896**	**M20-Se09897**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	97	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	97	< 50	< 50	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP01/1001/0.0-0.1	HAW-TP01/1003/0.7-0.8	HAW-TP02/1001/0.0-0.1	HAW-TP02/1801/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09894**	**M20-Se09895**	**M20-Se09896**	**M20-Se09897**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	137	83	73	76
Toluene-d8 (surr.)	1	%	95	85	75	73
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	130	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	130	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP01/1001/0.0-0.1	HAW-TP01/1003/0.7-0.8	HAW-TP02/1001/0.0-0.1	HAW-TP02/1801/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09894**	**M20-Se09895**	**M20-Se09896**	**M20-Se09897**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	83	94	83	80
p-Terphenyl-d14 (surr.)	1	%	82	92	75	64
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	135	60	126	114
Tetrachloro-m-xylene (surr.)	1	%	86	97	93	83

Client Sample ID			HAW-TP01/1001/0.0-0.1	HAW-TP01/1003/0.7-0.8	HAW-TP02/1001/0.0-0.1	HAW-TP02/1801/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09894**	**M20-Se09895**	**M20-Se09896**	**M20-Se09897**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	135	60	126	114
Tetrachloro-m-xylene (surr.)	1	%	86	97	93	83
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	81	86	79	75
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	290	480	220	180
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	11	8.3	6.5	7.4
% Moisture	1	%	16	20	20	17
Heavy Metals						
Arsenic	2	mg/kg	3.3	10	5.6	6.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	11	32	16	17
Copper	5	mg/kg	18	10	18	14
Lead	5	mg/kg	31	20	62	55
Mercury	0.1	mg/kg	0.2	< 0.1	0.1	0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	11	9.5	8.9	9.6

Client Sample ID			HAW-TP01/1001/0.0-0.1	HAW-TP01/1003/0.7-0.8	HAW-TP02/1001/0.0-0.1	HAW-TP02/1801/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09894**	**M20-Se09895**	**M20-Se09896**	**M20-Se09897**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	300	20	86	78
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	-	< 5	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	-	< 5	-
13C4-PFBA (surr.)	1	%	79	-	71	-
13C5-PFPeA (surr.)	1	%	102	-	102	-
13C5-PFHxA (surr.)	1	%	117	-	101	-
13C4-PFHpA (surr.)	1	%	112	-	98	-
13C8-PFOA (surr.)	1	%	121	-	114	-
13C5-PFNA (surr.)	1	%	91	-	84	-
13C6-PFDA (surr.)	1	%	90	-	74	-
13C2-PFUnDA (surr.)	1	%	116	-	98	-
13C2-PFDoDA (surr.)	1	%	119	-	102	-
13C2-PFTeDA (surr.)	1	%	147	-	111	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	-	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	-	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	-	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	-	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	-	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	-	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	-	< 10	-
13C8-FOSA (surr.)	1	%	38	-	10	-
D3-N-MeFOSA (surr.)	1	%	108	-	94	-
D5-N-EtFOSA (surr.)	1	%	94	-	79	-
D7-N-MeFOSE (surr.)	1	%	85	-	75	-
D9-N-EtFOSE (surr.)	1	%	72	-	52	-
D5-N-EtFOSAA (surr.)	1	%	138	-	126	-
D3-N-MeFOSAA (surr.)	1	%	104	-	164	-

Client Sample ID			HAW-TP01/1001/0.0-0.1	HAW-TP01/1003/0.7-0.8	HAW-TP02/1001/0.0-0.1	HAW-TP02/1801/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09894**	**M20-Se09895**	**M20-Se09896**	**M20-Se09897**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	-	< 5	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	-	< 5	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	-	< 5	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	-	< 5	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	-	< 5	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	-	< 5	-
13C3-PFBS (surr.)	1	%	98	-	84	-
18O2-PFHxS (surr.)	1	%	100	-	82	-
13C8-PFOS (surr.)	1	%	98	-	77	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	-	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	-	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	-	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	-	< 5	-
13C2-4:2 FTSA (surr.)	1	%	129	-	72	-
13C2-6:2 FTSA (surr.)	1	%	145	-	101	-
13C2-8:2 FTSA (surr.)	1	%	93	-	76	-
13C2-10:2 FTSA (surr.)	1	%	112	-	76	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	-	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	-	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	-	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	-	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	< 50	-	< 50	-

Client Sample ID			HAW-TP02/1002/0.3-0.4	HAW-TP02/1003/0.7-0.8	HAW-TP03/1001/0.0-0.1	HAW-TP03/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09898**	**M20-Se09899**	**M20-Se09900**	**M20-Se09901**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	500	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	62	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	562	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP02/1002/0.3-0.4	HAW-TP02/1003/0.7-0.8	HAW-TP03/1001/0.0-0.1	HAW-TP03/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09898**	**M20-Se09899**	**M20-Se09900**	**M20-Se09901**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			HAW-TP02/1002/0.3-0.4	HAW-TP02/1003/0.7-0.8	HAW-TP03/1001/0.0-0.1	HAW-TP03/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09898**	**M20-Se09899**	**M20-Se09900**	**M20-Se09901**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	83	142	78	87
Toluene-d8 (surr.)	1	%	87	143	81	78
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	570	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	570	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	85	76	99	102
p-Terphenyl-d14 (surr.)	1	%	75	94	107	105
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			HAW-TP02/1002/0.3-0.4	HAW-TP02/1003/0.7-0.8	HAW-TP03/1001/0.0-0.1	HAW-TP03/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09898**	**M20-Se09899**	**M20-Se09900**	**M20-Se09901**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	140	58	77	67
Tetrachloro-m-xylene (surr.)	1	%	99	72	87	103
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	140	58	77	67
Tetrachloro-m-xylene (surr.)	1	%	99	72	87	103
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1

Client Sample ID			HAW-TP02/1002/0.3-0.4	HAW-TP02/1003/0.7-0.8	HAW-TP03/1001/0.0-0.1	HAW-TP03/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09898**	**M20-Se09899**	**M20-Se09900**	**M20-Se09901**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	81	55	68	80
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	200	910	240	410
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.5	7.6	8.9	8.6
% Moisture	1	%	20	25	18	19
Heavy Metals						
Arsenic	2	mg/kg	6.1	17	8.9	14
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	16	61	21	36
Copper	5	mg/kg	18	14	17	14
Lead	5	mg/kg	58	22	30	26
Mercury	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	9.1	24	29	19
Selenium	2	mg/kg	< 2	2.7	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	120	19	120	100
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	-	< 5	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	-	< 5	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	-	< 5	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	-	< 5	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	-	< 5	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	-	< 5	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	-	< 5	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	-	< 5	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	-	< 5	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	-	< 5	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	-	< 5	-
13C4-PFBA (surr.)	1	%	-	-	76	-
13C5-PFPeA (surr.)	1	%	-	-	100	-
13C5-PFHxA (surr.)	1	%	-	-	108	-
13C4-PFHpA (surr.)	1	%	-	-	107	-
13C8-PFOA (surr.)	1	%	-	-	118	-

Client Sample ID			HAW-TP02/1002/0.3-0.4	HAW-TP02/1003/0.7-0.8	HAW-TP03/1001/0.0-0.1	HAW-TP03/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09898**	**M20-Se09899**	**M20-Se09900**	**M20-Se09901**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C5-PFNA (surr.)	1	%	-	-	82	-
13C6-PFDA (surr.)	1	%	-	-	84	-
13C2-PFUnDA (surr.)	1	%	-	-	107	-
13C2-PFDoDA (surr.)	1	%	-	-	100	-
13C2-PFTeDA (surr.)	1	%	-	-	105	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	-	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	-	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	-	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	-	-	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	-	-	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	-	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	-	< 10	-
13C8-FOSA (surr.)	1	%	-	-	61	-
D3-N-MeFOSA (surr.)	1	%	-	-	94	-
D5-N-EtFOSA (surr.)	1	%	-	-	81	-
D7-N-MeFOSE (surr.)	1	%	-	-	74	-
D9-N-EtFOSE (surr.)	1	%	-	-	59	-
D5-N-EtFOSAA (surr.)	1	%	-	-	137	-
D3-N-MeFOSAA (surr.)	1	%	-	-	162	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	-	< 5	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	-	-	< 5	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	-	-	< 5	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	-	< 5	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	-	< 5	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	-	< 5	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	-	< 5	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	-	< 5	-
13C3-PFBS (surr.)	1	%	-	-	90	-
18O2-PFHxS (surr.)	1	%	-	-	89	-
13C8-PFOS (surr.)	1	%	-	-	80	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	-	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	-	-	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	-	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	-	-	< 5	-
13C2-4:2 FTSA (surr.)	1	%	-	-	74	-
13C2-6:2 FTSA (surr.)	1	%	-	-	121	-
13C2-8:2 FTSA (surr.)	1	%	-	-	76	-
13C2-10:2 FTSA (surr.)	1	%	-	-	77	-

Client Sample ID			HAW-TP02/1002/0.3-0.4	HAW-TP02/1003/0.7-0.8	HAW-TP03/1001/0.0-0.1	HAW-TP03/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09898**	**M20-Se09899**	**M20-Se09900**	**M20-Se09901**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	-	-	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	-	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	-	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	-	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	-	-	< 50	-

Client Sample ID			HAW-TP03/1003/0.9-1.0	HAW-TP04/1001/0.0-0.1	HAW-TP04/1002/0.4-0.5	HAW-TP04/1003/0.9-1.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09902**	**M20-Se09903**	**M20-Se09904**	**M20-Se09905**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP03/1003/0.9-1.0	HAW-TP04/1001/0.0-0.1	HAW-TP04/1002/0.4-0.5	HAW-TP04/1003/0.9-1.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09902**	**M20-Se09903**	**M20-Se09904**	**M20-Se09905**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	78	80	130	80
Toluene-d8 (surr.)	1	%	88	92	95	93
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP03/1003/0.9-1.0	HAW-TP04/1001/0.0-0.1	HAW-TP04/1002/0.4-0.5	HAW-TP04/1003/0.9-1.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09902**	**M20-Se09903**	**M20-Se09904**	**M20-Se09905**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	91	101	94	86
p-Terphenyl-d14 (surr.)	1	%	93	97	101	88
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	62	62	58	53
Tetrachloro-m-xylene (surr.)	1	%	101	99	97	87

Client Sample ID			HAW-TP03/1003/0.9-1.0	HAW-TP04/1001/0.0-0.1	HAW-TP04/1002/0.4-0.5	HAW-TP04/1003/0.9-1.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09902**	**M20-Se09903**	**M20-Se09904**	**M20-Se09905**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	62	62	58	53
Tetrachloro-m-xylene (surr.)	1	%	101	99	97	87
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	86	89	84	79
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	630	< 100	< 100	< 100
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.6	7.5	8.0	8.2
% Moisture	1	%	20	13	11	7.0
Heavy Metals						
Arsenic	2	mg/kg	14	4.5	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	42	17	< 5	7.0
Copper	5	mg/kg	14	5.7	< 5	< 5
Lead	5	mg/kg	19	21	14	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	23	6.8	< 5	< 5

Client Sample ID			HAW-TP03/1003/0.9-1.0	HAW-TP04/1001/0.0-0.1	HAW-TP04/1002/0.4-0.5	HAW-TP04/1003/0.9-1.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09902**	**M20-Se09903**	**M20-Se09904**	**M20-Se09905**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	31	31	41	< 5
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	< 5	-	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	< 5	-	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	< 5	-	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	< 5	-	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	< 5	-	-
13C4-PFBA (surr.)	1	%	-	77	-	-
13C5-PFPeA (surr.)	1	%	-	107	-	-
13C5-PFHxA (surr.)	1	%	-	108	-	-
13C4-PFHpA (surr.)	1	%	-	105	-	-
13C8-PFOA (surr.)	1	%	-	116	-	-
13C5-PFNA (surr.)	1	%	-	89	-	-
13C6-PFDA (surr.)	1	%	-	85	-	-
13C2-PFUnDA (surr.)	1	%	-	96	-	-
13C2-PFDoDA (surr.)	1	%	-	101	-	-
13C2-PFTeDA (surr.)	1	%	-	71	-	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	< 5	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	< 5	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	< 5	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	-	< 5	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	-	< 5	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	< 10	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	< 10	-	-
13C8-FOSA (surr.)	1	%	-	28	-	-
D3-N-MeFOSA (surr.)	1	%	-	80	-	-
D5-N-EtFOSA (surr.)	1	%	-	69	-	-
D7-N-MeFOSE (surr.)	1	%	-	67	-	-
D9-N-EtFOSE (surr.)	1	%	-	40	-	-
D5-N-EtFOSAA (surr.)	1	%	-	121	-	-
D3-N-MeFOSAA (surr.)	1	%	-	92	-	-

Client Sample ID			HAW-TP03/1003/0.9-1.0	HAW-TP04/1001/0.0-0.1	HAW-TP04/1002/0.4-0.5	HAW-TP04/1003/0.9-1.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09902**	**M20-Se09903**	**M20-Se09904**	**M20-Se09905**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	< 5	-	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	-	< 5	-	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	-	< 5	-	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	< 5	-	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	< 5	-	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	< 5	-	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	< 5	-	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	< 5	-	-
13C3-PFBS (surr.)	1	%	-	93	-	-
18O2-PFHxS (surr.)	1	%	-	90	-	-
13C8-PFOS (surr.)	1	%	-	84	-	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	-	< 10	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	-	< 5	-	-
13C2-4:2 FTSA (surr.)	1	%	-	72	-	-
13C2-6:2 FTSA (surr.)	1	%	-	108	-	-
13C2-8:2 FTSA (surr.)	1	%	-	73	-	-
13C2-10:2 FTSA (surr.)	1	%	-	68	-	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	-	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	-	-

Client Sample ID			HAW-TP05/1001/0.0-0.1	HAW-TP05/1002/0.3-0.4	HAW-TP05/1003/0.6-0.7	HAW-TP06/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09906**	**M20-Se09907**	**M20-Se09908**	**M20-Se09909**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP05/1001/0.0-0.1	HAW-TP05/1002/0.3-0.4	HAW-TP05/1003/0.6-0.7	HAW-TP06/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09906**	**M20-Se09907**	**M20-Se09908**	**M20-Se09909**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			HAW-TP05/1001/0.0-0.1	HAW-TP05/1002/0.3-0.4	HAW-TP05/1003/0.6-0.7	HAW-TP06/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09906**	**M20-Se09907**	**M20-Se09908**	**M20-Se09909**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	96	126	82	123
Toluene-d8 (surr.)	1	%	95	87	92	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	86	86	83	93
p-Terphenyl-d14 (surr.)	1	%	87	79	75	94
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			HAW-TP05/1001/0.0-0.1	HAW-TP05/1002/0.3-0.4	HAW-TP05/1003/0.6-0.7	HAW-TP06/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09906**	**M20-Se09907**	**M20-Se09908**	**M20-Se09909**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	65	147	126	85
Tetrachloro-m-xylene (surr.)	1	%	87	98	93	95
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	65	147	126	85
Tetrachloro-m-xylene (surr.)	1	%	87	98	93	95
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1

Client Sample ID			HAW-TP05/1001/0.0-0.1	HAW-TP05/1002/0.3-0.4	HAW-TP05/1003/0.6-0.7	HAW-TP06/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09906**	**M20-Se09907**	**M20-Se09908**	**M20-Se09909**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	58	82	79	67
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	370	120	740	160
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.9	7.6	6.2	7.3
% Moisture	1	%	15	14	19	14
Heavy Metals						
Arsenic	2	mg/kg	8.2	7.5	9.7	3.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	15	50	11
Copper	5	mg/kg	13	9.1	12	15
Lead	5	mg/kg	34	23	14	62
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	11	6.3	20	5.8
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	91	53	15	94
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	-	-	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	-	-	< 5
13C4-PFBA (surr.)	1	%	74	-	-	105
13C5-PFPeA (surr.)	1	%	109	-	-	129
13C5-PFHxA (surr.)	1	%	106	-	-	136
13C4-PFHpA (surr.)	1	%	101	-	-	132
13C8-PFOA (surr.)	1	%	123	-	-	142

Client Sample ID			HAW-TP05/1001/0.0-0.1	HAW-TP05/1002/0.3-0.4	HAW-TP05/1003/0.6-0.7	HAW-TP06/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09906**	**M20-Se09907**	**M20-Se09908**	**M20-Se09909**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C5-PFNA (surr.)	1	%	84	-	-	139
13C6-PFDA (surr.)	1	%	75	-	-	147
13C2-PFUnDA (surr.)	1	%	107	-	-	130
13C2-PFDoDA (surr.)	1	%	106	-	-	118
13C2-PFTeDA (surr.)	1	%	93	-	-	116
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	-	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	-	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	-	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	-	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	-	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	-	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	-	-	< 10
13C8-FOSA (surr.)	1	%	58	-	-	129
D3-N-MeFOSA (surr.)	1	%	90	-	-	148
D5-N-EtFOSA (surr.)	1	%	142	-	-	122
D7-N-MeFOSE (surr.)	1	%	83	-	-	113
D9-N-EtFOSE (surr.)	1	%	79	-	-	123
D5-N-EtFOSAA (surr.)	1	%	143	-	-	90
D3-N-MeFOSAA (surr.)	1	%	88	-	-	115
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	-	-	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	-	-	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	-	-	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	-	-	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	-	-	< 5
13C3-PFBS (surr.)	1	%	88	-	-	117
18O2-PFHxS (surr.)	1	%	96	-	-	124
13C8-PFOS (surr.)	1	%	98	-	-	123
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	-	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	-	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	-	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	-	-	< 5
13C2-4:2 FTSA (surr.)	1	%	69	-	-	122
13C2-6:2 FTSA (surr.)	1	%	109	-	-	136
13C2-8:2 FTSA (surr.)	1	%	103	-	-	138
13C2-10:2 FTSA (surr.)	1	%	80	-	-	137

Client Sample ID			HAW-TP05/1001/0.0-0.1	HAW-TP05/1002/0.3-0.4	HAW-TP05/1003/0.6-0.7	HAW-TP06/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09906**	**M20-Se09907**	**M20-Se09908**	**M20-Se09909**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	-	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	-	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	-	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	-	-	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	-	-	< 50

Client Sample ID			HAW-TP06/1002/0.3-0.4	HAW-TP07/1001/0.0-0.1	HAW-TP07/1002/0.3-0.4	HAW-TP07/1003/0.6-0.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09910**	**M20-Se09911**	**M20-Se09912**	**M20-Se09913**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP06/1002/0.3-0.4	HAW-TP07/1001/0.0-0.1	HAW-TP07/1002/0.3-0.4	HAW-TP07/1003/0.6-0.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09910**	**M20-Se09911**	**M20-Se09912**	**M20-Se09913**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	96	72	83	83
Toluene-d8 (surr.)	1	%	90	95	88	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP06/1002/0.3-0.4	HAW-TP07/1001/0.0-0.1	HAW-TP07/1002/0.3-0.4	HAW-TP07/1003/0.6-0.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09910**	**M20-Se09911**	**M20-Se09912**	**M20-Se09913**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	91	95	84	76
p-Terphenyl-d14 (surr.)	1	%	95	100	91	106
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	62	68	77	65
Tetrachloro-m-xylene (surr.)	1	%	95	94	87	79

Client Sample ID			HAW-TP06/1002/0.3-0.4	HAW-TP07/1001/0.0-0.1	HAW-TP07/1002/0.3-0.4	HAW-TP07/1003/0.6-0.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09910**	**M20-Se09911**	**M20-Se09912**	**M20-Se09913**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	62	68	77	65
Tetrachloro-m-xylene (surr.)	1	%	95	94	87	79
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	89	84	63	66
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	< 100	< 100	< 100	< 100
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.7	7.3	7.1	7.7
% Moisture	1	%	7.5	12	13	10
Heavy Metals						
Arsenic	2	mg/kg	< 2	3.3	4.9	4.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	5.1	8.4	10	7.7
Copper	5	mg/kg	< 5	9.4	9.9	< 5
Lead	5	mg/kg	< 5	21	35	5.8
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	< 5	< 5	< 5	< 5

Client Sample ID			HAW-TP06/1002/0.3-0.4	HAW-TP07/1001/0.0-0.1	HAW-TP07/1002/0.3-0.4	HAW-TP07/1003/0.6-0.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09910**	**M20-Se09911**	**M20-Se09912**	**M20-Se09913**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	< 5	62	48	< 5
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	< 5	-	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	< 5	-	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	< 5	-	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	< 5	-	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	< 5	-	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	< 5	-	-
13C4-PFBA (surr.)	1	%	-	110	-	-
13C5-PFPeA (surr.)	1	%	-	121	-	-
13C5-PFHxA (surr.)	1	%	-	140	-	-
13C4-PFHpA (surr.)	1	%	-	140	-	-
13C8-PFOA (surr.)	1	%	-	80	-	-
13C5-PFNA (surr.)	1	%	-	146	-	-
13C6-PFDA (surr.)	1	%	-	145	-	-
13C2-PFUnDA (surr.)	1	%	-	132	-	-
13C2-PFDoDA (surr.)	1	%	-	116	-	-
13C2-PFTeDA (surr.)	1	%	-	107	-	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	< 5	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	< 5	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	< 5	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	-	< 5	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	-	< 5	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	< 10	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	< 10	-	-
13C8-FOSA (surr.)	1	%	-	141	-	-
D3-N-MeFOSA (surr.)	1	%	-	146	-	-
D5-N-EtFOSA (surr.)	1	%	-	129	-	-
D7-N-MeFOSE (surr.)	1	%	-	114	-	-
D9-N-EtFOSE (surr.)	1	%	-	109	-	-
D5-N-EtFOSAA (surr.)	1	%	-	92	-	-
D3-N-MeFOSAA (surr.)	1	%	-	114	-	-

Client Sample ID			HAW-TP06/1002/0.3-0.4	HAW-TP07/1001/0.0-0.1	HAW-TP07/1002/0.3-0.4	HAW-TP07/1003/0.6-0.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09910**	**M20-Se09911**	**M20-Se09912**	**M20-Se09913**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	< 5	-	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	-	< 5	-	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	-	< 5	-	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	< 5	-	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	< 5	-	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	< 5	-	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	< 5	-	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	< 5	-	-
13C3-PFBS (surr.)	1	%	-	120	-	-
18O2-PFHxS (surr.)	1	%	-	126	-	-
13C8-PFOS (surr.)	1	%	-	124	-	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	-	< 10	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	-	< 5	-	-
13C2-4:2 FTSA (surr.)	1	%	-	128	-	-
13C2-6:2 FTSA (surr.)	1	%	-	130	-	-
13C2-8:2 FTSA (surr.)	1	%	-	149	-	-
13C2-10:2 FTSA (surr.)	1	%	-	147	-	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	-	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	-	-

Client Sample ID			HAW-TP08/1001/0.0-0.1	HAW-TP08/1003/0.8-0.9	HAW-TP08/1004/1.9-2.0	HAW-TP09/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09914**	**M20-Se09915**	**M20-Se09916**	**M20-Se09917**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	110
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	130
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	240
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP08/1001/0.0-0.1	HAW-TP08/1003/0.8-0.9	HAW-TP08/1004/1.9-2.0	HAW-TP09/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09914**	**M20-Se09915**	**M20-Se09916**	**M20-Se09917**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			HAW-TP08/1001/0.0-0.1	HAW-TP08/1003/0.8-0.9	HAW-TP08/1004/1.9-2.0	HAW-TP09/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09914**	**M20-Se09915**	**M20-Se09916**	**M20-Se09917**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	95	129	127	132
Toluene-d8 (surr.)	1	%	95	91	87	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	300
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	300
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.2	< 0.5	< 0.5	1.3
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.5	0.6	0.6	1.5
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.7	1.2	1.2	1.8
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	0.9	< 0.5	< 0.5	1.0
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.0	< 0.5	< 0.5	1.0
Benzo(g.h.i)perylene	0.5	mg/kg	0.6	< 0.5	< 0.5	1.1
Benzo(k)fluoranthene	0.5	mg/kg	0.9	< 0.5	< 0.5	0.7
Chrysene	0.5	mg/kg	1.1	< 0.5	< 0.5	0.9
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	2.3	< 0.5	< 0.5	1.0
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	0.6	< 0.5	< 0.5	0.6
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	1.1	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	2.0	< 0.5	< 0.5	1.2
Total PAH*	0.5	mg/kg	11.3	< 0.5	< 0.5	7.5
2-Fluorobiphenyl (surr.)	1	%	87	83	70	82
p-Terphenyl-d14 (surr.)	1	%	85	98	92	77
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			HAW-TP08/1001/0.0-0.1	HAW-TP08/1003/0.8-0.9	HAW-TP08/1004/1.9-2.0	HAW-TP09/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09914**	**M20-Se09915**	**M20-Se09916**	**M20-Se09917**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	86	140	104	112
Tetrachloro-m-xylene (surr.)	1	%	90	85	65	72
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	86	140	104	112
Tetrachloro-m-xylene (surr.)	1	%	90	85	65	72
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1

Client Sample ID			HAW-TP08/1001/0.0-0.1	HAW-TP08/1003/0.8-0.9	HAW-TP08/1004/1.9-2.0	HAW-TP09/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09914**	**M20-Se09915**	**M20-Se09916**	**M20-Se09917**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	73	73	77	96
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	110	230	< 100	110
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.2	8.4	5.8	6.7
% Moisture	1	%	16	18	9.1	20
Heavy Metals						
Arsenic	2	mg/kg	31	7.8	6.9	13
Cadmium	0.4	mg/kg	9.5	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	21	28	11	16
Copper	5	mg/kg	84	11	< 5	27
Lead	5	mg/kg	240	38	10	50
Mercury	0.1	mg/kg	5.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	34	10	< 5	25
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	320	40	< 10	47
Zinc	5	mg/kg	14000	73	13	73
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	-	-	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	-	-	< 5
13C4-PFBA (surr.)	1	%	81	-	-	79
13C5-PFPeA (surr.)	1	%	103	-	-	112
13C5-PFHxA (surr.)	1	%	108	-	-	92
13C4-PFHpA (surr.)	1	%	106	-	-	94
13C8-PFOA (surr.)	1	%	121	-	-	96

Client Sample ID			HAW-TP08/1001/0.0-0.1	HAW-TP08/1003/0.8-0.9	HAW-TP08/1004/1.9-2.0	HAW-TP09/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09914**	**M20-Se09915**	**M20-Se09916**	**M20-Se09917**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C5-PFNA (surr.)	1	%	87	-	-	78
13C6-PFDA (surr.)	1	%	80	-	-	79
13C2-PFUnDA (surr.)	1	%	108	-	-	84
13C2-PFDoDA (surr.)	1	%	116	-	-	52
13C2-PFTeDA (surr.)	1	%	138	-	-	62
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	-	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	-	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	-	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	-	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	-	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	-	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	-	-	< 10
13C8-FOSA (surr.)	1	%	67	-	-	27
D3-N-MeFOSA (surr.)	1	%	108	-	-	74
D5-N-EtFOSA (surr.)	1	%	98	-	-	57
D7-N-MeFOSE (surr.)	1	%	85	-	-	51
D9-N-EtFOSE (surr.)	1	%	66	-	-	43
D5-N-EtFOSAA (surr.)	1	%	143	-	-	58
D3-N-MeFOSAA (surr.)	1	%	110	-	-	81
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	-	-	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	-	-	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	-	-	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	-	-	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	-	-	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	-	-	< 5
13C3-PFBS (surr.)	1	%	90	-	-	89
18O2-PFHxS (surr.)	1	%	89	-	-	84
13C8-PFOS (surr.)	1	%	83	-	-	87
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	-	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	-	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	-	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	-	-	< 5
13C2-4:2 FTSA (surr.)	1	%	72	-	-	73
13C2-6:2 FTSA (surr.)	1	%	103	-	-	66
13C2-8:2 FTSA (surr.)	1	%	78	-	-	64
13C2-10:2 FTSA (surr.)	1	%	96	-	-	27

Client Sample ID			HAW-TP08/1001/0.0-0.1	HAW-TP08/1003/0.8-0.9	HAW-TP08/1004/1.9-2.0	HAW-TP09/1001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09914**	**M20-Se09915**	**M20-Se09916**	**M20-Se09917**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	-	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	-	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	-	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	-	-	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	-	-	< 50

Client Sample ID			HAW-TP09/1003/0.5-0.6	HAW-TP10/1001/0.0-0.1	HAW-TP10/1801/0.0-0.1	HAW-TP10/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09918**	**M20-Se09919**	**M20-Se09920**	**M20-Se09921**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	120	52	71	< 50
TRH C29-C36	50	mg/kg	97	84	96	< 50
TRH C10-C36 (Total)	50	mg/kg	217	136	167	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP09/1003/0.5-0.6	HAW-TP10/1001/0.0-0.1	HAW-TP10/1801/0.0-0.1	HAW-TP10/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09918**	**M20-Se09919**	**M20-Se09920**	**M20-Se09921**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	137	128	136	80
Toluene-d8 (surr.)	1	%	99	90	97	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	260	160	200	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	260	160	200	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	5.8	< 0.5	1.1	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	5.8	0.6	1.3	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	5.8	1.2	1.6	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HAW-TP09/1003/0.5-0.6	HAW-TP10/1001/0.0-0.1	HAW-TP10/1801/0.0-0.1	HAW-TP10/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09918**	**M20-Se09919**	**M20-Se09920**	**M20-Se09921**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	3.0	< 0.5	0.7	< 0.5
Benzo(a)pyrene	0.5	mg/kg	4.1	< 0.5	0.8	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	3.4	< 0.5	0.8	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	4.0	< 0.5	0.6	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	2.4	< 0.5	0.6	< 0.5
Chrysene	0.5	mg/kg	3.0	< 0.5	0.8	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	3.5	0.5	1.3	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	2.4	< 0.5	0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	0.7	< 0.5	0.6	< 0.5
Pyrene	0.5	mg/kg	4.6	0.6	1.5	< 0.5
Total PAH*	0.5	mg/kg	31.6	1.1	8.2	< 0.5
2-Fluorobiphenyl (surr.)	1	%	78	80	97	81
p-Terphenyl-d14 (surr.)	1	%	78	90	95	82
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	124	132	147	67
Tetrachloro-m-xylene (surr.)	1	%	77	80	79	65

Client Sample ID			HAW-TP09/1003/0.5-0.6	HAW-TP10/1001/0.0-0.1	HAW-TP10/1801/0.0-0.1	HAW-TP10/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09918**	**M20-Se09919**	**M20-Se09920**	**M20-Se09921**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	124	132	147	67
Tetrachloro-m-xylene (surr.)	1	%	77	80	79	65
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	96	85	79	71
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	320	120	110	140
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.3	7.1	7.9	7.4
% Moisture	1	%	15	15	15	12
Heavy Metals						
Arsenic	2	mg/kg	8.1	11	11	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.4	< 0.4
Chromium	5	mg/kg	34	22	21	23
Copper	5	mg/kg	14	67	45	15
Lead	5	mg/kg	39	130	140	42
Mercury	0.1	mg/kg	< 0.1	0.2	0.2	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	29	14	13	10

Client Sample ID			HAW-TP09/1003/0.5-0.6	HAW-TP10/1001/0.0-0.1	HAW-TP10/1801/0.0-0.1	HAW-TP10/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09918**	**M20-Se09919**	**M20-Se09920**	**M20-Se09921**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	41	45	< 10
Zinc	5	mg/kg	41	300	380	53
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	< 5	< 5	-
13C4-PFBA (surr.)	1	%	-	73	87	-
13C5-PFPeA (surr.)	1	%	-	105	112	-
13C5-PFHxA (surr.)	1	%	-	100	115	-
13C4-PFHpA (surr.)	1	%	-	96	114	-
13C8-PFOA (surr.)	1	%	-	115	120	-
13C5-PFNA (surr.)	1	%	-	79	88	-
13C6-PFDA (surr.)	1	%	-	74	77	-
13C2-PFUnDA (surr.)	1	%	-	101	92	-
13C2-PFDoDA (surr.)	1	%	-	98	104	-
13C2-PFTeDA (surr.)	1	%	-	84	96	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	< 5	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	< 5	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	< 5	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	-	< 5	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	-	< 5	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	< 10	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	< 10	< 10	-
13C8-FOSA (surr.)	1	%	-	58	86	-
D3-N-MeFOSA (surr.)	1	%	-	82	80	-
D5-N-EtFOSA (surr.)	1	%	-	135	119	-
D7-N-MeFOSE (surr.)	1	%	-	80	100	-
D9-N-EtFOSE (surr.)	1	%	-	76	70	-
D5-N-EtFOSAA (surr.)	1	%	-	134	149	-
D3-N-MeFOSAA (surr.)	1	%	-	88	93	-

Client Sample ID			HAW-TP09/1003/0.5-0.6	HAW-TP10/1001/0.0-0.1	HAW-TP10/1801/0.0-0.1	HAW-TP10/1002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09918**	**M20-Se09919**	**M20-Se09920**	**M20-Se09921**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	< 5	< 5	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	< 5	< 5	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	< 5	< 5	-
13C3-PFBS (surr.)	1	%	-	87	104	-
18O2-PFHxS (surr.)	1	%	-	89	105	-
13C8-PFOS (surr.)	1	%	-	98	108	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	-	< 10	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5	-
13C2-4:2 FTSA (surr.)	1	%	-	67	81	-
13C2-6:2 FTSA (surr.)	1	%	-	96	111	-
13C2-8:2 FTSA (surr.)	1	%	-	96	95	-
13C2-10:2 FTSA (surr.)	1	%	-	79	143	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	< 50	-

Client Sample ID			HAW-TP10A/1001/0.0-0.1	HAW-TP10A/1003/0.9-1.0
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09922**	**M20-Se09923**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	70	< 50
TRH C29-C36	50	mg/kg	59	< 50
TRH C10-C36 (Total)	50	mg/kg	129	< 50
Volatile Organics				
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			HAW-TP10A/1001/0.0-0.1	HAW-TP10A/1003/0.9-1.0
Sample Matrix			Soil	Soil
Eurofins Sample No.			M20-Se09922	M20-Se09923
Date Sampled			Sep 03, 2020	Sep 03, 2020
Test/Reference	LOR	Unit		
Volatile Organics				
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1

Client Sample ID			HAW-TP10A/1001/0.0-0.1	HAW-TP10A/1003/0.9-1.0
Sample Matrix			Soil	Soil
Eurofins Sample No.			M20-Se09922	M20-Se09923
Date Sampled			Sep 03, 2020	Sep 03, 2020
Test/Reference	LOR	Unit		
Volatile Organics				
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	104	89
Toluene-d8 (surr.)	1	%	103	88
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	150	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	150	< 100
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	2.0	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	2.2	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	2.5	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	1.0	< 0.5
Benzo(a)pyrene	0.5	mg/kg	1.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.3	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	0.9	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	1.2	< 0.5
Chrysene	0.5	mg/kg	1.2	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	3.0	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	0.9	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	1.2	< 0.5
Pyrene	0.5	mg/kg	3.1	< 0.5
Total PAH*	0.5	mg/kg	15.3	< 0.5
2-Fluorobiphenyl (surr.)	1	%	52	60
p-Terphenyl-d14 (surr.)	1	%	51	50
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05

Client Sample ID			HAW-TP10A/1001/0.0-0.1	HAW-TP10A/1003/0.9-1.0
Sample Matrix			Soil	Soil
Eurofins Sample No.			M20-Se09922	M20-Se09923
Date Sampled			Sep 03, 2020	Sep 03, 2020
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	113	53
Tetrachloro-m-xylene (surr.)	1	%	59	57
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	113	53
Tetrachloro-m-xylene (surr.)	1	%	59	57
Phenols (Halogenated)				
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1

Client Sample ID			HAW-TP10A/1001/0.0-0.1	HAW-TP10A/1003/0.9-1.0
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**M20-Se09922**	**M20-Se09923**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit		
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20
Phenol-d6 (surr.)	1	%	35	53
Chromium (hexavalent)	1	mg/kg	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5
Fluoride (Total)	100	mg/kg	150	420
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.1	7.9
% Moisture	1	%	14	18
Heavy Metals				
Arsenic	2	mg/kg	27	8.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	25	43
Copper	5	mg/kg	70	15
Lead	5	mg/kg	190	17
Mercury	0.1	mg/kg	0.3	0.2
Molybdenum	5	mg/kg	< 5	< 5
Nickel	5	mg/kg	30	23
Selenium	2	mg/kg	< 2	< 2
Silver	0.2	mg/kg	0.3	< 0.2
Tin	10	mg/kg	290	< 10
Zinc	5	mg/kg	530	22

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 08, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Sep 08, 2020	7 Days
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Sep 08, 2020	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 08, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 08, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 08, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Sep 08, 2020	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Polychlorinated Biphenyls	Melbourne	Sep 08, 2020	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Phenols (Halogenated)	Melbourne	Sep 08, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Sep 08, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Sep 08, 2020	28 Days
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Sep 08, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride (Total)	Melbourne	Sep 09, 2020	28 Days
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Sep 08, 2020	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Sep 08, 2020	28 Days
- Method:			
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Sep 05, 2020	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Sep 08, 2020	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Sep 08, 2020	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Sep 08, 2020	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Sep 08, 2020	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Sep 05, 2020	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Company Name: Golder Associates Pty Ltd (Richmond)
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Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 742353
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 4, 2020 5:22 PM
Due: Sep 14, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Asbestos Absence /Presence	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
Newcastle Laboratory										
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	HAW-TP01/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09894			X	X	X
2	HAW-TP01/1003/0.7-0.8	Sep 03, 2020		Soil	M20-Se09895			X	X	
3	HAW-TP02/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09896			X	X	X
4	HAW-TP02/1801/0.0-0.1	Sep 03, 2020		Soil	M20-Se09897			X	X	

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Company Name: Golder Associates Pty Ltd (Richmond)
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Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 742353
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 4, 2020 5:22 PM
Due: Sep 14, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Asbestos Absence /Presence	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
5	HAW-TP02/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09898			X	X	
6	HAW-TP02/1003/0.7-0.8	Sep 03, 2020		Soil	M20-Se09899			X	X	
7	HAW-TP03/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09900			X	X	X
8	HAW-TP03/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09901			X	X	
9	HAW-TP03/1003/0.9-1.0	Sep 03, 2020		Soil	M20-Se09902			X	X	
10	HAW-	Sep 03, 2020		Soil	M20-Se09903			X	X	X

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 742353
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 4, 2020 5:22 PM
Due: Sep 14, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Asbestos Absence /Presence	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	TP04/1001/0.0 -0.1									
11	HAW-TP04/1002/0.4 -0.5	Sep 03, 2020		Soil	M20-Se09904			X	X	
12	HAW-TP04/1003/0.9 -1.0	Sep 03, 2020		Soil	M20-Se09905			X	X	
13	HAW-TP05/1001/0.0 -0.1	Sep 03, 2020		Soil	M20-Se09906			X	X	X
14	HAW-TP05/1002/0.3 -0.4	Sep 03, 2020		Soil	M20-Se09907			X	X	
15	HAW-TP05/1003/0.6	Sep 03, 2020		Soil	M20-Se09908			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	-0.7									
16	HAW-TP06/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09909			X	X	X
17	HAW-TP06/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09910			X	X	
18	HAW-TP07/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09911			X	X	X
19	HAW-TP07/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09912			X	X	
20	HAW-TP07/1003/0.6-0.7	Sep 03, 2020		Soil	M20-Se09913			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
21	HAW-TP08/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09914			X	X	X
22	HAW-TP08/1003/0.8-0.9	Sep 03, 2020		Soil	M20-Se09915			X	X	
23	HAW-TP08/1004/1.9-2.0	Sep 03, 2020		Soil	M20-Se09916			X	X	
24	HAW-TP09/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09917			X	X	X
25	HAW-TP09/1003/0.5-0.6	Sep 03, 2020		Soil	M20-Se09918			X	X	
26	HAW-	Sep 03, 2020		Soil	M20-Se09919			X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	TP10/1001/0.0-0.1									
27	HAW-TP10/1801/0.0-0.1	Sep 03, 2020		Soil	M20-Se09920			X	X	X
28	HAW-TP10/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09921			X	X	
29	HAW-TP10A/1001/0.0-0.1	Sep 03, 2020		Soil	M20-Se09922			X	X	
30	HAW-TP10A/1003/0.9-1.0	Sep 03, 2020		Soil	M20-Se09923			X	X	
31	HAW-TP01/PACM/0.	Sep 03, 2020		Building Materials	M20-Se09924	X				

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	1									
32	HAW-TP05/PACM/0.1	Sep 03, 2020		Building Materials	M20-Se09925	X				
33	HAW-TP01/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09926		X			
34	HAW-TP01/1004/0.9-1.0	Sep 03, 2020		Soil	M20-Se09927		X			
35	HAW-TP08/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09928		X			
36	HAW-TP09/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Se09929		X			

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
37	HAW-TP09/1004/1.5-1.6	Sep 03, 2020		Soil	M20-Se09930		X			
38	HAW-TP10A/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Se09931		X			
Test Counts						2	6	30	30	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride (Total)	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	121			70-130	Pass	
TRH C10-C14	%	116			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	113			70-130	Pass	
1.1.1-Trichloroethane	%	97			70-130	Pass	
1.2-Dichlorobenzene	%	84			70-130	Pass	
1.2-Dichloroethane	%	117			70-130	Pass	
Benzene	%	111			70-130	Pass	
Ethylbenzene	%	93			70-130	Pass	
m&p-Xylenes	%	90			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	%	99			70-130	Pass	
Trichloroethene	%	106			70-130	Pass	
Xylenes - Total*	%	90			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	78			70-130	Pass	
TRH C6-C10	%	107			70-130	Pass	
TRH >C10-C16	%	94			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	110			70-130	Pass	
Acenaphthylene	%	116			70-130	Pass	
Anthracene	%	105			70-130	Pass	
Benz(a)anthracene	%	97			70-130	Pass	
Benzo(a)pyrene	%	107			70-130	Pass	
Benzo(b&j)fluoranthene	%	72			70-130	Pass	
Benzo(g.h.i)perylene	%	120			70-130	Pass	
Benzo(k)fluoranthene	%	117			70-130	Pass	
Chrysene	%	106			70-130	Pass	
Dibenz(a.h)anthracene	%	117			70-130	Pass	
Fluoranthene	%	104			70-130	Pass	
Fluorene	%	110			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	113			70-130	Pass	
Naphthalene	%	99			70-130	Pass	
Phenanthrene	%	104			70-130	Pass	
Pyrene	%	101			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	116			70-130	Pass	
4.4'-DDD	%	115			70-130	Pass	
4.4'-DDE	%	110			70-130	Pass	
4.4'-DDT	%	95			70-130	Pass	
a-BHC	%	100			70-130	Pass	
Aldrin	%	116			70-130	Pass	
b-BHC	%	82			70-130	Pass	
d-BHC	%	97			70-130	Pass	
Dieldrin	%	96			70-130	Pass	
Endosulfan I	%	118			70-130	Pass	
Endosulfan II	%	110			70-130	Pass	
Endosulfan sulphate	%	103			70-130	Pass	
Endrin	%	91			70-130	Pass	
Endrin aldehyde	%	110			70-130	Pass	
Endrin ketone	%	116			70-130	Pass	
g-BHC (Lindane)	%	111			70-130	Pass	
Heptachlor	%	96			70-130	Pass	
Heptachlor epoxide	%	120			70-130	Pass	
Hexachlorobenzene	%	101			70-130	Pass	
Methoxychlor	%	96			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	124			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	108			30-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4-Dichlorophenol	%	106			30-130	Pass	
2.4.5-Trichlorophenol	%	116			30-130	Pass	
2.4.6-Trichlorophenol	%	109			30-130	Pass	
2.6-Dichlorophenol	%	108			30-130	Pass	
4-Chloro-3-methylphenol	%	120			30-130	Pass	
Pentachlorophenol	%	92			30-130	Pass	
Tetrachlorophenols - Total	%	112			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	42			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	100			30-130	Pass	
2-Methylphenol (o-Cresol)	%	113			30-130	Pass	
2-Nitrophenol	%	115			30-130	Pass	
2.4-Dimethylphenol	%	128			30-130	Pass	
2.4-Dinitrophenol	%	82			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	117			30-130	Pass	
4-Nitrophenol	%	112			30-130	Pass	
Dinoseb	%	103			30-130	Pass	
Phenol	%	109			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	107			70-130	Pass	
Cyanide (total)	%	82			70-130	Pass	
Fluoride (Total)	%	108			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Cadmium	%	111			80-120	Pass	
Copper	%	120			80-120	Pass	
Lead	%	115			80-120	Pass	
Mercury	%	114			80-120	Pass	
Nickel	%	119			80-120	Pass	
Selenium	%	116			80-120	Pass	
Silver	%	104			80-120	Pass	
Tin	%	119			80-120	Pass	
Zinc	%	118			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	109			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	99			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	103			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	98			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	112			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	126			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	102			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	88			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	54			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	65			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	78			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	99			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	112			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	107			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	94			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	92			50-150	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)			%	97			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)			%	90			50-150	Pass	
LCS - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)									
Perfluorobutanesulfonic acid (PFBS)			%	110			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)			%	101			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)			%	121			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)			%	105			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)			%	105			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)			%	107			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	79			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)			%	85			50-150	Pass	
LCS - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)									
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)			%	115			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)			%	125			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)			%	114			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)			%	89			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M20-Se09895	CP	%	74			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.2-Dichlorobenzene	M20-Se09896	CP	%	74			70-130	Pass	
1.2-Dichloroethane	M20-Se09896	CP	%	71			70-130	Pass	
Benzene	M20-Se09896	CP	%	78			70-130	Pass	
Ethylbenzene	M20-Se09896	CP	%	81			70-130	Pass	
m&p-Xylenes	M20-Se09896	CP	%	80			70-130	Pass	
o-Xylene	M20-Se09896	CP	%	80			70-130	Pass	
Toluene	M20-Se09896	CP	%	79			70-130	Pass	
Trichloroethene	M20-Se09896	CP	%	90			70-130	Pass	
Xylenes - Total*	M20-Se09896	CP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-Se09896	CP	%	78			70-130	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M20-Se09896	CP	%	105			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M20-Se09896	CP	%	91			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M20-Se09896	CP	%	94			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M20-Se09896	CP	%	94			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M20-Se09896	CP	%	96			50-150	Pass	
Perfluorononanoic acid (PFNA)	M20-Se09896	CP	%	107			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M20-Se09896	CP	%	93			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M20-Se09896	CP	%	73			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M20-Se09896	CP	%	55			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M20-Se09896	CP	%	51			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M20-Se09896	CP	%	74			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorooctane sulfonamide (FOSA)	M20-Se09896	CP	%	144			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M20-Se09896	CP	%	107			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M20-Se09896	CP	%	100			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M20-Se09896	CP	%	89			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M20-Se09896	CP	%	129			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M20-Se09896	CP	%	92			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M20-Se09896	CP	%	85			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M20-Se09896	CP	%	99			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M20-Se09896	CP	%	102			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M20-Se09896	CP	%	104			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M20-Se09896	CP	%	97			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M20-Se09896	CP	%	96			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M20-Se09896	CP	%	96			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M20-Se09896	CP	%	80			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M20-Se09896	CP	%	88			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M20-Se09896	CP	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M20-Se09896	CP	%	119			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M20-Se09896	CP	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M20-Se09896	CP	%	134			50-150	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	M20-Se09897	CP	%	45			70-130	Fail	Q08
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M20-Se09899	CP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M20-Se09899	CP	%	108			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Se09902	CP	%	107			75-125	Pass	
Cadmium	M20-Se09902	CP	%	110			75-125	Pass	
Chromium	M20-Se09902	CP	%	111			75-125	Pass	
Copper	M20-Se09902	CP	%	116			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead	M20-Se09902	CP	%	111			75-125	Pass	
Mercury	M20-Se09902	CP	%	105			75-125	Pass	
Molybdenum	M20-Se09902	CP	%	119			75-125	Pass	
Nickel	M20-Se09902	CP	%	111			75-125	Pass	
Selenium	M20-Se09902	CP	%	111			75-125	Pass	
Silver	M20-Se09902	CP	%	107			75-125	Pass	
Tin	M20-Se09902	CP	%	114			75-125	Pass	
Zinc	M20-Se09902	CP	%	96			75-125	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M20-Se09904	CP	%	95			70-130	Pass	
Fluoride (Total)	M20-Se09904	CP	%	89			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M20-Se09905	CP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M20-Se09910	CP	%	105			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	M20-Se09910	CP	%	93			70-130	Pass	
1.1.1-Trichloroethane	M20-Se09910	CP	%	80			70-130	Pass	
1.2-Dichlorobenzene	M20-Se09910	CP	%	78			70-130	Pass	
1.2-Dichloroethane	M20-Se09910	CP	%	95			70-130	Pass	
Benzene	M20-Se09910	CP	%	89			70-130	Pass	
Ethylbenzene	M20-Se09910	CP	%	72			70-130	Pass	
m&p-Xylenes	M20-Se09910	CP	%	71			70-130	Pass	
o-Xylene	M20-Se09910	CP	%	75			70-130	Pass	
Toluene	M20-Se09910	CP	%	87			70-130	Pass	
Trichloroethene	M20-Se09910	CP	%	74			70-130	Pass	
Xylenes - Total*	M20-Se09910	CP	%	72			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-Se09910	CP	%	77			70-130	Pass	
TRH C6-C10	M20-Se09910	CP	%	99			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Se09912	CP	%	108			75-125	Pass	
Cadmium	M20-Se09912	CP	%	112			75-125	Pass	
Chromium	M20-Se09912	CP	%	123			75-125	Pass	
Copper	M20-Se09912	CP	%	118			75-125	Pass	
Lead	M20-Se09912	CP	%	119			75-125	Pass	
Mercury	M20-Se09912	CP	%	117			75-125	Pass	
Molybdenum	M20-Se09912	CP	%	124			75-125	Pass	
Nickel	M20-Se09912	CP	%	115			75-125	Pass	
Selenium	M20-Se09912	CP	%	111			75-125	Pass	
Silver	M20-Se09912	CP	%	111			75-125	Pass	
Tin	M20-Se09912	CP	%	122			75-125	Pass	
Zinc	M20-Se09912	CP	%	109			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M20-Se09914	CP	%	97			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.1-Dichloroethene	M20-Se09914	CP	%	90			70-130	Pass	
1.1.1-Trichloroethane	M20-Se09914	CP	%	92			70-130	Pass	
1.2-Dichlorobenzene	M20-Se09914	CP	%	102			70-130	Pass	
1.2-Dichloroethane	M20-Se09914	CP	%	118			70-130	Pass	
Benzene	M20-Se09914	CP	%	111			70-130	Pass	
Ethylbenzene	M20-Se09914	CP	%	96			70-130	Pass	
m&p-Xylenes	M20-Se09914	CP	%	96			70-130	Pass	
o-Xylene	M20-Se09914	CP	%	105			70-130	Pass	
Toluene	M20-Se09914	CP	%	97			70-130	Pass	
Trichloroethene	M20-Se09914	CP	%	104			70-130	Pass	
Xylenes - Total*	M20-Se09914	CP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-Se09914	CP	%	89			70-130	Pass	
TRH C6-C10	M20-Se09914	CP	%	97			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M20-Se09915	CP	%	94			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	M20-Se09916	CP	%	71			70-130	Pass	
1.1.1-Trichloroethane	M20-Se09916	CP	%	88			70-130	Pass	
1.2-Dichlorobenzene	M20-Se09916	CP	%	92			70-130	Pass	
1.2-Dichloroethane	M20-Se09916	CP	%	81			70-130	Pass	
Benzene	M20-Se09916	CP	%	84			70-130	Pass	
Ethylbenzene	M20-Se09916	CP	%	91			70-130	Pass	
m&p-Xylenes	M20-Se09916	CP	%	93			70-130	Pass	
o-Xylene	M20-Se09916	CP	%	95			70-130	Pass	
Toluene	M20-Se09916	CP	%	80			70-130	Pass	
Trichloroethene	M20-Se09916	CP	%	83			70-130	Pass	
Xylenes - Total*	M20-Se09916	CP	%	94			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-Se09916	CP	%	90			70-130	Pass	
Spike - % Recovery									
				Result 1					
Fluoride (Total)	M20-Se09916	CP	%	112			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	M20-Se09917	CP	%	49			70-130	Fail	Q08
Spike - % Recovery									
				Result 1					
Fluoride (Total)	M20-Se09918	CP	%	97			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M20-Se09919	CP	%	107			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M20-Se09919	CP	%	105			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Se09922	CP	%	80			75-125	Pass	
Cadmium	M20-Se09922	CP	%	127			75-125	Fail	Q08
Chromium	M20-Se09922	CP	%	99			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	M20-Se09922	CP	%	76			75-125	Pass	
Lead	M20-Se09922	CP	%	130			75-125	Fail	Q08
Mercury	M20-Se09922	CP	%	117			75-125	Pass	
Molybdenum	M20-Se09922	CP	%	114			75-125	Pass	
Nickel	M20-Se09922	CP	%	78			75-125	Pass	
Selenium	M20-Se09922	CP	%	99			75-125	Pass	
Silver	M20-Se09922	CP	%	118			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M20-Se09894	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M20-Se09894	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M20-Se09894	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorooctanesulfonic acid (PFOS)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M20-Se09894	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M20-Se09894	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Se09895	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Hexachlorobutadiene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M20-Se09895	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Chloroethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M20-Se09895	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M20-Se09895	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
o-Xylene	M20-Se09895	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	M20-Se09895	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	M20-Se09895	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Se09895	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M20-Se09895	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	M20-Se09896	CP	mg/kg	< 5	< 5	<1	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	M20-Se09896	CP	pH Units	6.5	6.7	pass	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M20-Se09898	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M20-Se09898	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M20-Se09898	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M20-Se09898	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M20-Se09898	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M20-Se09898	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se09901	CP	mg/kg	14	12	18	30%	Pass	
Cadmium	M20-Se09901	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se09901	CP	mg/kg	36	31	16	30%	Pass	
Copper	M20-Se09901	CP	mg/kg	14	12	16	30%	Pass	
Lead	M20-Se09901	CP	mg/kg	26	21	20	30%	Pass	
Mercury	M20-Se09901	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se09901	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se09901	CP	mg/kg	19	16	17	30%	Pass	
Selenium	M20-Se09901	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se09901	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Tin	M20-Se09901	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se09901	CP	mg/kg	100	87	17	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M20-Se09902	CP	mg/kg	< 1	< 1	<1	30%	Pass	
% Moisture	M20-Se09902	CP	%	20	21	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se09902	CP	mg/kg	14	13	2.0	30%	Pass	
Cadmium	M20-Se09902	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se09902	CP	mg/kg	42	43	2.0	30%	Pass	
Copper	M20-Se09902	CP	mg/kg	14	13	1.0	30%	Pass	
Lead	M20-Se09902	CP	mg/kg	19	19	<1	30%	Pass	
Mercury	M20-Se09902	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se09902	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se09902	CP	mg/kg	23	23	1.0	30%	Pass	
Selenium	M20-Se09902	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se09902	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tin	M20-Se09902	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se09902	CP	mg/kg	31	31	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Fluoride (Total)	M20-Se09903	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Se09905	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Hexachlorobutadiene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M20-Se09905	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Bromobenzene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M20-Se09905	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M20-Se09905	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
o-Xylene	M20-Se09905	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	M20-Se09905	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	M20-Se09905	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Se09905	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M20-Se09905	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	M20-Se09906	CP	mg/kg	< 5	< 5	<1	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	M20-Se09906	CP	pH Units	7.9	8.0	pass	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Fluoride (Total)	M20-Se09907	CP	mg/kg	120	120	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Se09908	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M20-Se09908	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M20-Se09908	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M20-Se09908	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Hexachlorobutadiene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M20-Se09908	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M20-Se09908	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M20-Se09908	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
o-Xylene	M20-Se09908	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	M20-Se09908	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	M20-Se09908	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Se09908	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M20-Se09908	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M20-Se09908	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M20-Se09908	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M20-Se09908	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Se09909	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Hexachlorobutadiene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Isopropyl benzene (Cumene)	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M20-Se09909	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
o-Xylene	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	M20-Se09909	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M20-Se09909	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Heptachlor epoxide	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M20-Se09909	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M20-Se09909	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	M20-Se09909	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	M20-Se09909	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	M20-Se09909	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	M20-Se09909	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	M20-Se09909	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	M20-Se09909	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M20-Se09909	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M20-Se09909	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M20-Se09909	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	M20-Se09909	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	M20-Se09909	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M20-Se09909	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	M20-Se09909	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	M20-Se09909	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	M20-Se09909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M20-Se09912	CP	%	13	12	8.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se09912	CP	mg/kg	4.9	4.8	2.0	30%	Pass	
Cadmium	M20-Se09912	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se09912	CP	mg/kg	10	10.0	5.0	30%	Pass	
Copper	M20-Se09912	CP	mg/kg	9.9	9.6	3.0	30%	Pass	
Lead	M20-Se09912	CP	mg/kg	35	34	2.0	30%	Pass	
Mercury	M20-Se09912	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se09912	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se09912	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Selenium	M20-Se09912	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se09912	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tin	M20-Se09912	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se09912	CP	mg/kg	48	48	1.0	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M20-Se09914	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Fluoride (Total)	M20-Se09914	CP	mg/kg	110	< 100	21	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Se09915	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Hexachlorobutadiene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M20-Se09915	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M20-Se09915	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M20-Se09915	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
o-Xylene	M20-Se09915	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	M20-Se09915	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	M20-Se09915	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Se09915	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M20-Se09915	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	M20-Se09916	CP	mg/kg	< 5	< 5	<1	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	M20-Se09916	CP	pH Units	5.8	5.9	pass	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M20-Se09918	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M20-Se09918	CP	mg/kg	120	170	35	30%	Fail	Q15
TRH C29-C36	M20-Se09918	CP	mg/kg	97	130	29	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M20-Se09918	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M20-Se09918	CP	mg/kg	260	250	33	30%	Fail	Q15
TRH >C34-C40	M20-Se09918	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Fluoride (Total)	M20-Se09920	CP	mg/kg	110	120	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se09921	CP	mg/kg	11	14	19	30%	Pass	
Cadmium	M20-Se09921	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se09921	CP	mg/kg	23	27	19	30%	Pass	
Copper	M20-Se09921	CP	mg/kg	15	13	18	30%	Pass	
Lead	M20-Se09921	CP	mg/kg	42	41	3.0	30%	Pass	
Mercury	M20-Se09921	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se09921	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se09921	CP	mg/kg	10	9.8	3.0	30%	Pass	
Selenium	M20-Se09921	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se09921	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tin	M20-Se09921	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se09921	CP	mg/kg	53	51	4.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M20-Se09922	CP	%	14	14	2.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se09922	CP	mg/kg	27	29	6.0	30%	Pass	
Cadmium	M20-Se09922	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se09922	CP	mg/kg	25	28	8.0	30%	Pass	
Copper	M20-Se09922	CP	mg/kg	70	74	5.0	30%	Pass	
Lead	M20-Se09922	CP	mg/kg	190	200	6.0	30%	Pass	
Mercury	M20-Se09922	CP	mg/kg	0.3	0.3	5.0	30%	Pass	
Molybdenum	M20-Se09922	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se09922	CP	mg/kg	30	31	6.0	30%	Pass	
Selenium	M20-Se09922	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se09922	CP	mg/kg	0.3	0.3	5.0	30%	Pass	
Tin	M20-Se09922	CP	mg/kg	290	300	5.0	30%	Pass	
Zinc	M20-Se09922	CP	mg/kg	530	560	5.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M20-Se09923	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Michael Morrison	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Joseph Edouard	Senior Analyst-PFAS (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Sophie Bush	Senior Analyst-Asbestos (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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CHAIN OF CUSTODY RECORD

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03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Required Turnaround Time (TAT) — Default will be 5 days if not ticked
♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

Analyses — Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

Containers — Change container type & size if necessary

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	Asbestos	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1															
2	GA20-BH-HAW-07/2001/0.0-0.1	31/08/20	Soil	X											labeled as BH07-2001
3	GA20-BH-HAW-07/2002/0.4-0.5	31/08/20	Soil	X											labeled as BH07-2002
4	GA20-BH-HAW-07/2003/0.9-1.0	31/08/20	Soil												labeled as BH07-2003
5	GA20-BH-HAW-07/2004/1.4-1.5	31/08/20	Soil	X											labeled as BH07-2004
6	GA20-BH-HAW-04/2001/0.0-0.1	1/09/20	Soil	X											labeled as BH04-2001
7	GA20-BH-HAW-04/2002/0.4-0.5	1/09/20	Soil	X											labeled as BH04-2002
8	GA20-BH-HAW-04/2003/0.9-1.0	1/09/20	Soil												labeled as BH04-2003
9	GA20-BH-HAW-04/2004/1.4-1.5	1/09/20	Soil	X											labeled as BH04-2004
10	GA20-BH-HAW-09/2001/0.0-0.1	3/09/20	Soil	X											labeled as BH09-2001
	Add Rows		Total Counts	7											

Method of Shipment	☐ Courier (#	☐ Hand Delivered	☐ Postal	Name		Signature		Date		Time	

Laboratory Use Only											
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Temperature	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	742806

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2065
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 31 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
5 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard	Sampler(s)	TK, SZ
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT	Facility Code	
Contact Name	Matthew Sheppard					Handed over by	
Phone №	(03) 8862 3721					Email for Invoice	msheppard@golder.com.au
Special Directions						Email for Results	msheppard@golder.com.au
Purchase Order							
Quote ID №	200728GOL						

Analyses: Where metals are requested, please specify "Total" or "Filtered". SUITE codes must be used to attract SUITE pricing

Containers: Change container type & size if necessary

Required Turnaround Time (TAT): Default will be 5 days if not ticked

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	Asbestos	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	GA20-BH-HAW-09/2002/0.4-0.5	3/09/20	Soil	X											labeled as BH09-2002
2	GA20-BH-HAW-09/2003/0.9-1.0	3/09/20	Soil												labeled as BH09-2003
3	GA20-BH-HAW-09/2004/1.4-1.5	3/09/20	Soil	X											labeled as BH09-2004
4															
5															
6															
7															
8															
9															
10															
	Add Rows		Total Counts	2											

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Signature	Date	Time	
Laboratory Use Only	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature		
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №	74286	

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
[illegible] EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
[illegible] 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SHZ
Handed over by	
Email for Invoice	mshepparD@golder.com.au
Email for Results	mshepparD@golder.com.au

Analyses — Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.

Containers — Change container type & size if necessary.

Required Turnaround Time (TAT) — Default will be 5 days if not ticked.

☐ Overnight (reporting by 9am)◆ (◆Surcharge will apply)
☐ Same day ◆ ☐ 1 day ◆
☐ 2 days ◆ ☐ 3 days ◆
☒ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	BH07-2001	31/08/20												
2	BH07-2002	31/08/20												
3	BH07-2003	31/08/20												
4	BH07-2004	31/08/20												
5	BH04-2001	1/09/20												
6	BH04-2002	1/09/20												
7	BH04-2003	1/09/20												
8	BH04-2004	1/09/20												
9														
10														
	Add Rows		Total Counts											

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Signature	Date	Time

Laboratory Use Only	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date 8/9	Time 11:32	Temperature 10.1 ice			
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report № 742906			

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SHZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.

Containers: Change container type & size if necessary.

Required Turnaround Time (TAT): Default will be 5 days if not ticked.

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day ◆ ☐ 1 day ◆
☐ 2 days ◆ ☐ 3 days ◆
☒ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	BH09-2001	3/09/20												
2	BH09-2002	3/09/20												
3	BH09-2003	3/09/20												
4	BH09-2004	3/09/20												
5														
6														
7														
8														
9														
10														
	Add Rows		Total Counts											

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name		Signature		Date		Time	
Laboratory Use Only	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date 8/9		Time 1130		Temperature 10 | 1 ice	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report № 142806	

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request

#AU_CAU001_EnviroSampleVic

From: Michael Morrison
Sent: Tuesday, 8 September 2020 11:08 AM
To: #AU_CAU001_EnviroSampleVic; Jeffy Joseph
Subject: FW: Eurofins Sample Receipt Advice - Report 742353 : Site BILL ST HAWTHORN (20145767)
Attachments: 20145767_Bardia_COC1.xlsm; 20145767_Bills_COC2.xlsm; Chain of Custody.xlsx

Follow Up Flag: Follow up
Flag Status: Completed

FYI

Kind Regards,

Michael Morrison
Analytical Services Manager
Phone: 03 8564 5933
Mobile: 0499 201 025
Email : michaelmorrison@eurofins.com

From: Sheppard, Matthew <MSheppard@golder.com.au>
Sent: Tuesday, 8 September 2020 10:57 AM
To: Michael Morrison <MichaelMorrison@eurofins.com>
Subject: RE: Eurofins Sample Receipt Advice - Report 742353 : Site BILL ST HAWTHORN (20145767)

EXTERNAL EMAIL*

NOTE: This email chain appears to contain email from outside Golder

Mick,

Please find attached a copy of the analytical COC for the samples you will receive today. I understand they have been picked up and are in transit.

Please contact me if you have any questions.

Yours sincerely

Matt Sheppard

Matthew Sheppard ((BSc (Geo, EnvSc), BBus (Econ), Dip Ed))
Senior Environmental Scientist

GOLDER
Golder Associates Pty Ltd
Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121, Australia (PO Box 6079, Hawthorn West VIC 3122)
T: +61 3 8862 3500 | D: +61 3 8862 3721 | M: 0418 504 912 | golder.com
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From: MichaelMorrison@eurofins.com <MichaelMorrison@eurofins.com>
Sent: 08 September 2020 09:10
To: Sheppard, Matthew <MSheppard@golder.com.au>
Subject: RE: Eurofins Sample Receipt Advice - Report 742353 : Site BILL ST HAWTHORN (20145767)

EXTERNAL EMAIL

Hi Matt
Certainly- any missing samples I'll contact you straight away.
I'll organise this for you ASAP- should get picked up shortly

Kind Regards,

Michael Morrison
Analytical Services Manager
Phone: 03 8564 5933
Mobile: 0499 201 025
Email : michaelmorrison@eurofins.com

From: Sheppard, Matthew <MSheppard@golder.com.au>
Sent: Tuesday, 8 September 2020 9:07 AM
To: Michael Morrison <MichaelMorrison@eurofins.com>
Subject: RE: Eurofins Sample Receipt Advice - Report 742353 : Site BILL ST HAWTHORN (20145767)

EXTERNAL EMAIL*

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Mick,

Thanks for getting back to me. Please be a bit more proactive on this in the future by contacting me directly. Couriering is difficult at the moment as we are having to rely on couriers more due to no staff in the office. This particular courier was requested to pick up 3 esky's but only took 2.

Can you please arrange to have 3 esky's picked up from our office today. 1 esky will have the GA20 soil from the COC you already have. I will forward through a COC for the other samples shortly.

Please contact me if you have any questions.

Yours sincerely

Matt Sheppard

Matthew Sheppard ((BSc (Geo, EnvSc), BBus (Econ), Dip Ed))
Senior Environmental Scientist

742806

Golder Associates Pty Ltd
Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121, Australia (PO Box 6079, Hawthorn West VIC 3122)
GOLDER T: +61 3 8862 3500 | D: +61 3 8862 3721 | M: 0418 504 912 | golder.com
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From: MichaelMorrison@eurofins.com <MichaelMorrison@eurofins.com>
Sent: 07 September 2020 17:47
To: EnviroSampleVic@eurofins.com; Sheppard, Matthew <MSheppard@golder.com.au>
Subject: RE: Eurofins Sample Receipt Advice - Report 742353 : Site BILL ST HAWTHORN (20145767)

EXTERNAL EMAIL

Thanks for confirming Cahn

Kind Regards,

Michael Morrison
Analytical Services Manager
Phone: 03 8564 5933
Mobile: 0499 201 025
Email : michaelmorrison@eurofins.com

From: #AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofins.com>
Sent: Monday, 7 September 2020 5:41 PM
To: Michael Morrison <MichaelMorrison@eurofins.com>; Sheppard, Matthew <MSheppard@golder.com.au>
Subject: RE: Eurofins Sample Receipt Advice - Report 742353 : Site BILL ST HAWTHORN (20145767)

Hi Michael,

I can confirm this is the case.

I laid out the job and we didn't receive any samples after the ASB building materials.

SRA note is correct, no GA20-BH samples were received.

Thanks,
Canh

Sample Receipt

Eurofins Environment Testing
6 Monterey Rd
Dandenong South 3175

742806

AUSTRALIA
Phone : +61 3 8564 5000

Email : EnviroSampleVic@eurofins.com
Website : http://environment.eurofins.com.au

From: Michael Morrison <MichaelMorrison@eurofins.com>
Sent: Monday, 7 September 2020 5:35 PM
To: Sheppard, Matthew <MSheppard@golder.com.au>; #AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofins.com>
Subject: RE: Eurofins Sample Receipt Advice - Report 742353 : Site BILL ST HAWTHORN (20145767)

Hi Matt
Looks like the samples have not been received

> **Notes**
>
> All GA20-BH samples were not received.

Cahn- can you please confirm this is the case?

Kind Regards,

Michael Morrison
Analytical Services Manager
Phone: 03 8564 5933
Mobile: 0499 201 025
Email : michaelmorrison@eurofins.com

From: Sheppard, Matthew <MSheppard@golder.com.au>
Sent: Monday, 7 September 2020 5:26 PM
To: Michael Morrison <MichaelMorrison@eurofins.com>
Subject: FW: Eurofins Sample Receipt Advice - Report 742353 : Site BILL ST HAWTHORN (20145767)

EXTERNAL EMAIL*

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Mick,

Just noted a discrepancy with this batch. The COC contains borehole (BH) and test pit (TP) samples, whilst the sample receipt only has TP samples, however, I haven't received anything to say there are samples missing.

Can you please chase this up?

Matt

Matthew Sheppard ((BSc (Geo, EnvSc), BBus (Econ), Dip Ed))
Senior Environmental Scientist

742806

Golder Associates Pty Ltd
Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121, Australia (PO Box 6079, Hawthorn West VIC 3122)
T: +61 3 8862 3500 | D: +61 3 8862 3721 | M: 0418 504 912 | golder.com
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From: EnviroSampleVic@eurofins.com <EnviroSampleVic@eurofins.com>
Sent: 05 September 2020 13:01
To: Sheppard, Matthew <MSheppard@golder.com.au>
Cc: MEL-ENVdata <_dbd4e@golder.com>
Subject: Eurofins Sample Receipt Advice - Report 742353 : Site BILL ST HAWTHORN (20145767)

EXTERNAL EMAIL

Dear Valued Client,

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible to make certain that they get changed.

Regards

Jake Beaumont
Sample Receipt

Eurofins Environment Testing Australia P/L
6 Montery Road
Dandenong South 3175
AUSTRALIA
EnviroNote 1098 - Melbourne PFAS Accreditation
EnviroNote 1103 - NATA Accreditation for Dioxins

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eurofins | Environment Testing

ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Golder Associates Pty Ltd (Richmond)
Contact name:	Matthew Sheppard
Project name:	BILL ST HAWTHORNE
Project ID:	20145767
Turnaround time:	5 Day
Date/Time received	Sep 8, 2020 11:30 AM
Eurofins reference	742806

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 10.1 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Matthew Sheppard - MSheppard@golder.com.au.

Note: A copy of these results will also be delivered to the general Golder Associates Pty Ltd (Richmond) email address.

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORNE
Project ID: 20145767

Order No.:
Report #: 742806
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 8, 2020 11:30 AM
Due: Sep 15, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Newcastle Laboratory								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GA20-BH-HAW-07/2001/0.0-0.1	Aug 31, 2020		Soil	M20-Se14688		X	X
2	GA20-BH-HAW-07/2002/0.4-0.5	Aug 31, 2020		Soil	M20-Se14689		X	X
3	GA20-BH-HAW-07/2004/1.4-1.5	Aug 31, 2020		Soil	M20-Se14690		X	X

eurofins | Environment Testing

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Site # 1254 & 14271

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORNE
Project ID: 20145767

Order No.:
Report #: 742806
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 8, 2020 11:30 AM
Due: Sep 15, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
4	GA20-BH-HAW-04/2001/0.0-0.1	Sep 01, 2020		Soil	M20-Se14691		X	X
5	GA20-BH-HAW-04/2002/0.4-0.5	Sep 01, 2020		Soil	M20-Se14692		X	X
6	GA20-BH-HAW-04/2004/1.4-1.5	Sep 01, 2020		Soil	M20-Se14693		X	X
7	GA20-BH-HAW-09/2001/0.0-0.1	Sep 03, 2020		Soil	M20-Se14694		X	X
8	GA20-BH-	Sep 03, 2020		Soil	M20-Se14695		X	X

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Richmond
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Project Name: BILL ST HAWTHORNE
Project ID: 20145767

Order No.:
Report #: 742806
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 8, 2020 11:30 AM
Due: Sep 15, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
8	GA20-BH-HAW-09/2002/0.4-0.5	Sep 03, 2020		Soil	M20-Se14695			
9	GA20-BH-HAW-09/2004/1.4-1.5	Sep 03, 2020		Soil	M20-Se14696		X	X
10	GA20-BH-HAW-07/2003/0.9-1.0	Aug 31, 2020		Soil	M20-Se14697	X		
11	GA20-BH-HAW-04/2003/0.9-1.0	Sep 01, 2020		Soil	M20-Se14698	X		
12	GA20-BH-	Sep 03, 2020		Soil	M20-Se14699	X		

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
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Project Name: BILL ST HAWTHORNE
Project ID: 20145767

Order No.:
Report #: 742806
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 8, 2020 11:30 AM
Due: Sep 15, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271	X	X	X
Sydney Laboratory - NATA Site # 18217			
Brisbane Laboratory - NATA Site # 20794			
Perth Laboratory - NATA Site # 23736			
HAW-09/2003/0.9-1.0			
Test Counts	3	9	9

eurofins | Environment Testing

Certificate of Analysis

Golder Associates Pty Ltd (Richmond)
570-588 Swan Street
Richmond
VIC 3121

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Matthew Sheppard**

Report **742806-S**
Project name BILL ST HAWTHORNE
Project ID 20145767
Received Date Sep 08, 2020

Client Sample ID			**GA20-BH-HAW-07/2001/0.0-0.1**	**GA20-BH-HAW-07/2002/0.4-0.5**	**GA20-BH-HAW-07/2004/1.4-1.5**	**GA20-BH-HAW-04/2001/0.0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se14688**	**M20-Se14689**	**M20-Se14690**	**M20-Se14691**
Date Sampled			**Aug 31, 2020**	**Aug 31, 2020**	**Aug 31, 2020**	**Sep 01, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	76
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	76
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-07/2001/0.0-0.1	GA20-BH-HAW-07/2002/0.4-0.5	GA20-BH-HAW-07/2004/1.4-1.5	GA20-BH-HAW-04/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se14688**	**M20-Se14689**	**M20-Se14690**	**M20-Se14691**
Date Sampled			**Aug 31, 2020**	**Aug 31, 2020**	**Aug 31, 2020**	**Sep 01, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	91	86	138	90
Toluene-d8 (surr.)	1	%	104	102	121	111
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.0	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.3	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-07/2001/0.0-0.1	GA20-BH-HAW-07/2002/0.4-0.5	GA20-BH-HAW-07/2004/1.4-1.5	GA20-BH-HAW-04/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se14688**	**M20-Se14689**	**M20-Se14690**	**M20-Se14691**
Date Sampled			**Aug 31, 2020**	**Aug 31, 2020**	**Aug 31, 2020**	**Sep 01, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	0.8	< 0.5	< 0.5	0.7
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	1.0	< 0.5	< 0.5	0.8
Total PAH*	0.5	mg/kg	4	< 0.5	< 0.5	1.5
2-Fluorobiphenyl (surr.)	1	%	84	84	58	97
p-Terphenyl-d14 (surr.)	1	%	91	101	75	96
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.08
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.08
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	81	80	112	100
Tetrachloro-m-xylene (surr.)	1	%	97	92	50	106

Client Sample ID			GA20-BH-HAW-07/2001/0.0-0.1	GA20-BH-HAW-07/2002/0.4-0.5	GA20-BH-HAW-07/2004/1.4-1.5	GA20-BH-HAW-04/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se14688**	**M20-Se14689**	**M20-Se14690**	**M20-Se14691**
Date Sampled			**Aug 31, 2020**	**Aug 31, 2020**	**Aug 31, 2020**	**Sep 01, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	81	80	112	100
Tetrachloro-m-xylene (surr.)	1	%	97	92	50	106
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	76	81	59	82
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	< 100	< 100	260	< 100
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.6	7.3	7.4	6.6
% Moisture	1	%	13	14	15	14
Heavy Metals						
Arsenic	2	mg/kg	10	6.9	5.0	4.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	9.4	13	31	15
Copper	5	mg/kg	7.4	< 5	9.1	16
Lead	5	mg/kg	38	15	14	74
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	< 5	< 5	11	11

Client Sample ID			GA20-BH-HAW-07/2001/0.0-0.1	GA20-BH-HAW-07/2002/0.4-0.5	GA20-BH-HAW-07/2004/1.4-1.5	GA20-BH-HAW-04/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se14688**	**M20-Se14689**	**M20-Se14690**	**M20-Se14691**
Date Sampled			**Aug 31, 2020**	**Aug 31, 2020**	**Aug 31, 2020**	**Sep 01, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	39	11	13	140

Client Sample ID			GA20-BH-HAW-04/2002/0.4-0.5	GA20-BH-HAW-04/2004/1.4-1.5	GA20-BH-HAW-09/2001/0.0-0.1	GA20-BH-HAW-09/2002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se14692**	**M20-Se14693**	**M20-Se14694**	**M20-Se14695**
Date Sampled			**Sep 01, 2020**	**Sep 01, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	78	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	80	< 50	73	< 50
TRH C10-C36 (Total)	50	mg/kg	158	< 50	73	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-04/2002/0.4-0.5	GA20-BH-HAW-04/2004/1.4-1.5	GA20-BH-HAW-09/2001/0.0-0.1	GA20-BH-HAW-09/2002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se14692**	**M20-Se14693**	**M20-Se14694**	**M20-Se14695**
Date Sampled			**Sep 01, 2020**	**Sep 01, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	94	100	123	72
Toluene-d8 (surr.)	1	%	113	119	121	116
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	180	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	180	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	2.8	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	3.0	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	3.3	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-04/2002/0.4-0.5	GA20-BH-HAW-04/2004/1.4-1.5	GA20-BH-HAW-09/2001/0.0-0.1	GA20-BH-HAW-09/2002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se14692**	**M20-Se14693**	**M20-Se14694**	**M20-Se14695**
Date Sampled			**Sep 01, 2020**	**Sep 01, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	1.8	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	2.1	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.7	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	1.6	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	1.6	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	1.9	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	3.8	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	1.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	0.9	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	4.2	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	21.1	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	88	82	91	59
p-Terphenyl-d14 (surr.)	1	%	91	91	102	70
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	90	137	93	97
Tetrachloro-m-xylene (surr.)	1	%	95	93	97	78

Client Sample ID			GA20-BH-HAW-04/2002/0.4-0.5	GA20-BH-HAW-04/2004/1.4-1.5	GA20-BH-HAW-09/2001/0.0-0.1	GA20-BH-HAW-09/2002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se14692**	**M20-Se14693**	**M20-Se14694**	**M20-Se14695**
Date Sampled			**Sep 01, 2020**	**Sep 01, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	90	137	93	97
Tetrachloro-m-xylene (surr.)	1	%	95	93	97	78
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	83	78	77	55
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	< 100	< 100	430	150
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.7	7.0	6.9	8.5
% Moisture	1	%	10	13	15	14
Heavy Metals						
Arsenic	2	mg/kg	3.8	3.5	5.4	9.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	20	17	26
Copper	5	mg/kg	11	< 5	25	13
Lead	5	mg/kg	240	8.9	34	21
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	7.0	< 5	12	12

Client Sample ID			GA20-BH-HAW-04/2002/0.4-0.5	GA20-BH-HAW-04/2004/1.4-1.5	GA20-BH-HAW-09/2001/0.0-0.1	GA20-BH-HAW-09/2002/0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se14692**	**M20-Se14693**	**M20-Se14694**	**M20-Se14695**
Date Sampled			Sep 01, 2020	Sep 01, 2020	Sep 03, 2020	Sep 03, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	0.3
Tin	10	mg/kg	< 10	< 10	27	< 10
Zinc	5	mg/kg	63	8.0	270	78

Client Sample ID			GA20-BH-HAW-09/2004/1.4-1.5
Sample Matrix			**Soil**
Eurofins Sample No.			**M20-Se14696**
Date Sampled			Sep 03, 2020
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
Volatile Organics			
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1.1-Dichloroethane	0.5	mg/kg	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5

Client Sample ID			GA20-BH-HAW-09/2004/1.4-1.5
Sample Matrix			Soil
Eurofins Sample No.			M20-Se14696
Date Sampled			Sep 03, 2020
Test/Reference	LOR	Unit	
Volatile Organics			
Bromoform	0.5	mg/kg	< 0.5
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	59
Toluene-d8 (surr.)	1	%	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5

Client Sample ID			GA20-BH-HAW-09/2004/1.4-1.5
Sample Matrix			Soil
Eurofins Sample No.			M20-Se14696
Date Sampled			Sep 03, 2020
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	58
p-Terphenyl-d14 (surr.)	1	%	83
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	88
Tetrachloro-m-xylene (surr.)	1	%	83

Client Sample ID			GA20-BH-HAW-09/2004/1.4-1.5
Sample Matrix			Soil
Eurofins Sample No.			M20-Se14696
Date Sampled			Sep 03, 2020
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	88
Tetrachloro-m-xylene (surr.)	1	%	83
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	55
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride (Total)	100	mg/kg	480
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.2
% Moisture	1	%	21
Heavy Metals			
Arsenic	2	mg/kg	8.0
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	33
Copper	5	mg/kg	8.5
Lead	5	mg/kg	16
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	13

Client Sample ID			GA20-BH-HAW-09/2004/1.4-1.5
Sample Matrix			Soil
Eurofins Sample No.			M20-Se14696
Date Sampled			Sep 03, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	27

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 09, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Sep 09, 2020	7 Days
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Sep 09, 2020	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 09, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 09, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 09, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Sep 09, 2020	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Polychlorinated Biphenyls	Melbourne	Sep 09, 2020	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Phenols (Halogenated)	Melbourne	Sep 09, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Sep 09, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Sep 09, 2020	28 Days
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Sep 09, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride (Total)	Melbourne	Sep 10, 2020	28 Days
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Sep 09, 2020	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Sep 10, 2020	28 Days
- Method:			
% Moisture	Melbourne	Sep 08, 2020	14 Days
- Method: LTM-GEN-7080 Moisture			

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORNE
Project ID: 20145767

Order No.:
Report #: 742806
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 8, 2020 11:30 AM
Due: Sep 15, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Newcastle Laboratory								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GA20-BH-HAW-07/2001/0.0-0.1	Aug 31, 2020		Soil	M20-Se14688		X	X
2	GA20-BH-HAW-07/2002/0.4-0.5	Aug 31, 2020		Soil	M20-Se14689		X	X
3	GA20-BH-HAW-07/2004/1.4-1.5	Aug 31, 2020		Soil	M20-Se14690		X	X

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IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
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Project ID: 20145767

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Phone: (03) 8862 3500
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Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
4	GA20-BH-HAW-04/2001/0.0-0.1	Sep 01, 2020		Soil	M20-Se14691		X	X
5	GA20-BH-HAW-04/2002/0.4-0.5	Sep 01, 2020		Soil	M20-Se14692		X	X
6	GA20-BH-HAW-04/2004/1.4-1.5	Sep 01, 2020		Soil	M20-Se14693		X	X
7	GA20-BH-HAW-09/2001/0.0-0.1	Sep 03, 2020		Soil	M20-Se14694		X	X
8	GA20-BH-	Sep 03, 2020		Soil	M20-Se14695		X	X

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Project ID: 20145767

Order No.:
Report #: 742806
Phone: (03) 8862 3500
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Received: Sep 8, 2020 11:30 AM
Due: Sep 15, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
8	GA20-BH-HAW-09/2002/0.4-0.5	Sep 03, 2020		Soil	M20-Se14695			
9	GA20-BH-HAW-09/2004/1.4-1.5	Sep 03, 2020		Soil	M20-Se14696		X	X
10	GA20-BH-HAW-07/2003/0.9-1.0	Aug 31, 2020		Soil	M20-Se14697	X		
11	GA20-BH-HAW-04/2003/0.9-1.0	Sep 01, 2020		Soil	M20-Se14698	X		
12	GA20-BH-	Sep 03, 2020		Soil	M20-Se14699	X		

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Project Name: BILL ST HAWTHORNE
Project ID: 20145767

Order No.:
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Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 8, 2020 11:30 AM
Due: Sep 15, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail	HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271	X	X	X
Sydney Laboratory - NATA Site # 18217			
Brisbane Laboratory - NATA Site # 20794			
Perth Laboratory - NATA Site # 23736			
HAW-09/2003/0.9-1.0			
Test Counts	3	9	9

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride (Total)	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	%	99			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	84			70-130	Pass	
1.1.1-Trichloroethane	%	76			70-130	Pass	
1.2-Dichlorobenzene	%	75			70-130	Pass	
1.2-Dichloroethane	%	75			70-130	Pass	
Benzene	%	86			70-130	Pass	
Ethylbenzene	%	83			70-130	Pass	
m&p-Xylenes	%	81			70-130	Pass	
Toluene	%	80			70-130	Pass	
Trichloroethene	%	79			70-130	Pass	
Xylenes - Total*	%	82			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	86			70-130	Pass	
TRH >C10-C16	%	100			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	103			70-130	Pass	
Acenaphthylene	%	105			70-130	Pass	
Anthracene	%	111			70-130	Pass	
Benz(a)anthracene	%	91			70-130	Pass	
Benzo(a)pyrene	%	112			70-130	Pass	
Benzo(b&j)fluoranthene	%	97			70-130	Pass	
Benzo(g.h.i)perylene	%	98			70-130	Pass	
Benzo(k)fluoranthene	%	109			70-130	Pass	
Chrysene	%	112			70-130	Pass	
Dibenz(a.h)anthracene	%	101			70-130	Pass	
Fluoranthene	%	129			70-130	Pass	
Fluorene	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	104			70-130	Pass	
Naphthalene	%	100			70-130	Pass	
Phenanthrene	%	109			70-130	Pass	
Pyrene	%	128			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	118			70-130	Pass	
4.4'-DDD	%	104			70-130	Pass	
4.4'-DDE	%	119			70-130	Pass	
4.4'-DDT	%	107			70-130	Pass	
a-BHC	%	107			70-130	Pass	
Aldrin	%	115			70-130	Pass	
b-BHC	%	114			70-130	Pass	
d-BHC	%	111			70-130	Pass	
Dieldrin	%	117			70-130	Pass	
Endosulfan I	%	114			70-130	Pass	
Endosulfan II	%	122			70-130	Pass	
Endosulfan sulphate	%	106			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	%	115			70-130	Pass	
Endrin aldehyde	%	91			70-130	Pass	
Endrin ketone	%	106			70-130	Pass	
g-BHC (Lindane)	%	114			70-130	Pass	
Heptachlor	%	111			70-130	Pass	
Heptachlor epoxide	%	126			70-130	Pass	
Hexachlorobenzene	%	114			70-130	Pass	
Methoxychlor	%	97			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	100			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	89			30-130	Pass	
2.4-Dichlorophenol	%	99			30-130	Pass	
2.4.5-Trichlorophenol	%	108			30-130	Pass	
2.4.6-Trichlorophenol	%	106			30-130	Pass	
2.6-Dichlorophenol	%	106			30-130	Pass	
4-Chloro-3-methylphenol	%	104			30-130	Pass	
Pentachlorophenol	%	95			30-130	Pass	
Tetrachlorophenols - Total	%	107			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	57			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	66			30-130	Pass	
2-Methylphenol (o-Cresol)	%	101			30-130	Pass	
2-Nitrophenol	%	87			30-130	Pass	
2.4-Dimethylphenol	%	101			30-130	Pass	
2.4-Dinitrophenol	%	37			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	103			30-130	Pass	
4-Nitrophenol	%	114			30-130	Pass	
Dinoseb	%	83			30-130	Pass	
Phenol	%	89			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	100			70-130	Pass	
Cyanide (total)	%	85			70-130	Pass	
Fluoride (Total)	%	104			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	104			80-120	Pass	
Cadmium	%	94			80-120	Pass	
Chromium	%	100			80-120	Pass	
Copper	%	100			80-120	Pass	
Lead	%	98			80-120	Pass	
Mercury	%	93			80-120	Pass	
Molybdenum	%	102			80-120	Pass	
Nickel	%	100			80-120	Pass	
Selenium	%	98			80-120	Pass	
Silver	%	88			80-120	Pass	
Tin	%	100			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M20-Se09919	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M20-Se09919	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	M20-Se17393	NCP	%	99			70-130	Pass	
Aroclor-1260	M20-Se17393	NCP	%	114			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	M20-Se14690	CP	%	118			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M20-Se14691	CP	%	95			70-130	Pass	
Acenaphthylene	M20-Se14691	CP	%	98			70-130	Pass	
Anthracene	M20-Se14691	CP	%	115			70-130	Pass	
Benz(a)anthracene	M20-Se14691	CP	%	84			70-130	Pass	
Benzo(a)pyrene	M20-Se14691	CP	%	97			70-130	Pass	
Benzo(b&j)fluoranthene	M20-Se14691	CP	%	93			70-130	Pass	
Benzo(g.h.i)perylene	M20-Se14691	CP	%	100			70-130	Pass	
Benzo(k)fluoranthene	M20-Se14691	CP	%	84			70-130	Pass	
Chrysene	M20-Se14691	CP	%	97			70-130	Pass	
Dibenz(a.h)anthracene	M20-Se14691	CP	%	98			70-130	Pass	
Fluoranthene	M20-Se14691	CP	%	119			70-130	Pass	
Fluorene	M20-Se14691	CP	%	98			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M20-Se14691	CP	%	97			70-130	Pass	
Naphthalene	M20-Se14691	CP	%	94			70-130	Pass	
Phenanthrene	M20-Se14691	CP	%	104			70-130	Pass	
Pyrene	M20-Se14691	CP	%	120			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M20-Se14691	CP	%	89			30-130	Pass	
2.4-Dichlorophenol	M20-Se14691	CP	%	96			30-130	Pass	
2.4.5-Trichlorophenol	M20-Se14691	CP	%	110			30-130	Pass	
2.4.6-Trichlorophenol	M20-Se14691	CP	%	103			30-130	Pass	
2.6-Dichlorophenol	M20-Se14691	CP	%	106			30-130	Pass	
4-Chloro-3-methylphenol	M20-Se14691	CP	%	103			30-130	Pass	
Pentachlorophenol	M20-Se14691	CP	%	62			30-130	Pass	
Tetrachlorophenols - Total	M20-Se14691	CP	%	102			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M20-Se14691	CP	%	54			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M20-Se14691	CP	%	65			30-130	Pass	
2-Methylphenol (o-Cresol)	M20-Se14691	CP	%	100			30-130	Pass	
2-Nitrophenol	M20-Se14691	CP	%	88			30-130	Pass	
2.4-Dimethylphenol	M20-Se14691	CP	%	102			30-130	Pass	
2.4-Dinitrophenol	M20-Se14691	CP	%	33			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M20-Se14691	CP	%	101			30-130	Pass	
4-Nitrophenol	M20-Se14691	CP	%	108			30-130	Pass	
Dinoseb	M20-Se14691	CP	%	95			30-130	Pass	
Phenol	M20-Se14691	CP	%	93			30-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
				Result 1					
Fluoride (Total)	M20-Se14691	CP	%	76			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	M20-Se14692	CP	%	102			70-130	Pass	
1.2-Dichlorobenzene	M20-Se14692	CP	%	85			70-130	Pass	
1.2-Dichloroethane	M20-Se14692	CP	%	85			70-130	Pass	
Benzene	M20-Se14692	CP	%	75			70-130	Pass	
Ethylbenzene	M20-Se14692	CP	%	85			70-130	Pass	
m&p-Xylenes	M20-Se14692	CP	%	73			70-130	Pass	
o-Xylene	M20-Se14692	CP	%	73			70-130	Pass	
Toluene	M20-Se14692	CP	%	70			70-130	Pass	
Xylenes - Total*	M20-Se14692	CP	%	73			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-Se14692	CP	%	128			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M20-Se14693	CP	%	111			70-130	Pass	
4.4'-DDD	M20-Se14693	CP	%	91			70-130	Pass	
4.4'-DDE	M20-Se14693	CP	%	108			70-130	Pass	
4.4'-DDT	M20-Se14693	CP	%	99			70-130	Pass	
a-BHC	M20-Se14693	CP	%	91			70-130	Pass	
Aldrin	M20-Se14693	CP	%	103			70-130	Pass	
b-BHC	M20-Se14693	CP	%	93			70-130	Pass	
d-BHC	M20-Se14693	CP	%	72			70-130	Pass	
Dieldrin	M20-Se14693	CP	%	101			70-130	Pass	
Endosulfan I	M20-Se14693	CP	%	111			70-130	Pass	
Endosulfan II	M20-Se14693	CP	%	99			70-130	Pass	
Endosulfan sulphate	M20-Se14693	CP	%	90			70-130	Pass	
Endrin	M20-Se14693	CP	%	95			70-130	Pass	
Endrin aldehyde	M20-Se14693	CP	%	113			70-130	Pass	
Endrin ketone	M20-Se14693	CP	%	98			70-130	Pass	
g-BHC (Lindane)	M20-Se14693	CP	%	84			70-130	Pass	
Heptachlor	M20-Se14693	CP	%	90			70-130	Pass	
Heptachlor epoxide	M20-Se14693	CP	%	119			70-130	Pass	
Hexachlorobenzene	M20-Se14693	CP	%	102			70-130	Pass	
Methoxychlor	M20-Se14693	CP	%	76			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Se14693	CP	%	71			75-125	Fail	Q08
Cadmium	M20-Se14693	CP	%	83			75-125	Pass	
Chromium	M20-Se14693	CP	%	75			75-125	Pass	
Copper	M20-Se14693	CP	%	73			75-125	Fail	Q08
Lead	M20-Se14693	CP	%	73			75-125	Fail	Q08
Mercury	M20-Se14693	CP	%	83			75-125	Pass	
Molybdenum	M20-Se14693	CP	%	73			75-125	Fail	Q08
Nickel	M20-Se14693	CP	%	74			75-125	Fail	Q08
Selenium	M20-Se14693	CP	%	67			75-125	Fail	Q08
Silver	M20-Se14693	CP	%	76			75-125	Pass	
Tin	M20-Se14693	CP	%	74			75-125	Fail	Q08
Zinc	M20-Se14693	CP	%	70			75-125	Fail	Q08
Spike - % Recovery									
				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium (hexavalent)	M20-Se14694	CP	%	96			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1.1-Trichloroethane	M20-Se15194	NCP	%	75			70-130	Pass	
Trichloroethene	M20-Se15194	NCP	%	81			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M20-Se09918	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M20-Se09918	NCP	mg/kg	120	170	35	30%	Fail	Q15
TRH C29-C36	M20-Se09918	NCP	mg/kg	97	130	29	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M20-Se09918	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M20-Se09918	NCP	mg/kg	180	250	33	30%	Fail	Q15
TRH >C34-C40	M20-Se09918	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	M20-Se12911	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Fluoride (Total)	M20-Jl52284	NCP	mg/kg	< 100	200	200	30%	Fail	Q15
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M20-Se14690	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin ketone	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M20-Se14690	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M20-Se14690	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M20-Se14690	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M20-Se14690	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M20-Se14690	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M20-Se14690	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M20-Se14690	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M20-Se14690	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M20-Se14690	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	M20-Se14690	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	M20-Se14690	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	M20-Se14690	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	M20-Se14690	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	M20-Se14690	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	M20-Se14690	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M20-Se14690	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M20-Se14690	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M20-Se14690	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	M20-Se14690	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	M20-Se14690	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M20-Se14690	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	M20-Se14690	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	M20-Se14690	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	M20-Se14690	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Se14691	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Hexachlorobutadiene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.2-Dibromoethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M20-Se14691	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M20-Se14691	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M20-Se14691	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
o-Xylene	M20-Se14691	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	M20-Se14691	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	M20-Se14691	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Se14691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M20-Se14691	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se14692	CP	mg/kg	3.8	3.8	<1	30%	Pass	
Cadmium	M20-Se14692	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se14692	CP	mg/kg	12	12	<1	30%	Pass	
Copper	M20-Se14692	CP	mg/kg	11	11	<1	30%	Pass	
Lead	M20-Se14692	CP	mg/kg	240	240	<1	30%	Pass	
Mercury	M20-Se14692	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se14692	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se14692	CP	mg/kg	7.0	7.0	<1	30%	Pass	
Selenium	M20-Se14692	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se14692	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tin	M20-Se14692	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se14692	CP	mg/kg	63	63	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M20-Se14693	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se14693	CP	mg/kg	3.5	3.6	4.0	30%	Pass	
Cadmium	M20-Se14693	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se14693	CP	mg/kg	20	20	1.0	30%	Pass	
Copper	M20-Se14693	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	M20-Se14693	CP	mg/kg	8.9	9.3	4.0	30%	Pass	
Mercury	M20-Se14693	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se14693	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se14693	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Selenium	M20-Se14693	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se14693	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tin	M20-Se14693	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se14693	CP	mg/kg	8.0	9.8	20	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (1:5 Aqueous extract at 25°C as rec.)	M20-Se14695	CP	pH Units	8.5	8.5	pass	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M20-Se14696	CP	%	21	21	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Michael Morrison	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses — Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

Containers — Change container type & size if necessary

Required Turnaround Time (TAT) — Default will be 5 days if not ticked

*Surcharge will apply

☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	Asbestos	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	GA20-BH-HAW-05/2001/0.0-0.1	4/09/20	Soil	X											
2	GA20-BH-HAW-05/2801/0.0-0.1	4/09/20	Soil	X											
3	GA20-BH-HAW-05/2901/0.0-0.1	4/09/20	Soil												labeled as BH07-2001
4	GA20-BH-HAW-05/2002/0.4-0.5	4/09/20	Soil	X											labeled as BH07-2002
5	GA20-BH-HAW-05/2003/0.9-1.0	4/09/20	Soil												labeled as BH07-2003
6	GA20-BH-HAW-05/2004/1.4-1.5	4/09/20	Soil	X											labeled as BH07-2004
7	GA20-BH-HAW-11/2001/0.0-0.1	10/09/20	Soil	X											labeled as BH04-2001
8	GA20-BH-HAW-11/2002/0.4-0.5	10/09/20	Soil	X											labeled as BH04-2002
9	GA20-BH-HAW-11/2003/0.9-1.0	10/09/20	Soil												labeled as BH04-2003
10	GA20-BH-HAW-11/2004/1.4-1.5	10/09/20	Soil	X											labeled as BH04-2004
	Add Rows		Total Counts	7											labeled as BH09-2001

Method of Shipment: ☑ Courier (#) ☐ Hand Delivered ☐ Postal

Name | Signature | Date 8/09/2020 | Time 10:00:00 AM

Laboratory Use Only							
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature	
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №	

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743581

Matrix Leave

CHAIN OF CUSTODY RECORD

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☐ Sydney Laboratory
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(02 9900 8400) EnviroSampleNSW@eurofins.com

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(07 3902 4600) EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
(08 9251 9600) EnviroSamplePH@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	mshepppard@golder.com.au
Email for Results	mshepppard@golder.com.au

Containers (Change container type & size if necessary)

Required Turnaround Time (TAT) (Default will be 5 days if not ticked)

- ☐ Overnight (reporting by 9am)♦
- ☐ Same day♦ ☐ 1 day♦
- ☐ 2 days♦ ☐ 3 days♦
- ☑ 5 days (Standard)
- ☐ Other( )

♦Surcharge will apply

Analyses — Where metals are requested please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	Asbestos	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	GA20-BH-HAW-11/2005/2.6-2.7	10/09/20	Soil	X											
2	GA20-BH-HAW-08/2001/0.0-0.1	8/09/20	Soil	X											
3	GA20-BH-HAW-08/2002/0.4-0.5	8/09/20	Soil	X											
4	GA20-BH-HAW-08/2003/0.9-1.0	8/09/20	Soil												
5	GA20-BH-HAW-08/2004/1.4-1.5	8/09/20	Soil	X											
6															
7															
8															
9															
10															
	Add Rows		Total Counts	4											

Method of Shipment	☑ Courier (#)	☐ Hand Delivered	☐ Postal	Name		Signature		Date	8/09/2020	Time	10:00:00 AM

Laboratory Use Only									
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Temperature	
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	

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743581
Mollie Rowe

#AU_CAU001_EnviroSampleVic

From: Sheppard, Matthew <MSheppard@golder.com.au>
Sent: Friday, 11 September 2020 11:42 AM
To: Michael Morrison
Cc: #AU_CAU001_EnviroSampleVic
Subject: RE: Message from AU20PRT102
Attachments: 20145767_Bills_COC3.xlsm

NOTE: This email chain appears to contain email from outside Golder

Mick,

Please see attached the analytical suite for the samples received yesterday.

Please contact me if you have any questions.

Yours sincerely

Matt Sheppard

Matthew Sheppard ((BSc (Geo, EnvSc), BBus (Econ), Dip Ed))
Senior Environmental Scientist

GOLDER

Golder Associates Pty Ltd
Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121, Australia (PO Box 6079, Hawthorn West VIC 3122)
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Please consider the environment before printing this email.

From: MichaelMorrison@eurofins.com <MichaelMorrison@eurofins.com>
Sent: 10 September 2020 17:17
To: Sheppard, Matthew <MSheppard@golder.com.au>
Cc: EnviroSampleVic@eurofins.com
Subject: FW: Message from AU20PRT102

EXTERNAL EMAIL

Hi Matt
Please send through the eCOC when you get a chance.

Kind Regards,

Michael Morrison
Analytical Services Manager

743581

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

Sydney Laboratory: Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066, 02 9900 8400, EnviroSampleNSW@eurofins.com
Brisbane Laboratory: Unit 1 21 Smallwood Place Murarrie QLD 4172, 07 3902 4600, EnviroSampleQLD@eurofins.com
Perth Laboratory: Unit 2 91 Leach Highway Kewdale WA 6105, 08 9251 9600, EnviroSampleWA@eurofins.com
Melbourne Laboratory: 6 Monterey Road Dandenong South VIC 3175, 03 8564 5000, EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SHZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses: Where metals are requested please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.

Containers: Change container type & size if necessary

Required Turnaround Time (TAT): Default will be 5 days if not ticked. ♦Surcharge will apply

- ☐ Overnight (reporting by 9am)♦
- ☐ Same day ♦ ☐ 1 day ♦
- ☐ 2 days ♦ ☐ 3 days ♦
- ☒ 5 days (Standard)
- ☐ Other( )

PID	Depth
0.1	0.0-0.1
0.1	0.0-0.1
0.1	0.0-0.1
0.0	0.4-0.5
0.2	0.9-1.0
0.0	1.4-1.5

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	GA20-BH-HAW-05/2001	4/9/20												
2	GA20-BH-HAW-05/2801	4/9/20												
3	GA20-BH-HAW-05/2801	4/9/20												
4	GA20-BH-HAW-05/2002	4/9/20												
5	GA20-BH-HAW-05/2003	4/9/20												
6	GA20-BH-HAW-05/2004	4/9/20												
7														
8														
9														
10														
	Add Rows		Total Counts											

Method of Shipment: ☐ Courier (#) ☐ Hand Delivered ☐ Postal | Name | Signature | Date | Time

Laboratory Use Only										
Received By	NM	SYD | BNE | (MEL) | PER | ADL | NTL | DRW	Signature		Date 10/9/20	Time 4:15	Temperature 28.6	NO ICE
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	Time	Report №	

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Nellie Reeve
743581

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02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SHZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses — Where metals are requested please specify "total" or "filtered". SUITE code must be added to attract SUITE pricing.

Containers — Change containers type & size if necessary

Required Turnaround Time (TAT) — Default will be 5 days if not ticked

*Surcharge will apply
☐ Overnight (reporting by 9am)*
☐ Same day ◆ ☐ 1 day ◆
☐ 2 days ◆ ☐ 3 days ◆
☒ 5 days (Standard)
☐ Other( )

PID	Depth	№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
0.3	0–0.1	1	GA20-BH-HAW-11/2001	10/9/20												
0.2	0.1–0.5	2	GA20-BH-HAW-11/2002	10/9/20												
0.1	0.9–1.0	3	GA20-BH-HAW-11/2003	10/9/20												
0.1	1.4–1.5	4	GA20-BH-HAW-11/2004	10/9/20												
(SPT)	2.75	5	GA20-BH-HAW-11/2005	10/9/20												
		6														
0.1	0–0.1	7	GA20-BH-HAW-08/2001	8/9/20												
0.4	0.4–0.5	8	GA20-BH-HAW-08/2002	8/9/20												
0.0	0.9–1	9	GA20-BH-HAW-08/2003	8/9/20												
0.0	1.4–1.5	10	GA20-BH-HAW-08/2004	8/9/20												
			Add Rows		Total Counts											

Method of Shipment: ☐ Courier (#) ☐ Hand Delivered ☐ Postal | Name | Signature | Date | Time

Laboratory Use Only								
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature		
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №		

Eurofins Environment Testing Australia Pty Ltd

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Matt Reeve
743581

eurofins | Environment Testing

ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

Australia

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6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
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Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Golder Associates Pty Ltd (Richmond)
Contact name:	M Sheppard
Project name:	Bill St Hawthorn
Project ID:	20145767
Turnaround time:	5 Day
Date/Time received	Sep 11, 2020 11:42 AM
Eurofins reference	743581

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 28.6 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✗ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to M Sheppard - Msheppard@golder.com.au.

Note: A copy of these results will also be delivered to the general Golder Associates Pty Ltd (Richmond) email address.

Global Leader - Results you can trust

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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Unit F3, Building F
16 Mars Road
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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 743581
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 11, 2020 11:42 AM
Due: Sep 18, 2020
Priority: 5 Day
Contact Name: M Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Newcastle Laboratory								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GA20-BH-HAW-05/2001/0.0-0.1	Sep 04, 2020		Soil	M20-Se20733		X	X
2	GA20-BH-HAW-05/2801/0.0-0.1	Sep 04, 2020		Soil	M20-Se20734		X	X
3	GA20-BH-HAW-05/2002/0.4-0.5	Sep 04, 2020		Soil	M20-Se20735		X	X

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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NATA # 1261
Site # 1254 & 14271

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Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 743581
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 11, 2020 11:42 AM
Due: Sep 18, 2020
Priority: 5 Day
Contact Name: M Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
4	GA20-BH-HAW-05/2004/1.4-1.5	Sep 04, 2020		Soil	M20-Se20736		X	X
5	GA20-BH-HAW-11/2001/0.0-0.1	Sep 10, 2020		Soil	M20-Se20737		X	X
6	GA20-BH-HAW-11/2002/0.4-0.5	Sep 10, 2020		Soil	M20-Se20738		X	X
7	GA20-BH-HAW-11/2004/1.4-1.5	Sep 10, 2020		Soil	M20-Se20739		X	X
8	GA20-BH-	Sep 10, 2020		Soil	M20-Se20740		X	X

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Company Name: Golder Associates Pty Ltd (Richmond)
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Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 743581
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 11, 2020 11:42 AM
Due: Sep 18, 2020
Priority: 5 Day
Contact Name: M Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
8	GA20-BH-HAW-11/2005/2.6-2.7	Sep 10, 2020		Soil	M20-Se20740			
9	GA20-BH-HAW-08/2001/0.0-0.1	Sep 08, 2020		Soil	M20-Se20741		X	X
10	GA20-BH-HAW-08/2002/0.4-0.5	Sep 08, 2020		Soil	M20-Se20742		X	X
11	GA20-BH-HAW-08/2004/1.4-1.5	Sep 08, 2020		Soil	M20-Se20743		X	X
12	GA20-BH-	Sep 04, 2020		Soil	M20-Se20744	X		

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Company Name: Golder Associates Pty Ltd (Richmond)
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Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 743581
Phone: (03) 8862 3500
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Received: Sep 11, 2020 11:42 AM
Due: Sep 18, 2020
Priority: 5 Day
Contact Name: M Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
	HAW-05/2901/0.0-0.1							
13	GA20-BH-HAW-05/2003/0.9-1.0	Sep 04, 2020		Soil	M20-Se20745	X		
14	GA20-BH-HAW-11/2003/0.9-1.0	Sep 10, 2020		Soil	M20-Se20746	X		
15	GA20-BH-HAW-08/2003/0.9-1.0	Sep 08, 2020		Soil	M20-Se20747	X		
Test Counts						4	11	11

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Golder Associates Pty Ltd (Richmond)
570-588 Swan Street
Richmond
VIC 3121

Attention: **M Sheppard**

Report **743581-S**
Project name Bill St Hawthorn
Project ID 20145767
Received Date Sep 11, 2020

Client Sample ID			**GA20-BH-HAW-05/2001/0.0-0.1**	**GA20-BH-HAW-05/2801/0.0-0.1**	**GA20-BH-HAW-05/2002/0.4-0.5**	**GA20-BH-HAW-05/2004/1.4-1.5**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20733**	**M20-Se20734**	**M20-Se20735**	**M20-Se20736**
Date Sampled			**Sep 04, 2020**	**Sep 04, 2020**	**Sep 04, 2020**	**Sep 04, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-05/2001/0.0-0.1	GA20-BH-HAW-05/2801/0.0-0.1	GA20-BH-HAW-05/2002/0.4-0.5	GA20-BH-HAW-05/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20733**	**M20-Se20734**	**M20-Se20735**	**M20-Se20736**
Date Sampled			**Sep 04, 2020**	**Sep 04, 2020**	**Sep 04, 2020**	**Sep 04, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	67	85	64	89
Toluene-d8 (surr.)	1	%	113	134	105	120
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-05/2001/0.0-0.1	GA20-BH-HAW-05/2801/0.0-0.1	GA20-BH-HAW-05/2002/0.4-0.5	GA20-BH-HAW-05/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20733**	**M20-Se20734**	**M20-Se20735**	**M20-Se20736**
Date Sampled			**Sep 04, 2020**	**Sep 04, 2020**	**Sep 04, 2020**	**Sep 04, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	73	82	81	84
p-Terphenyl-d14 (surr.)	1	%	101	112	117	134
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	100	80	75	74
Tetrachloro-m-xylene (surr.)	1	%	78	96	92	92

Client Sample ID			GA20-BH-HAW-05/2001/0.0-0.1	GA20-BH-HAW-05/2801/0.0-0.1	GA20-BH-HAW-05/2002/0.4-0.5	GA20-BH-HAW-05/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20733**	**M20-Se20734**	**M20-Se20735**	**M20-Se20736**
Date Sampled			**Sep 04, 2020**	**Sep 04, 2020**	**Sep 04, 2020**	**Sep 04, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	100	80	75	74
Tetrachloro-m-xylene (surr.)	1	%	78	96	92	92
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	63	74	81	78
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	< 100	< 100	< 100	430
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.3	7.2	6.0	7.6
% Moisture	1	%	12	12	13	20
Heavy Metals						
Arsenic	2	mg/kg	3.0	4.4	2.2	7.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	11	6.1	30
Copper	5	mg/kg	7.4	7.3	< 5	5.9
Lead	5	mg/kg	29	26	9.0	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	6.5	5.6	< 5	12

Client Sample ID			GA20-BH-HAW-05/2001/0.0-0.1	GA20-BH-HAW-05/2801/0.0-0.1	GA20-BH-HAW-05/2002/0.4-0.5	GA20-BH-HAW-05/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20733**	**M20-Se20734**	**M20-Se20735**	**M20-Se20736**
Date Sampled			**Sep 04, 2020**	**Sep 04, 2020**	**Sep 04, 2020**	**Sep 04, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	49	47	9.3	9.8

Client Sample ID			GA20-BH-HAW-11/2001/0.0-0.1	GA20-BH-HAW-11/2002/0.4-0.5	GA20-BH-HAW-11/2004/1.4-1.5	GA20-BH-HAW-11/2005/2.6-2.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20737**	**M20-Se20738**	**M20-Se20739**	**M20-Se20740**
Date Sampled			**Sep 10, 2020**	**Sep 10, 2020**	**Sep 10, 2020**	**Sep 10, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	120	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	150	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	270	< 50	< 50	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-11/2001/0.0-0.1	GA20-BH-HAW-11/2002/0.4-0.5	GA20-BH-HAW-11/2004/1.4-1.5	GA20-BH-HAW-11/2005/2.6-2.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20737**	**M20-Se20738**	**M20-Se20739**	**M20-Se20740**
Date Sampled			**Sep 10, 2020**	**Sep 10, 2020**	**Sep 10, 2020**	**Sep 10, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	93	91	90	90
Toluene-d8 (surr.)	1	%	117	124	123	122
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	230	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	230	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	2.2	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	2.4	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	2.7	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-11/2001/0.0-0.1	GA20-BH-HAW-11/2002/0.4-0.5	GA20-BH-HAW-11/2004/1.4-1.5	GA20-BH-HAW-11/2005/2.6-2.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20737**	**M20-Se20738**	**M20-Se20739**	**M20-Se20740**
Date Sampled			**Sep 10, 2020**	**Sep 10, 2020**	**Sep 10, 2020**	**Sep 10, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	2.1	0.6	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	1.6	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.3	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	1.2	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	1.3	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	2.0	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	4.7	0.6	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	0.9	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	3.3	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	4.1	0.6	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	23.1	1.8	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	92	90	87	96
p-Terphenyl-d14 (surr.)	1	%	98	98	92	106
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	105	114	108	124
Tetrachloro-m-xylene (surr.)	1	%	117	117	121	135

Client Sample ID			GA20-BH-HAW-11/2001/0.0-0.1	GA20-BH-HAW-11/2002/0.4-0.5	GA20-BH-HAW-11/2004/1.4-1.5	GA20-BH-HAW-11/2005/2.6-2.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20737**	**M20-Se20738**	**M20-Se20739**	**M20-Se20740**
Date Sampled			**Sep 10, 2020**	**Sep 10, 2020**	**Sep 10, 2020**	**Sep 10, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	105	114	108	124
Tetrachloro-m-xylene (surr.)	1	%	117	117	121	135
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	88	82	77	89
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	< 100	170	360	220
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.9	6.7	6.1	8.6
% Moisture	1	%	15	13	12	7.1
Heavy Metals						
Arsenic	2	mg/kg	4.5	11	7.9	7.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	20	32	41
Copper	5	mg/kg	16	13	16	25
Lead	5	mg/kg	48	87	18	57
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	8.0	9.6	35	91

Client Sample ID			GA20-BH-HAW-11/2001/0.0-0.1	GA20-BH-HAW-11/2002/0.4-0.5	GA20-BH-HAW-11/2004/1.4-1.5	GA20-BH-HAW-11/2005/2.6-2.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20737**	**M20-Se20738**	**M20-Se20739**	**M20-Se20740**
Date Sampled			**Sep 10, 2020**	**Sep 10, 2020**	**Sep 10, 2020**	**Sep 10, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	53	39	22	130

Client Sample ID			GA20-BH-HAW-08/2001/0.0-0.1	GA20-BH-HAW-08/2002/0.4-0.5	GA20-BH-HAW-08/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20741**	**M20-Se20742**	**M20-Se20743**
Date Sampled			**Sep 08, 2020**	**Sep 08, 2020**	**Sep 08, 2020**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	110	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	110	< 50	< 50
Volatile Organics					
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Volatile Organics					
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-08/2001/0.0-0.1	GA20-BH-HAW-08/2002/0.4-0.5	GA20-BH-HAW-08/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20741**	**M20-Se20742**	**M20-Se20743**
Date Sampled			**Sep 08, 2020**	**Sep 08, 2020**	**Sep 08, 2020**
Test/Reference	LOR	Unit			
Volatile Organics					
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	90	87	85
Toluene-d8 (surr.)	1	%	131	120	118
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	130	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	130	< 100	< 100
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-08/2001/0.0-0.1	GA20-BH-HAW-08/2002/0.4-0.5	GA20-BH-HAW-08/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20741**	**M20-Se20742**	**M20-Se20743**
Date Sampled			**Sep 08, 2020**	**Sep 08, 2020**	**Sep 08, 2020**
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	98	93	77
p-Terphenyl-d14 (surr.)	1	%	112	107	91
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	123	105	77
Tetrachloro-m-xylene (surr.)	1	%	118	119	99

Client Sample ID			GA20-BH-HAW-08/2001/0.0-0.1	GA20-BH-HAW-08/2002/0.4-0.5	GA20-BH-HAW-08/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20741**	**M20-Se20742**	**M20-Se20743**
Date Sampled			**Sep 08, 2020**	**Sep 08, 2020**	**Sep 08, 2020**
Test/Reference	LOR	Unit			
Polychlorinated Biphenyls					
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	123	105	77
Tetrachloro-m-xylene (surr.)	1	%	118	119	99
Phenols (Halogenated)					
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1
Phenols (non-Halogenated)					
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	92	68	45
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	< 100	< 100	550
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.1	6.6	7.5
% Moisture	1	%	9.8	10	21
Heavy Metals					
Arsenic	2	mg/kg	7.8	4.3	5.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	18	12	29
Copper	5	mg/kg	14	< 5	7.4
Lead	5	mg/kg	39	7.3	12
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5
Nickel	5	mg/kg	7.2	< 5	14

Client Sample ID			GA20-BH-HAW-08/2001/0.0-0.1	GA20-BH-HAW-08/2002/0.4-0.5	GA20-BH-HAW-08/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se20741**	**M20-Se20742**	**M20-Se20743**
Date Sampled			**Sep 08, 2020**	**Sep 08, 2020**	**Sep 08, 2020**
Test/Reference	LOR	Unit			
Heavy Metals					
Selenium	2	mg/kg	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10
Zinc	5	mg/kg	90	6.1	12

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 12, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Sep 12, 2020	7 Days
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Sep 12, 2020	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 12, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 12, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 12, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Sep 12, 2020	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Polychlorinated Biphenyls	Melbourne	Sep 12, 2020	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Phenols (Halogenated)	Melbourne	Sep 12, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Sep 12, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Sep 12, 2020	28 Days
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Sep 12, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride (Total)	Melbourne	Sep 14, 2020	28 Days
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Sep 12, 2020	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Sep 12, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Sep 11, 2020	14 Days
- Method: LTM-GEN-7080 Moisture			

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Company Name: Golder Associates Pty Ltd (Richmond)
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Richmond
VIC 3121

Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 743581
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 11, 2020 11:42 AM
Due: Sep 18, 2020
Priority: 5 Day
Contact Name: M Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Newcastle Laboratory								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GA20-BH-HAW-05/2001/0.0-0.1	Sep 04, 2020		Soil	M20-Se20733		X	X
2	GA20-BH-HAW-05/2801/0.0-0.1	Sep 04, 2020		Soil	M20-Se20734		X	X
3	GA20-BH-HAW-05/2002/0.4-0.5	Sep 04, 2020		Soil	M20-Se20735		X	X

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Address: 570-588 Swan Street
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Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
4	GA20-BH-HAW-05/2004/1.4-1.5	Sep 04, 2020		Soil	M20-Se20736		X	X
5	GA20-BH-HAW-11/2001/0.0-0.1	Sep 10, 2020		Soil	M20-Se20737		X	X
6	GA20-BH-HAW-11/2002/0.4-0.5	Sep 10, 2020		Soil	M20-Se20738		X	X
7	GA20-BH-HAW-11/2004/1.4-1.5	Sep 10, 2020		Soil	M20-Se20739		X	X
8	GA20-BH-	Sep 10, 2020		Soil	M20-Se20740		X	X

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Company Name: Golder Associates Pty Ltd (Richmond)
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Richmond
VIC 3121

Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 743581
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 11, 2020 11:42 AM
Due: Sep 18, 2020
Priority: 5 Day
Contact Name: M Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
8	GA20-BH-HAW-11/2005/2.6-2.7	Sep 10, 2020		Soil	M20-Se20740			
9	GA20-BH-HAW-08/2001/0.0-0.1	Sep 08, 2020		Soil	M20-Se20741		X	X
10	GA20-BH-HAW-08/2002/0.4-0.5	Sep 08, 2020		Soil	M20-Se20742		X	X
11	GA20-BH-HAW-08/2004/1.4-1.5	Sep 08, 2020		Soil	M20-Se20743		X	X
12	GA20-BH-	Sep 04, 2020		Soil	M20-Se20744	X		

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
	HAW-05/2901/0.0-0.1							
13	GA20-BH-HAW-05/2003/0.9-1.0	Sep 04, 2020		Soil	M20-Se20745	X		
14	GA20-BH-HAW-11/2003/0.9-1.0	Sep 10, 2020		Soil	M20-Se20746	X		
15	GA20-BH-HAW-08/2003/0.9-1.0	Sep 08, 2020		Soil	M20-Se20747	X		
Test Counts						4	11	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride (Total)	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	89			70-130	Pass	
TRH C10-C14	%	102			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	98			70-130	Pass	
1.1.1-Trichloroethane	%	112			70-130	Pass	
1.2-Dichlorobenzene	%	107			70-130	Pass	
1.2-Dichloroethane	%	105			70-130	Pass	
Benzene	%	109			70-130	Pass	
Ethylbenzene	%	123			70-130	Pass	
m&p-Xylenes	%	122			70-130	Pass	
Toluene	%	115			70-130	Pass	
Trichloroethene	%	110			70-130	Pass	
Xylenes - Total*	%	122			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	112			70-130	Pass	
TRH C6-C10	%	85			70-130	Pass	
TRH >C10-C16	%	103			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	95			70-130	Pass	
Acenaphthylene	%	98			70-130	Pass	
Anthracene	%	94			70-130	Pass	
Benz(a)anthracene	%	93			70-130	Pass	
Benzo(a)pyrene	%	93			70-130	Pass	
Benzo(b&j)fluoranthene	%	84			70-130	Pass	
Benzo(g.h.i)perylene	%	104			70-130	Pass	
Benzo(k)fluoranthene	%	82			70-130	Pass	
Chrysene	%	116			70-130	Pass	
Dibenz(a.h)anthracene	%	100			70-130	Pass	
Fluoranthene	%	100			70-130	Pass	
Fluorene	%	96			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	99			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
Phenanthrene	%	96			70-130	Pass	
Pyrene	%	98			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	84			70-130	Pass	
4.4'-DDD	%	73			70-130	Pass	
4.4'-DDE	%	89			70-130	Pass	
4.4'-DDT	%	84			70-130	Pass	
a-BHC	%	75			70-130	Pass	
Aldrin	%	82			70-130	Pass	
b-BHC	%	91			70-130	Pass	
d-BHC	%	90			70-130	Pass	
Dieldrin	%	77			70-130	Pass	
Endosulfan I	%	76			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	85			70-130	Pass	
Endosulfan sulphate	%	92			70-130	Pass	
Endrin	%	85			70-130	Pass	
Endrin aldehyde	%	82			70-130	Pass	
Endrin ketone	%	112			70-130	Pass	
g-BHC (Lindane)	%	86			70-130	Pass	
Heptachlor	%	76			70-130	Pass	
Heptachlor epoxide	%	84			70-130	Pass	
Hexachlorobenzene	%	88			70-130	Pass	
Methoxychlor	%	86			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	125			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	98			30-130	Pass	
2.4-Dichlorophenol	%	94			30-130	Pass	
2.4.5-Trichlorophenol	%	70			30-130	Pass	
2.4.6-Trichlorophenol	%	78			30-130	Pass	
2.6-Dichlorophenol	%	92			30-130	Pass	
4-Chloro-3-methylphenol	%	98			30-130	Pass	
Pentachlorophenol	%	78			30-130	Pass	
Tetrachlorophenols - Total	%	121			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Methyl-4.6-dinitrophenol	%	78			30-130	Pass	
2-Methylphenol (o-Cresol)	%	106			30-130	Pass	
2-Nitrophenol	%	95			30-130	Pass	
2.4-Dimethylphenol	%	105			30-130	Pass	
2.4-Dinitrophenol	%	53			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	106			30-130	Pass	
4-Nitrophenol	%	99			30-130	Pass	
Dinoseb	%	76			30-130	Pass	
Phenol	%	112			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	99			70-130	Pass	
Cyanide (total)	%	87			70-130	Pass	
Fluoride (Total)	%	85			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	89			80-120	Pass	
Cadmium	%	104			80-120	Pass	
Chromium	%	97			80-120	Pass	
Copper	%	94			80-120	Pass	
Lead	%	93			80-120	Pass	
Mercury	%	106			80-120	Pass	
Molybdenum	%	92			80-120	Pass	
Nickel	%	91			80-120	Pass	
Selenium	%	91			80-120	Pass	
Silver	%	108			80-120	Pass	
Tin	%	90			80-120	Pass	
Zinc	%	90			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M20-Se21283	NCP	%	113			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M20-Se21283	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M20-Se18875	NCP	%	86			70-130	Pass	
Acenaphthylene	M20-Se18875	NCP	%	80			70-130	Pass	
Anthracene	M20-Se18875	NCP	%	98			70-130	Pass	
Benz(a)anthracene	M20-Se18875	NCP	%	88			70-130	Pass	
Benzo(a)pyrene	M20-Se18875	NCP	%	81			70-130	Pass	
Benzo(b&j)fluoranthene	M20-Se18875	NCP	%	85			70-130	Pass	
Benzo(g.h.i)perylene	M20-Se18875	NCP	%	84			70-130	Pass	
Benzo(k)fluoranthene	M20-Se18875	NCP	%	83			70-130	Pass	
Chrysene	M20-Se18875	NCP	%	93			70-130	Pass	
Dibenz(a.h)anthracene	M20-Se18875	NCP	%	101			70-130	Pass	
Fluoranthene	M20-Se18875	NCP	%	90			70-130	Pass	
Fluorene	M20-Se18875	NCP	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M20-Se18875	NCP	%	94			70-130	Pass	
Naphthalene	M20-Se18875	NCP	%	88			70-130	Pass	
Phenanthrene	M20-Se18875	NCP	%	78			70-130	Pass	
Pyrene	M20-Se18875	NCP	%	77			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M20-Se18730	NCP	%	95			70-130	Pass	
4.4'-DDD	M20-Se18730	NCP	%	91			70-130	Pass	
4.4'-DDE	M20-Se18730	NCP	%	97			70-130	Pass	
4.4'-DDT	M20-Se18730	NCP	%	95			70-130	Pass	
a-BHC	M20-Se18730	NCP	%	119			70-130	Pass	
Aldrin	M20-Se18730	NCP	%	101			70-130	Pass	
b-BHC	M20-Se18730	NCP	%	70			70-130	Pass	
d-BHC	M20-Se18730	NCP	%	93			70-130	Pass	
Dieldrin	M20-Se18730	NCP	%	116			70-130	Pass	
Endosulfan I	M20-Se18730	NCP	%	100			70-130	Pass	
Endosulfan II	M20-Se18730	NCP	%	96			70-130	Pass	
Endosulfan sulphate	M20-Se18730	NCP	%	84			70-130	Pass	
Endrin	M20-Se18730	NCP	%	75			70-130	Pass	
Endrin aldehyde	M20-Se18730	NCP	%	107			70-130	Pass	
Endrin ketone	M20-Se18730	NCP	%	99			70-130	Pass	
g-BHC (Lindane)	M20-Se18730	NCP	%	116			70-130	Pass	
Heptachlor	M20-Se18730	NCP	%	116			70-130	Pass	
Heptachlor epoxide	M20-Se18730	NCP	%	102			70-130	Pass	
Hexachlorobenzene	M20-Se18730	NCP	%	84			70-130	Pass	
Methoxychlor	M20-Se18730	NCP	%	103			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	M20-Se08855	NCP	%	82			70-130	Pass	
Aroclor-1260	M20-Se08855	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M20-Se18875	NCP	%	75			30-130	Pass	
2.4-Dichlorophenol	M20-Se18875	NCP	%	69			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4.5-Trichlorophenol	M20-Se18875	NCP	%	92			30-130	Pass	
2.4.6-Trichlorophenol	M20-Se18875	NCP	%	122			30-130	Pass	
2.6-Dichlorophenol	M20-Se18875	NCP	%	70			30-130	Pass	
4-Chloro-3-methylphenol	M20-Se18875	NCP	%	75			30-130	Pass	
Pentachlorophenol	B20-Se03601	NCP	%	99			30-130	Pass	
Tetrachlorophenols - Total	M20-Se18875	NCP	%	69			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	B20-Se03601	NCP	%	68			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M20-Se18875	NCP	%	45			30-130	Pass	
2-Methylphenol (o-Cresol)	M20-Se18875	NCP	%	81			30-130	Pass	
2-Nitrophenol	M20-Se18875	NCP	%	77			30-130	Pass	
2.4-Dimethylphenol	M20-Se18875	NCP	%	92			30-130	Pass	
2.4-Dinitrophenol	B20-Se03601	NCP	%	74			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M20-Se18875	NCP	%	85			30-130	Pass	
4-Nitrophenol	M20-Se18875	NCP	%	45			30-130	Pass	
Dinoseb	M20-Se18875	NCP	%	63			30-130	Pass	
Phenol	M20-Se18875	NCP	%	78			30-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	K20-Se02392	NCP	%	70			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	M20-Se20734	CP	%	118			70-130	Pass	
1.1.1-Trichloroethane	M20-Se20734	CP	%	93			70-130	Pass	
1.2-Dichlorobenzene	M20-Se20734	CP	%	80			70-130	Pass	
1.2-Dichloroethane	M20-Se20734	CP	%	128			70-130	Pass	
Benzene	M20-Se20734	CP	%	94			70-130	Pass	
Ethylbenzene	M20-Se20734	CP	%	86			70-130	Pass	
m&p-Xylenes	M20-Se20734	CP	%	86			70-130	Pass	
o-Xylene	M20-Se20734	CP	%	89			70-130	Pass	
Toluene	M20-Se20734	CP	%	86			70-130	Pass	
Trichloroethene	M20-Se20734	CP	%	87			70-130	Pass	
Xylenes - Total*	M20-Se20734	CP	%	87			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-Se20734	CP	%	86			70-130	Pass	
Spike - % Recovery									
				Result 1					
Fluoride (Total)	M20-Se20734	CP	%	86			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M20-Se20735	CP	%	97			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M20-Se21537	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	M20-Se21537	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	M20-Se20741	CP	%	89			70-130	Pass	
1.1.1-Trichloroethane	M20-Se20741	CP	%	71			70-130	Pass	
1.2-Dichlorobenzene	M20-Se20741	CP	%	85			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.2-Dichloroethane	M20-Se20741	CP	%	75			70-130	Pass	
Benzene	M20-Se20741	CP	%	77			70-130	Pass	
Ethylbenzene	M20-Se20741	CP	%	71			70-130	Pass	
m&p-Xylenes	M20-Se20741	CP	%	82			70-130	Pass	
o-Xylene	M20-Se20741	CP	%	98			70-130	Pass	
Toluene	M20-Se20741	CP	%	74			70-130	Pass	
Trichloroethene	M20-Se20741	CP	%	73			70-130	Pass	
Xylenes - Total*	M20-Se20741	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-Se20741	CP	%	86			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Se20743	CP	%	108			75-125	Pass	
Cadmium	M20-Se20743	CP	%	107			75-125	Pass	
Chromium	M20-Se20743	CP	%	107			75-125	Pass	
Copper	M20-Se20743	CP	%	112			75-125	Pass	
Lead	M20-Se20743	CP	%	113			75-125	Pass	
Mercury	M20-Se20743	CP	%	106			75-125	Pass	
Molybdenum	M20-Se20743	CP	%	114			75-125	Pass	
Nickel	M20-Se20743	CP	%	109			75-125	Pass	
Selenium	M20-Se20743	CP	%	102			75-125	Pass	
Silver	M20-Se20743	CP	%	109			75-125	Pass	
Tin	M20-Se20743	CP	%	110			75-125	Pass	
Zinc	M20-Se20743	CP	%	106			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Se20733	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M20-Se21282	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M20-Se21282	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M20-Se21282	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Hexachlorobutadiene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
2-Butanone (MEK)	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M20-Se20733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M20-Se20733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M20-Se20733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
o-Xylene	M20-Se20733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	M20-Se20733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	M20-Se20733	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Se20733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M20-Se20733	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M20-Se21282	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M20-Se21282	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M20-Se21282	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Toxaphene	M20-Se21521	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M20-Se21521	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M20-Se21521	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M20-Se21521	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M20-Se21521	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M20-Se21521	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1254	M20-Se21521	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M20-Se21521	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	M20-Se21521	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	M20-Se19883	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Fluoride (Total)	M20-Se20733	CP	mg/kg	< 100	110	34	30%	Fail	Q15
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Se20740	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Hexachlorobutadiene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M20-Se20740	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Ethylbenzene	M20-Se20740	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M20-Se20740	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
o-Xylene	M20-Se20740	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	M20-Se20740	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	M20-Se20740	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Se20740	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M20-Se20740	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (1:5 Aqueous extract at 25°C as rec.)	M20-Se20740	CP	pH Units	8.6	8.6	pass	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M20-Se20741	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endosulfan sulphate	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M20-Se20741	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	M20-Se20741	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	M20-Se20741	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	M20-Se20741	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	M20-Se20741	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	M20-Se20741	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M20-Se20741	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M20-Se20741	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M20-Se20741	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	M20-Se20741	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	M20-Se20741	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M20-Se20741	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	M20-Se20741	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	M20-Se20741	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	M20-Se20741	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M20-Se20742	CP	mg/kg	< 1	< 1	<1	30%	Pass	
% Moisture	M20-Se20742	CP	%	10	10	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se20742	CP	mg/kg	4.3	8.9	70	30%	Fail	Q15
Cadmium	M20-Se20742	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se20742	CP	mg/kg	12	14	10	30%	Pass	
Copper	M20-Se20742	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	M20-Se20742	CP	mg/kg	7.3	12	48	30%	Fail	Q15
Mercury	M20-Se20742	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se20742	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se20742	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Selenium	M20-Se20742	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se20742	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tin	M20-Se20742	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se20742	CP	mg/kg	6.1	9.1	38	30%	Fail	Q15

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se20743	CP	mg/kg	5.3	5.4	2.0	30%	Pass	
Cadmium	M20-Se20743	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se20743	CP	mg/kg	29	31	6.0	30%	Pass	
Copper	M20-Se20743	CP	mg/kg	7.4	8.1	9.0	30%	Pass	
Lead	M20-Se20743	CP	mg/kg	12	14	13	30%	Pass	
Mercury	M20-Se20743	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se20743	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se20743	CP	mg/kg	14	15	8.0	30%	Pass	
Selenium	M20-Se20743	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se20743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tin	M20-Se20743	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se20743	CP	mg/kg	12	13	12	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Michael Morrison	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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CHAIN OF CUSTODY RECORD

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172

☐ Perth Laboratory
Unit 2 31 Leach Highway Kewdale WA 6105
08 9251 9601 : EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
5 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (Esdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	mshepparD@golder.com.au
Email for Results	mshepparD@golder.com.au

Analyses: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

Containers: Change container type & size if necessary

Required Turnaround Time (TAT): Default will be 5 days if not ticked

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	Asbestos	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	GA20-BH-HAW-01/2001/0.0-0.1	17/09/20	Soil	X											
2	GA20-BH-HAW-01/2601/0.0-0.1	17/09/20	Soil	X											
3	GA20-BH-HAW-01/2901/0.0-0.1	17/09/20	Soil												
4	GA20-BH-HAW-01/2002/0.4-0.5	17/09/20	Soil	X											
5	GA20-BH-HAW-01/2003/0.9-1.0	17/09/20	Soil												
6	GA20-BH-HAW-01/2004/1.4-1.5	17/09/20	Soil	X											
7	GA20-BH-HAW-02/2001/0.0-0.1	16/09/20	Soil	X											
8	GA20-BH-HAW-02/2002/0.4-0.5	16/09/20	Soil	X											
9	GA20-BH-HAW-02/2003/0.9-1.0	16/09/20	Soil												
10	GA20-BH-HAW-02/2004/1.4-1.5	16/09/20	Soil	X											
	Add Rows		Total Counts	7											

Please forward to ALS

Method of Shipment	☑ Courier (#	☐ Hand Delivered	☐ Postal	Name		Signature		Date	18/09/2020	Time	1:00:00 AM

Laboratory Use Only	Received By	Jake	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	21/9	Time	11:35	Temperature	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	745405

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 91 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 81 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses — Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

Containers — Change container type & size if necessary

Required Turnaround Time (TAT) — Default will be 5 days if not ticked

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Soid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	Asbestos	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	GA20-BH-HAW-12/2001/0.0-0.1	11/09/20	Soil	X											
2	GA20-BH-HAW-12/2002/0.4-0.5	11/09/20	Soil	X											labeled as BH07-2001
3	GA20-BH-HAW-12/2802/0.4-0.5	11/09/20	Soil	X											labeled as BH07-2002
4	GA20-BH-HAW-12/2902/0.4-0.5	11/09/20	Soil	To be forwarded to ALS											labeled as BH07-2003
5	GA20-BH-HAW-12/2003/0.9-1.0	11/09/20	Soil												labeled as BH07-2004
6	GA20-BH-HAW-12/2004/1.4-1.5	11/09/20	Soil	X											labeled as BH04-2001
7	GA20-BH-HAW-06/2001/0.0-0.1	15/09/20	Soil	X											labeled as BH04-2002
8	GA20-BH-HAW-02/2002/0.4-0.5	15/09/20	Soil	X											labeled as BH04-2003
9	GA20-BH-HAW-06/2003/0.9-1.0	15/09/20	Soil												labeled as BH04-2004
10	GA20-BH-HAW-06/2004/1.4-1.5	15/09/20	Soil	X											labeled as BH09-2001
	Add Rows		Total Counts	7											

Method of Shipment	☑ Courier (#	☐ Hand Delivered	☐ Postal	Name		Signature		Date	18/09/2020	Time	1:00:00 AM

Laboratory Use Only	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Temperature	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	

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GA-BQ-035 SAMPLE CHAIN OF CUSTODY DOCUMENTATION - SOIL/ROCK

Sheet..... of.....

Project & Task Number: 20145767 | Quote/Order No.:
Site Location: Bill St | Lab Name: ALS
Sampled By: MGS | Mobile No.:
Turnaround (Days) Standard | BY:
Report Format: ~~HARD~~ ☐ ~~FAX~~ ☐ EMAIL ☐ ELECTRONIC DATA FORMAT ☐

GOLDER ASSOCIATES PTY LTD | Phone: 0418504912 | GOLDER
Invoice to be sent to au_accountspayable@golder.com.au | Fax
Project Manager: Matthew Sheppard | Email: msheppard@golder.com.au
Contact Phone: 0418504912
Results To: Matthew Sheppard | Email: msheppard@golder.com.au

3

Comments/Special Instructions:

Samples from a declared Fire Ant Area: No
Samples taken from a known Weed and or Pest Area: No

ANALYSIS REQUIRED

SAMPLE ID	Depth	SAMPLE MATRIX	SAMPLE DATE	SAMPLE TIME	No. Containers	PRESERVATIVE	No CONTAINERS	POSSIBLE HIGH CONCENTRATION	IWRG 621 Suite	PFS (full suite)
GA20-BH-HAW-12/2902	0.4-0.5	S	11/09/2020		1		1		X	
GA20-BH-HAW-01/2901	0.0-0.1	S	17/09/2020		1		1		X	

COPY

SAMPLE MATRIX = Soil/Sediment/Fill/Rock/Other
SAMPLE TYPE = Composite(C)/Discrete(DC)/Disturbed(DS)/Core(CR)
HIGH CONCENTRATION: Tick box and circle expected parameters in analysis list

Container Type and Preservative Codes: P = Natural Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Preserved Vial; VS = Sulphuric Acid

	SIGNATURE	COMPANY	DATE	TIME
RELEASED BY	Matthew Sheppard	GOLDER	21/09/2020	1400
RECEIVED BY				
RELEASED BY				
RECEIVED BY				
RELEASED BY				
RECEIVED BY				

	SIGNATURE	COMPANY	DATE	TIME	Method of Shipment
RELEASED BY					Shipping Ref:
RECEIVED BY					

To Be Filled Out By Analysing Laboratory

Security Seal		Chilled		LAB. BATCH NUMBER	
Suitable Containers		Frozen		Bill to:	
Cool Box		Ambient		Address	

THIS FORM IS TO BE SIGNED BY GOLDER STAFF; COURIER/S; LABORATORY ON RECEIPT OF SAMPLES.

#AU_CAU001_EnviroSampleVic

From: Michael Morrison
Sent: Monday, 21 September 2020 11:37 AM
To: #AU_CAU001_EnviroSampleVic; Jeffy Joseph
Subject: FW: 20145767 analysis COC
Attachments: 20145767_Bills_COC4.xlsm; Chain of Custody.xlsx

FYI- from the problem COC list

Kind Regards,

Michael Morrison
Analytical Services Manager
Phone: 03 8564 5933
Mobile: 0499 201 025
Email : michaelmorrison@eurofins.com

From: Sheppard, Matthew <MSheppard@golder.com.au>
Sent: Monday, 21 September 2020 11:35 AM
To: Michael Morrison <MichaelMorrison@eurofins.com>
Subject: 20145767 analysis COC

EXTERNAL EMAIL*

Mick,

Please find attached a copy of the analysis COC for the sample you received on Friday. Please forward the interlab duplicates to ALS as requested with the attached COC.

Please contact me if you have any questions.

Yours sincerely

Matt Sheppard

Matthew Sheppard ((BSc (Geo, EnvSc), BBus (Econ), Dip Ed))
Senior Environmental Scientist

GOLDER

Golder Associates Pty Ltd
Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121, Australia (PO Box 6079, Hawthorn West VIC 3122)
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Work Safe, Home Safe

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Please consider the environment before printing this email.

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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

Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SHZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses: Where metals are requested please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing

Containers: Change container type & size if necessary

Required Turnaround Time (TAT): Default will be 5 days if not ticked

- ☐ Overnight (reporting by 9am)♦ (♦Surcharge will apply)
- ☐ Same day ♦ ☐ 1 day ♦
- ☐ 2 days ♦ ☐ 3 days ♦
- ☒ 5 days (Standard)
- ☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	GA20-BH-HAW-12/2001	11/9/20												
2	GA20-BH-HAW-12/2002	11/9/20												
3	GA20-BH-HAW-12/2802	11/9/20												
4	GA20-BH-HAW-12/2902	11/9/20												
5	GA20-BH-HAW-12/2003	11/9/20												
6	GA20-BH-HAW-12/2004	11/9/20												
7	GA20-BH-HAW-06/2001	15/9/20												
8	GA20-BH-HAW-06/2002	15/9/20												
9	GA20-BH-HAW-06/2003	15/9/20												
10	GA20-BH-HAW-06/2004	15/9/20												
	Add Rows		Total Counts											

pth	PID
-0.1	0.0
9-0.5	0.0
4-0.5	0.0
4-0.5	0.0
1-1.0	0.1
1-1.5	0.0
-0.1	0.0
4-0.5	0.0
9-1	0.0
-1.5	0.0

Method of Shipment: ☐ Courier (#) ☐ Hand Delivered ☐ Postal — Name — Signature — Date — Time

Laboratory Use Only									
Received By	GANIA TO	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	GTO	Date	18/9/20	Time	5:29pm	Temperature 20.4 ICE
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	TK, SHZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses: Where metals are requested, please specify "total" or "filtered". SUITE code must be used to attract SuITE pricing

Containers: Change container type & size if necessary

Required Turnaround Time (TAT): Default will be 5 days if not ticked

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day ♦ ☐ 1 day ♦
☐ 2 days ♦ ☐ 3 days ♦
☒ 5 days (Standard)
☐ Other( )

	Depth	PID	№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA Vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
	0-0.1	0.1	1	GA20-BH-HAW-01/2001	17/9/20												
	0-0.1	0.1	2	GA20-BH-HAW-01/~~2004~~ 2801	17/9/20												
	0-0.1	0.1	3	GA20-BH-HAW-01/2901	17/9/20												
	0.4-0.5	0.0	4	GA20-BH-HAW-01/2002	17/9/20												
	0.9-1.0	0.4	5	GA20-BH-HAW-01/2003	17/9/20												
	1.4-1.5	0.0	6	GA20-BH-HAW-01/2004	18/9/20												
	0-0.1	0.1	7	GA20-BH-HAW-02/2001	16/9/20												
	0.4-0.5	0.0	8	GA20-BH-HAW-02/2002	16/9/20												
	0.9-1.0	0.0	9	GA20-BH-HAW-02/2003	16/9/20												
	1.4-1.5	0.0	10	GA20-BH-HAW-02/2004	16/9/20												

Add Rows | Total Counts

Method of Shipment: ☐ Courier (#) ☐ Hand Delivered ☐ Postal | Name | Signature | Date | Time

Laboratory Use Only							
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature	
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №	

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ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Golder Associates Pty Ltd (Richmond)
Contact name:	Matthew Sheppard
Project name:	Bill St Hawthorn
Project ID:	20145767
Turnaround time:	5 Day
Date/Time received	Sep 21, 2020 11:35 PM
Eurofins reference	745405

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✓ Split sample sent to requested external lab.
- ✕ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Matthew Sheppard - MSheppard@golder.com.au.

Note: A copy of these results will also be delivered to the general Golder Associates Pty Ltd (Richmond) email address.

Global Leader - Results you can trust

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 745405
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 21, 2020 11:35 PM
Due: Sep 28, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Newcastle Laboratory								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GA20-BH-HAW-12/2001/0.0-0.1	Sep 11, 2020		Soil	M20-Se35691		X	X
2	GA20-BH-HAW-12/2002/0.4-0.5	Sep 11, 2020		Soil	M20-Se35692		X	X
3	GA20-BH-HAW-12/2802/0.4-0.5	Sep 11, 2020		Soil	M20-Se35693		X	X

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 745405
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 21, 2020 11:35 PM
Due: Sep 28, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
4	GA20-BH-HAW-12/2004/1.4-1.5	Sep 11, 2020		Soil	M20-Se35694		X	X
5	GA20-BH-HAW-06/2001/0.0-0.1	Sep 15, 2020		Soil	M20-Se35695		X	X
6	GA20-BH-HAW-02/2002/0.4-0.5	Sep 15, 2020		Soil	M20-Se35696		X	X
7	GA20-BH-HAW-06/2004/1.4-1.5	Sep 15, 2020		Soil	M20-Se35697		X	X
8	GA20-BH-	Sep 17, 2020		Soil	M20-Se35698		X	X

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 745405
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 21, 2020 11:35 PM
Due: Sep 28, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
8	GA20-BH-HAW-01/2001/0.0-0.1	Sep 17, 2020		Soil	M20-Se35698			
9	GA20-BH-HAW-01/2801/0.0-0.1	Sep 17, 2020		Soil	M20-Se35699		X	X
10	GA20-BH-HAW-01/2002/0.4-0.5	Sep 17, 2020		Soil	M20-Se35700		X	X
11	GA20-BH-HAW-01/2004/1.4-1.5	Sep 17, 2020		Soil	M20-Se35701		X	X
12	GA20-BH-	Sep 16, 2020		Soil	M20-Se35702		X	X

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
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VIC 3121

Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 745405
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 21, 2020 11:35 PM
Due: Sep 28, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
	HAW-02/2001/0.0-0.1							
13	GA20-BH-HAW-02/2002/0.4-0.5	Sep 16, 2020		Soil	M20-Se35703		X	X
14	GA20-BH-HAW-02/2004/1.4-1.5	Sep 16, 2020		Soil	M20-Se35704		X	X
15	GA20-BH-HAW-12/2003/0.9-1.0	Sep 11, 2020		Soil	M20-Se35705	X		
16	GA20-BH-HAW-	Sep 15, 2020		Soil	M20-Se35706	X		

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

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Phone : 0800 856 450
IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 745405
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 21, 2020 11:35 PM
Due: Sep 28, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
	HAW-06/2003/0.9-1.0							
17	GA20-BH-HAW-01/2003/0.9-1.0	Sep 17, 2020		Soil	M20-Se35707	X		
18	GA20-BH-HAW-02/2003/0.9-1.0	Sep 16, 2020		Soil	M20-Se35708	X		
Test Counts						4	14	14

eurofins | Environment Testing

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Golder Associates Pty Ltd (Richmond)
570-588 Swan Street
Richmond
VIC 3121

Attention: **Matthew Sheppard**

Report **745405-S**
Project name Bill St Hawthorn
Project ID 20145767
Received Date Sep 21, 2020

Client Sample ID			**GA20-BH-HAW-12/2001/0.0-0.1**	**GA20-BH-HAW-12/2002/0.4-0.5**	**GA20-BH-HAW-12/2802/0.4-0.5**	**GA20-BH-HAW-12/2004/1.4-1.5**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35691**	**M20-Se35692**	**M20-Se35693**	**M20-Se35694**
Date Sampled			**Sep 11, 2020**	**Sep 11, 2020**	**Sep 11, 2020**	**Sep 11, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	99	130	92	< 50
TRH C29-C36	50	mg/kg	94	100	73	< 50
TRH C10-C36 (Total)	50	mg/kg	193	230	165	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-12/2001/0.0-0.1	GA20-BH-HAW-12/2002/0.4-0.5	GA20-BH-HAW-12/2802/0.4-0.5	GA20-BH-HAW-12/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35691**	**M20-Se35692**	**M20-Se35693**	**M20-Se35694**
Date Sampled			**Sep 11, 2020**	**Sep 11, 2020**	**Sep 11, 2020**	**Sep 11, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	80	135	63	56
Toluene-d8 (surr.)	1	%	83	147	69	61
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	160	200	140	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	160	200	140	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.2	2.3	1.6	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.4	2.5	1.9	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.7	2.8	2.1	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-12/2001/0.0-0.1	GA20-BH-HAW-12/2002/0.4-0.5	GA20-BH-HAW-12/2802/0.4-0.5	GA20-BH-HAW-12/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35691**	**M20-Se35692**	**M20-Se35693**	**M20-Se35694**
Date Sampled			**Sep 11, 2020**	**Sep 11, 2020**	**Sep 11, 2020**	**Sep 11, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	0.6	1.1	0.8	< 0.5
Benzo(a)pyrene	0.5	mg/kg	0.9	1.8	1.2	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	0.6	1.0	1.1	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	0.6	1.0	0.9	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.8	1.3	1.2	< 0.5
Chrysene	0.5	mg/kg	0.6	1.3	0.8	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	1.2	2.1	2.0	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	0.6	1.1	0.8	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Pyrene	0.5	mg/kg	1.4	2.4	2.2	< 0.5
Total PAH*	0.5	mg/kg	7.3	13.1	11.7	< 0.5
2-Fluorobiphenyl (surr.)	1	%	88	79	83	94
p-Terphenyl-d14 (surr.)	1	%	90	83	97	102
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	104	92	111	121
Tetrachloro-m-xylene (surr.)	1	%	75	75	72	87

Client Sample ID			GA20-BH-HAW-12/2001/0.0-0.1	GA20-BH-HAW-12/2002/0.4-0.5	GA20-BH-HAW-12/2802/0.4-0.5	GA20-BH-HAW-12/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35691**	**M20-Se35692**	**M20-Se35693**	**M20-Se35694**
Date Sampled			**Sep 11, 2020**	**Sep 11, 2020**	**Sep 11, 2020**	**Sep 11, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	104	92	111	121
Tetrachloro-m-xylene (surr.)	1	%	75	75	72	87
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	79	68	78	89
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	270	< 100	< 100	190
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.4	7.8	8.5	7.8
% Moisture	1	%	10	13	11	14
Heavy Metals						
Arsenic	2	mg/kg	32	45	49	25
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.7	< 0.4
Chromium	5	mg/kg	41	83	70	51
Copper	5	mg/kg	75	22000	820	39
Lead	5	mg/kg	1400	960	1700	160
Mercury	0.1	mg/kg	0.3	1.7	1.3	0.5
Molybdenum	5	mg/kg	< 5	9.3	7.4	< 5
Nickel	5	mg/kg	38	72	65	27

Client Sample ID			GA20-BH-HAW-12/2001/0.0-0.1	GA20-BH-HAW-12/2002/0.4-0.5	GA20-BH-HAW-12/2802/0.4-0.5	GA20-BH-HAW-12/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35691**	**M20-Se35692**	**M20-Se35693**	**M20-Se35694**
Date Sampled			**Sep 11, 2020**	**Sep 11, 2020**	**Sep 11, 2020**	**Sep 11, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	2	mg/kg	< 2	4.8	< 2	< 2
Tin	10	mg/kg	390	730	820	150
Zinc	5	mg/kg	530	1900	1200	170

Client Sample ID			GA20-BH-HAW-06/2001/0.0-0.1	GA20-BH-HAW-02/2002/0.4-0.5	GA20-BH-HAW-06/2004/1.4-1.5	GA20-BH-HAW-01/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35695**	**M20-Se35696**	**M20-Se35697**	**M20-Se35698**
Date Sampled			**Sep 15, 2020**	**Sep 15, 2020**	**Sep 15, 2020**	**Sep 17, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	140	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	92	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	232	< 50	< 50	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-06/2001/0.0-0.1	GA20-BH-HAW-02/2002/0.4-0.5	GA20-BH-HAW-06/2004/1.4-1.5	GA20-BH-HAW-01/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35695**	**M20-Se35696**	**M20-Se35697**	**M20-Se35698**
Date Sampled			**Sep 15, 2020**	**Sep 15, 2020**	**Sep 15, 2020**	**Sep 17, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	82	63	99	125
Toluene-d8 (surr.)	1	%	81	60	91	112
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	180	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	180	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-06/2001/0.0-0.1	GA20-BH-HAW-02/2002/0.4-0.5	GA20-BH-HAW-06/2004/1.4-1.5	GA20-BH-HAW-01/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35695**	**M20-Se35696**	**M20-Se35697**	**M20-Se35698**
Date Sampled			**Sep 15, 2020**	**Sep 15, 2020**	**Sep 15, 2020**	**Sep 17, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	91	109	98	53
p-Terphenyl-d14 (surr.)	1	%	100	86	90	92
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	118	82	70	70
Tetrachloro-m-xylene (surr.)	1	%	77	99	98	52

Client Sample ID			GA20-BH-HAW-06/2001/0.0-0.1	GA20-BH-HAW-02/2002/0.4-0.5	GA20-BH-HAW-06/2004/1.4-1.5	GA20-BH-HAW-01/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35695**	**M20-Se35696**	**M20-Se35697**	**M20-Se35698**
Date Sampled			**Sep 15, 2020**	**Sep 15, 2020**	**Sep 15, 2020**	**Sep 17, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	118	82	70	70
Tetrachloro-m-xylene (surr.)	1	%	77	99	98	52
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	83	93	88	96
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	190	540	480	210
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.0	6.7	8.2	6.8
% Moisture	1	%	13	18	14	13
Heavy Metals						
Arsenic	2	mg/kg	13	12	14	6.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	19	48	34	31
Copper	5	mg/kg	21	9.1	18	7.3
Lead	5	mg/kg	40	20	25	18
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	18	26	27	8.3

Client Sample ID			GA20-BH-HAW-06/2001/0.0-0.1	GA20-BH-HAW-02/2002/0.4-0.5	GA20-BH-HAW-06/2004/1.4-1.5	GA20-BH-HAW-01/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35695**	**M20-Se35696**	**M20-Se35697**	**M20-Se35698**
Date Sampled			**Sep 15, 2020**	**Sep 15, 2020**	**Sep 15, 2020**	**Sep 17, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	78	18	26	21

Client Sample ID			GA20-BH-HAW-01/2801/0.0-0.1	GA20-BH-HAW-01/2002/0.4-0.5	GA20-BH-HAW-01/2004/1.4-1.5	GA20-BH-HAW-02/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35699**	**M20-Se35700**	**M20-Se35701**	**M20-Se35702**
Date Sampled			**Sep 17, 2020**	**Sep 17, 2020**	**Sep 17, 2020**	**Sep 16, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Volatile Organics						
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-01/2801/0.0-0.1	GA20-BH-HAW-01/2002/0.4-0.5	GA20-BH-HAW-01/2004/1.4-1.5	GA20-BH-HAW-02/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35699**	**M20-Se35700**	**M20-Se35701**	**M20-Se35702**
Date Sampled			**Sep 17, 2020**	**Sep 17, 2020**	**Sep 17, 2020**	**Sep 16, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	110	111	113	101
Toluene-d8 (surr.)	1	%	103	112	114	102
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-01/2801/0.0-0.1	GA20-BH-HAW-01/2002/0.4-0.5	GA20-BH-HAW-01/2004/1.4-1.5	GA20-BH-HAW-02/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35699**	**M20-Se35700**	**M20-Se35701**	**M20-Se35702**
Date Sampled			**Sep 17, 2020**	**Sep 17, 2020**	**Sep 17, 2020**	**Sep 16, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	50	58	61	57
p-Terphenyl-d14 (surr.)	1	%	91	56	57	60
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	76	58	66	68
Tetrachloro-m-xylene (surr.)	1	%	51	58	64	67

Client Sample ID			GA20-BH-HAW-01/2801/0.0-0.1	GA20-BH-HAW-01/2002/0.4-0.5	GA20-BH-HAW-01/2004/1.4-1.5	GA20-BH-HAW-02/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35699**	**M20-Se35700**	**M20-Se35701**	**M20-Se35702**
Date Sampled			**Sep 17, 2020**	**Sep 17, 2020**	**Sep 17, 2020**	**Sep 16, 2020**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	76	58	66	68
Tetrachloro-m-xylene (surr.)	1	%	51	58	64	67
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	88	58	50	57
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	400	290	280	< 100
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.7	6.1	6.4	6.9
% Moisture	1	%	15	12	10	9.8
Heavy Metals						
Arsenic	2	mg/kg	7.9	11	9.9	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	30	44	53	6.5
Copper	5	mg/kg	7.1	11	13	< 5
Lead	5	mg/kg	15	11	12	16
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	6.2	9.0	9.7	< 5

Client Sample ID			GA20-BH-HAW-01/2801/0.0-0.1	GA20-BH-HAW-01/2002/0.4-0.5	GA20-BH-HAW-01/2004/1.4-1.5	GA20-BH-HAW-02/2001/0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35699**	**M20-Se35700**	**M20-Se35701**	**M20-Se35702**
Date Sampled			**Sep 17, 2020**	**Sep 17, 2020**	**Sep 17, 2020**	**Sep 16, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	17	15	16	27

Client Sample ID			GA20-BH-HAW-02/2002/0.4-0.5	GA20-BH-HAW-02/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35703**	**M20-Se35704**
Date Sampled			**Sep 16, 2020**	**Sep 16, 2020**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50
Volatile Organics				
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5
Volatile Organics				
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-02/2002/0.4-0.5	GA20-BH-HAW-02/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35703**	**M20-Se35704**
Date Sampled			**Sep 16, 2020**	**Sep 16, 2020**
Test/Reference	LOR	Unit		
Volatile Organics				
Bromoform	0.5	mg/kg	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	86	66
Toluene-d8 (surr.)	1	%	92	64
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-02/2002/0.4-0.5	GA20-BH-HAW-02/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35703**	**M20-Se35704**
Date Sampled			**Sep 16, 2020**	**Sep 16, 2020**
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	52	53
p-Terphenyl-d14 (surr.)	1	%	97	50
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	75	71
Tetrachloro-m-xylene (surr.)	1	%	60	64

Client Sample ID			GA20-BH-HAW-02/2002/0.4-0.5	GA20-BH-HAW-02/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35703**	**M20-Se35704**
Date Sampled			**Sep 16, 2020**	**Sep 16, 2020**
Test/Reference	LOR	Unit		
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	75	71
Tetrachloro-m-xylene (surr.)	1	%	60	64
Phenols (Halogenated)				
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20
Phenol-d6 (surr.)	1	%	47	49
Chromium (hexavalent)	1	mg/kg	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5
Fluoride (Total)	100	mg/kg	< 100	210
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.1	7.3
% Moisture	1	%	9.7	15
Heavy Metals				
Arsenic	2	mg/kg	< 2	8.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	6.4	31
Copper	5	mg/kg	< 5	9.7
Lead	5	mg/kg	< 5	14
Mercury	0.1	mg/kg	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5
Nickel	5	mg/kg	< 5	11

Client Sample ID			GA20-BH-HAW-02/2002/0.4-0.5	GA20-BH-HAW-02/2004/1.4-1.5
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**M20-Se35703**	**M20-Se35704**
Date Sampled			**Sep 16, 2020**	**Sep 16, 2020**
Test/Reference	LOR	Unit		
Heavy Metals				
Selenium	2	mg/kg	< 2	< 2
Silver	2	mg/kg	< 2	< 2
Tin	10	mg/kg	< 10	< 10
Zinc	5	mg/kg	< 5	14

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 22, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Sep 22, 2020	7 Days
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Sep 22, 2020	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 22, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 22, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 22, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Sep 22, 2020	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Polychlorinated Biphenyls	Melbourne	Sep 22, 2020	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Phenols (Halogenated)	Melbourne	Sep 22, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Sep 22, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Sep 22, 2020	28 Days
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Sep 22, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride (Total)	Melbourne	Sep 23, 2020	28 Days
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Sep 22, 2020	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Sep 22, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Sep 21, 2020	14 Days
- Method: LTM-GEN-7080 Moisture			

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: Bill St Hawthorn
Project ID: 20145767

Order No.:
Report #: 745405
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 21, 2020 11:35 PM
Due: Sep 28, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Newcastle Laboratory								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GA20-BH-HAW-12/2001/0.0-0.1	Sep 11, 2020		Soil	M20-Se35691		X	X
2	GA20-BH-HAW-12/2002/0.4-0.5	Sep 11, 2020		Soil	M20-Se35692		X	X
3	GA20-BH-HAW-12/2802/0.4-0.5	Sep 11, 2020		Soil	M20-Se35693		X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
4	GA20-BH-HAW-12/2004/1.4-1.5	Sep 11, 2020		Soil	M20-Se35694		X	X
5	GA20-BH-HAW-06/2001/0.0-0.1	Sep 15, 2020		Soil	M20-Se35695		X	X
6	GA20-BH-HAW-02/2002/0.4-0.5	Sep 15, 2020		Soil	M20-Se35696		X	X
7	GA20-BH-HAW-06/2004/1.4-1.5	Sep 15, 2020		Soil	M20-Se35697		X	X
8	GA20-BH-	Sep 17, 2020		Soil	M20-Se35698		X	X

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
8	GA20-BH-HAW-01/2001/0.0-0.1	Sep 17, 2020		Soil	M20-Se35698			
9	GA20-BH-HAW-01/2801/0.0-0.1	Sep 17, 2020		Soil	M20-Se35699		X	X
10	GA20-BH-HAW-01/2002/0.4-0.5	Sep 17, 2020		Soil	M20-Se35700		X	X
11	GA20-BH-HAW-01/2004/1.4-1.5	Sep 17, 2020		Soil	M20-Se35701		X	X
12	GA20-BH-	Sep 16, 2020		Soil	M20-Se35702		X	X

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
	HAW-02/2001/0.0-0.1							
13	GA20-BH-HAW-02/2002/0.4-0.5	Sep 16, 2020		Soil	M20-Se35703		X	X
14	GA20-BH-HAW-02/2004/1.4-1.5	Sep 16, 2020		Soil	M20-Se35704		X	X
15	GA20-BH-HAW-12/2003/0.9-1.0	Sep 11, 2020		Soil	M20-Se35705	X		
16	GA20-BH-HAW-	Sep 15, 2020		Soil	M20-Se35706	X		

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Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
	HAW-06/2003/0.9-1.0							
17	GA20-BH-HAW-01/2003/0.9-1.0	Sep 17, 2020		Soil	M20-Se35707	X		
18	GA20-BH-HAW-02/2003/0.9-1.0	Sep 16, 2020		Soil	M20-Se35708	X		
Test Counts						4	14	14

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride (Total)	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	111			70-130	Pass	
TRH C10-C14	%	110			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	113			70-130	Pass	
1.1.1-Trichloroethane	%	121			70-130	Pass	
1.2-Dichlorobenzene	%	106			70-130	Pass	
1.2-Dichloroethane	%	105			70-130	Pass	
Benzene	%	121			70-130	Pass	
Ethylbenzene	%	107			70-130	Pass	
m&p-Xylenes	%	124			70-130	Pass	
Toluene	%	121			70-130	Pass	
Trichloroethene	%	117			70-130	Pass	
Xylenes - Total*	%	119			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	115			70-130	Pass	
TRH C6-C10	%	105			70-130	Pass	
TRH >C10-C16	%	110			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	77			70-130	Pass	
Acenaphthylene	%	76			70-130	Pass	
Anthracene	%	76			70-130	Pass	
Benz(a)anthracene	%	78			70-130	Pass	
Benzo(a)pyrene	%	74			70-130	Pass	
Benzo(b&j)fluoranthene	%	74			70-130	Pass	
Benzo(g.h.i)perylene	%	72			70-130	Pass	
Benzo(k)fluoranthene	%	73			70-130	Pass	
Chrysene	%	88			70-130	Pass	
Dibenz(a.h)anthracene	%	71			70-130	Pass	
Fluoranthene	%	76			70-130	Pass	
Fluorene	%	77			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	74			70-130	Pass	
Naphthalene	%	78			70-130	Pass	
Phenanthrene	%	70			70-130	Pass	
Pyrene	%	77			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	105			70-130	Pass	
4.4'-DDD	%	105			70-130	Pass	
4.4'-DDE	%	104			70-130	Pass	
4.4'-DDT	%	105			70-130	Pass	
a-BHC	%	98			70-130	Pass	
Aldrin	%	107			70-130	Pass	
b-BHC	%	109			70-130	Pass	
d-BHC	%	108			70-130	Pass	
Dieldrin	%	103			70-130	Pass	
Endosulfan I	%	122			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	116			70-130	Pass	
Endosulfan sulphate	%	103			70-130	Pass	
Endrin	%	108			70-130	Pass	
Endrin aldehyde	%	95			70-130	Pass	
Endrin ketone	%	106			70-130	Pass	
g-BHC (Lindane)	%	124			70-130	Pass	
Heptachlor	%	94			70-130	Pass	
Heptachlor epoxide	%	104			70-130	Pass	
Hexachlorobenzene	%	109			70-130	Pass	
Methoxychlor	%	106			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	115			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	73			30-130	Pass	
2.4-Dichlorophenol	%	85			30-130	Pass	
2.4.5-Trichlorophenol	%	83			30-130	Pass	
2.4.6-Trichlorophenol	%	78			30-130	Pass	
2.6-Dichlorophenol	%	98			30-130	Pass	
4-Chloro-3-methylphenol	%	87			30-130	Pass	
Pentachlorophenol	%	93			30-130	Pass	
Tetrachlorophenols - Total	%	88			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	50			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	84			30-130	Pass	
2-Methylphenol (o-Cresol)	%	84			30-130	Pass	
2-Nitrophenol	%	72			30-130	Pass	
2.4-Dimethylphenol	%	92			30-130	Pass	
2.4-Dinitrophenol	%	77			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	83			30-130	Pass	
4-Nitrophenol	%	94			30-130	Pass	
Dinoseb	%	87			30-130	Pass	
Phenol	%	77			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	101			70-130	Pass	
Cyanide (total)	%	102			70-130	Pass	
Fluoride (Total)	%	106			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	90			80-120	Pass	
Cadmium	%	95			80-120	Pass	
Chromium	%	103			80-120	Pass	
Copper	%	91			80-120	Pass	
Lead	%	101			80-120	Pass	
Mercury	%	105			80-120	Pass	
Molybdenum	%	94			80-120	Pass	
Nickel	%	88			80-120	Pass	
Selenium	%	93			80-120	Pass	
Silver	%	99			80-120	Pass	
Tin	%	95			80-120	Pass	
Zinc	%	88			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M20-Se36236	NCP	%	114			70-130	Pass	
TRH C10-C14	M20-Se35294	NCP	%	117			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	M20-Se34271	NCP	%	113			70-130	Pass	
1.1.1-Trichloroethane	M20-Se34271	NCP	%	108			70-130	Pass	
1.2-Dichlorobenzene	M20-Se34271	NCP	%	121			70-130	Pass	
1.2-Dichloroethane	M20-Se34271	NCP	%	122			70-130	Pass	
Benzene	M20-Se34271	NCP	%	113			70-130	Pass	
Ethylbenzene	M20-Se34271	NCP	%	115			70-130	Pass	
m&p-Xylenes	M20-Se34271	NCP	%	109			70-130	Pass	
o-Xylene	M20-Se34271	NCP	%	116			70-130	Pass	
Toluene	M20-Se34271	NCP	%	113			70-130	Pass	
Trichloroethene	M20-Se34271	NCP	%	128			70-130	Pass	
Xylenes - Total*	M20-Se34271	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-Se34271	NCP	%	110			70-130	Pass	
TRH C6-C10	M20-Se36236	NCP	%	111			70-130	Pass	
TRH >C10-C16	M20-Se35294	NCP	%	117			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M20-Se29731	NCP	%	116			70-130	Pass	
Acenaphthylene	M20-Se29731	NCP	%	111			70-130	Pass	
Anthracene	M20-Se29731	NCP	%	108			70-130	Pass	
Benz(a)anthracene	M20-Se29731	NCP	%	104			70-130	Pass	
Benzo(a)pyrene	M20-Se29731	NCP	%	117			70-130	Pass	
Benzo(b&j)fluoranthene	M20-Se29731	NCP	%	93			70-130	Pass	
Benzo(g.h.i)perylene	M20-Se29731	NCP	%	74			70-130	Pass	
Benzo(k)fluoranthene	M20-Se29731	NCP	%	121			70-130	Pass	
Chrysene	M20-Se29731	NCP	%	121			70-130	Pass	
Dibenz(a.h)anthracene	M20-Se29731	NCP	%	90			70-130	Pass	
Fluoranthene	M20-Se29731	NCP	%	111			70-130	Pass	
Fluorene	M20-Se29731	NCP	%	110			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M20-Se29731	NCP	%	86			70-130	Pass	
Naphthalene	M20-Se29731	NCP	%	117			70-130	Pass	
Phenanthrene	M20-Se29731	NCP	%	102			70-130	Pass	
Pyrene	M20-Se29731	NCP	%	113			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	B20-Se26370	NCP	%	96			70-130	Pass	
4.4'-DDD	B20-Se26370	NCP	%	128			70-130	Pass	
4.4'-DDE	B20-Se26370	NCP	%	88			70-130	Pass	
4.4'-DDT	B20-Se26370	NCP	%	99			70-130	Pass	
a-BHC	B20-Se26370	NCP	%	110			70-130	Pass	
Aldrin	B20-Se26370	NCP	%	86			70-130	Pass	
b-BHC	B20-Se26370	NCP	%	78			70-130	Pass	
d-BHC	B20-Se26370	NCP	%	90			70-130	Pass	
Dieldrin	B20-Se26370	NCP	%	115			70-130	Pass	
Endosulfan I	B20-Se26370	NCP	%	90			70-130	Pass	
Endosulfan II	B20-Se26370	NCP	%	123			70-130	Pass	
Endosulfan sulphate	B20-Se26370	NCP	%	120			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	B20-Se26370	NCP	%	119			70-130	Pass	
Endrin aldehyde	B20-Se26370	NCP	%	89			70-130	Pass	
Endrin ketone	B20-Se26370	NCP	%	129			70-130	Pass	
g-BHC (Lindane)	B20-Se26370	NCP	%	92			70-130	Pass	
Heptachlor	B20-Se26370	NCP	%	101			70-130	Pass	
Heptachlor epoxide	B20-Se26370	NCP	%	98			70-130	Pass	
Hexachlorobenzene	B20-Se26370	NCP	%	79			70-130	Pass	
Methoxychlor	B20-Se26370	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	B20-Se27691	NCP	%	85			70-130	Pass	
Aroclor-1260	B20-Se27691	NCP	%	113			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M20-Se29731	NCP	%	100			30-130	Pass	
2.4-Dichlorophenol	M20-Se29731	NCP	%	94			30-130	Pass	
2.4.5-Trichlorophenol	M20-Se29731	NCP	%	110			30-130	Pass	
2.4.6-Trichlorophenol	M20-Se29731	NCP	%	83			30-130	Pass	
2.6-Dichlorophenol	M20-Se29731	NCP	%	87			30-130	Pass	
4-Chloro-3-methylphenol	M20-Se29731	NCP	%	100			30-130	Pass	
Pentachlorophenol	M20-Se29731	NCP	%	57			30-130	Pass	
Tetrachlorophenols - Total	M20-Se29848	NCP	%	101			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M20-Se26089	NCP	%	85			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M20-Se29731	NCP	%	36			30-130	Pass	
2-Methylphenol (o-Cresol)	M20-Se29731	NCP	%	100			30-130	Pass	
2-Nitrophenol	M20-Se29731	NCP	%	96			30-130	Pass	
2.4-Dimethylphenol	M20-Se29731	NCP	%	102			30-130	Pass	
2.4-Dinitrophenol	M20-Se26089	NCP	%	42			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M20-Se29731	NCP	%	105			30-130	Pass	
4-Nitrophenol	M20-Se29731	NCP	%	77			30-130	Pass	
Dinoseb	M20-Se29731	NCP	%	56			30-130	Pass	
Phenol	M20-Se29731	NCP	%	99			30-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	M20-Se35697	CP	%	112			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Se35697	CP	%	107			75-125	Pass	
Cadmium	M20-Se35697	CP	%	98			75-125	Pass	
Chromium	M20-Se35697	CP	%	108			75-125	Pass	
Copper	M20-Se35697	CP	%	111			75-125	Pass	
Lead	M20-Se35697	CP	%	110			75-125	Pass	
Mercury	M20-Se35697	CP	%	104			75-125	Pass	
Molybdenum	M20-Se35697	CP	%	109			75-125	Pass	
Nickel	M20-Se35697	CP	%	104			75-125	Pass	
Selenium	M20-Se35697	CP	%	98			75-125	Pass	
Silver	M20-Se35697	CP	%	101			75-125	Pass	
Tin	M20-Se35697	CP	%	106			75-125	Pass	
Zinc	M20-Se35697	CP	%	105			75-125	Pass	
Spike - % Recovery									
				Result 1					
Fluoride (Total)	M20-Se35698	CP	%	94			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M20-Se35702	CP	%	84			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M20-Se35696	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M20-Se35696	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M20-Se35696	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M20-Se35696	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M20-Se35696	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M20-Se35696	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M20-Se35696	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M20-Se35696	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M20-Se35696	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M20-Se35696	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M20-Se35696	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M20-Se35696	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M20-Se35696	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M20-Se35696	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M20-Se35696	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M20-Se35696	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	M20-Se35696	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	M20-Se35696	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	M20-Se35696	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	M20-Se35696	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	M20-Se35696	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	M20-Se35696	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M20-Se35696	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M20-Se35696	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M20-Se35696	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	M20-Se35696	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	M20-Se35696	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M20-Se35696	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	M20-Se35696	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	M20-Se35696	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	M20-Se35696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M20-Se35696	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Cyanide (total)	M20-Se35696	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se35696	CP	mg/kg	12	8.9	29	30%	Pass	
Cadmium	M20-Se35696	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se35696	CP	mg/kg	48	39	22	30%	Pass	
Copper	M20-Se35696	CP	mg/kg	9.1	8.2	10	30%	Pass	
Lead	M20-Se35696	CP	mg/kg	20	17	16	30%	Pass	
Mercury	M20-Se35696	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se35696	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se35696	CP	mg/kg	26	22	20	30%	Pass	
Selenium	M20-Se35696	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se35696	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	M20-Se35696	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se35696	CP	mg/kg	18	13	32	30%	Fail	Q15
Duplicate									
				Result 1	Result 2	RPD			
Fluoride (Total)	M20-Se35697	CP	mg/kg	480	530	8.0	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	M20-Se35697	CP	pH Units	8.2	8.1	pass	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se35697	CP	mg/kg	14	13	4.0	30%	Pass	
Cadmium	M20-Se35697	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se35697	CP	mg/kg	34	33	4.0	30%	Pass	
Copper	M20-Se35697	CP	mg/kg	18	18	4.0	30%	Pass	
Lead	M20-Se35697	CP	mg/kg	25	24	4.0	30%	Pass	
Mercury	M20-Se35697	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se35697	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se35697	CP	mg/kg	27	26	4.0	30%	Pass	
Selenium	M20-Se35697	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se35697	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	M20-Se35697	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se35697	CP	mg/kg	26	26	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Se35698	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Hexachlorobutadiene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M20-Se35698	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
cis-1.2-Dichloroethene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M20-Se35698	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M20-Se35698	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
o-Xylene	M20-Se35698	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	M20-Se35698	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	M20-Se35698	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Se35698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M20-Se35698	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M20-Se35699	CP	%	15	17	10	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M20-Se35701	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Michael Morrison	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

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02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)	Project №	20145767	Project Manager	Matthew Sheppard
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121	Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
Contact Name	Matthew Sheppard			Facility Code	
Phone №	(03) 8862 3721				
Special Directions					
Purchase Order					
Quote ID №	200728GOL				

Sampler(s)	SZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.

Containers: Change container type & size if necessary

Required Turnaround Time (TAT): Default will be 5 days if not ticked

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	Asbestos	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	GA20-BH-HAW-03/2001/0.0-0.1	21/09/20	Soil	X											
2	GA20-BH-HAW-03/2002/0.4-0.5	21/09/20	Soil	X											
3	GA20-BH-HAW-03/2003/0.9-1.0	21/09/20	Soil												
4	GA20-BH-HAW-03/2004/1.4-1.5	21/09/20	Soil												
5	GA20-BH-HAW-10/2001/0.0-0.1	22/09/20	Soil	X											
6	GA20-BH-HAW-10/2002/0.4-0.5	22/09/20	Soil	X											
7	GA20-BH-HAW-10/2003/0.9-1.0	22/09/20	Soil												
8	GA20-BH-HAW-10/2004/1.4-1.5	22/09/20	Soil	X											
9															
10															
	Add Rows		Total Counts	5											

Method of Shipment	☑ Courier (#)	☐ Hand Delivered	☐ Postal	Name		Signature		Date	18/09/2020	Time	1:00:00 AM

Laboratory Use Only	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Temperature	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	746503

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request

#AU_CAU001_EnviroSampleVic

From: Sheppard, Matthew <MSheppard@golder.com.au>
Sent: Friday, 25 September 2020 9:55 AM
To: Michael Morrison
Cc: #AU_CAU001_EnviroSampleVic
Subject: RE: analysis required
Attachments: 20145767_Bills_COC5.xlsm

NOTE: This email chain appears to contain email from outside Golder

Mick,

Please find the analysis COC attached.

Matt

Matthew Sheppard ((BSc (Geo, EnvSc), BBus (Econ), Dip Ed))
Senior Environmental Scientist

GOLDER

Golder Associates Pty Ltd
Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121, Australia (PO Box 6079, Hawthorn West VIC 3122)
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Work Safe, Home Safe

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Please consider the **environment** before printing this email.

From: MichaelMorrison@eurofins.com <MichaelMorrison@eurofins.com>
Sent: 25 September 2020 09:14
To: Sheppard, Matthew <MSheppard@golder.com.au>
Cc: EnviroSampleVic@eurofins.com
Subject: analysis required

EXTERNAL EMAIL

Hi Matt
We received samples from Bill St yesterday.
Can you please advise of the analysis required?

Kind Regards,

Michael Morrison
Analytical Services Manager

Eurofins |
Environment Testing

746503

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

Sydney Laboratory: Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066, 02 9900 8400, EnviroSampleNSW@eurofins.com
Brisbane Laboratory: Unit 1 21 Smallwood Place Murarrie QLD 4172, 07 3902 4600, EnviroSampleQLD@eurofins.com
Perth Laboratory: Unit 2 91 Leach Highway Kewdale WA 6105, 08 9251 9600, EnviroSampleWA@eurofins.com
Melbourne Laboratory: 6 Monterey Road Dandenong South VIC 3175, 03 8564 5000, EnviroSampleVic@eurofins.com

Company	Golder Associates Pty Ltd (Richmond)
Address	Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121
Contact Name	Matthew Sheppard
Phone №	(03) 8862 3721
Special Directions	
Purchase Order	
Quote ID №	200728GOL

Project №	20145767	Project Manager	Matthew Sheppard
Project Name	Bill St, Hawthorn	EDD Format (ESdat, EQuIS etc)	ESDAT
		Facility Code	

Sampler(s)	TK, SHZ
Handed over by	
Email for Invoice	msheppard@golder.com.au
Email for Results	msheppard@golder.com.au

Analyses: Where metals are requested please specify "total" or "filtered". SUITE code must be used to attract SUITE pricing.

Containers: Change container type & size if necessary

Required Turnaround Time (TAT): Default will be 5 days if not ticked. *Surcharge will apply

- ☐ Overnight (reporting by 9am)*
- ☐ Same day* ☐ 1 day*
- ☐ 2 days* ☐ 3 days*
- ☒ 5 days (Standard)
- ☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	VIC EPA IWRG 621	PFAS (full Suite)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	GA20-BH-HAW-03/2001	21/9/20												
2	GA20-BH-HAW-03/2002	21/9/20												
3	GA20-BH-HAW-03/2003	21/9/20												
4	GA20-BH-HAW-03/2004	21/9/20												
5														
6	GA20-BH-HAW-10/2001	22/9/20												
7	GA20-BH-HAW-10/2002	22/9/20												
8	GA20-BH-HAW-10/2003	22/9/20												
9	GA20-BH-HAW-10/2004	22/9/20												
10														
	Add Rows		Total Counts											

Depth	PID
0-0.1	0.1
0.4-0.5	0.1
0.9-1	0.1
1.4-1.5	0.0
0-0.1	0.4
0.4-0.5	0.0
0.9-1	0.1
1.4-1.5	0.0

Final Temp:
Correction: 15.7 +0.5
Temp: 16.2°
Chiller:
Date/Time:

Method of Shipment: Courier (✓) ☐ Hand Delivered ☐ Postal | Name | Signature | Date | Time

Laboratory Use Only

Received By	Jake	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date 23/9	Time 5:29	Temperature 16.2°	
Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	Time	Report № 746503	

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request

eurofins | Environment Testing

ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

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Site # 1254 & 14271

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Golder Associates Pty Ltd (Richmond)
Contact name:	Matthew Sheppard
Project name:	BILL ST HAWTHORN
Project ID:	20145767
Turnaround time:	5 Day
Date/Time received	Sep 25, 2020 9:55 AM
Eurofins reference	746503

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 16.2 degrees Celsius.
- ✗ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✗ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Matthew Sheppard - MSheppard@golder.com.au.

Note: A copy of these results will also be delivered to the general Golder Associates Pty Ltd (Richmond) email address.

eurofins | Environment Testing

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IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 746503
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 25, 2020 9:55 AM
Due: Oct 2, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Mayfield Laboratory								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GA20-BH-HAW-03/2001/0.0-0.1	Sep 21, 2020		Soil	M20-Se43700		X	X
2	GA20-BH-HAW-03/2002/0.4-0.5	Sep 21, 2020		Soil	M20-Se43701		X	X
3	GA20-BH-HAW-10/2001/0.0-0.1	Sep 21, 2020		Soil	M20-Se43702		X	X

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

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IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 746503
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 25, 2020 9:55 AM
Due: Oct 2, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Mayfield Laboratory								
External Laboratory								
4	GA20-BH-HAW-10/2003/0.9-1.0	Sep 21, 2020		Soil	M20-Se43703		X	X
5	GA20-BH-HAW-10/2004/1.4-1.5	Sep 22, 2020		Soil	M20-Se43704		X	X
6	GA20-BH-HAW-03/2003/0.9-1.0	Sep 21, 2020		Soil	M20-Se43705	X		
7	GA20-BH-HAW-	Sep 21, 2020		Soil	M20-Se43706	X		

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 746503
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 25, 2020 9:55 AM
Due: Oct 2, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Mayfield Laboratory								
External Laboratory								
	03/2004/1.4-1.5							
8	GA20-BH-HAW-10/2002/0.4-0.5	Sep 21, 2020		Soil	M20-Se43707	X		
Test Counts						3	5	5

Golder Associates Pty Ltd (Richmond)
570-588 Swan Street
Richmond
VIC 3121

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Matthew Sheppard**

Report **746503-S**
Project name BILL ST HAWTHORN
Project ID 20145767
Received Date Sep 25, 2020

Client Sample ID			**GA20-BH-HAW-03/2001/0.0-0.1**	**GA20-BH-HAW-03/2002/0.4-0.5**	**GA20-BH-HAW-10/2001/0.0-0.1**	**GA20-BH-HAW-10/2003/0.9-1.0**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se43700**	**M20-Se43701**	**M20-Se43702**	**M20-Se43703**
Date Sampled			**Sep 21, 2020**	**Sep 21, 2020**	**Sep 21, 2020**	**Sep 21, 2020**
Test/Reference	LOR	Unit				
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5	< 5	< 5
Fluoride (Total)	100	mg/kg	190	320	460	150
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.5	7.7	6.7	8.2
% Moisture	1	%	14	20	13	13
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			GA20-BH-HAW-03/2001/0.0-0.1	GA20-BH-HAW-03/2002/0.4-0.5	GA20-BH-HAW-10/2001/0.0-0.1	GA20-BH-HAW-10/2003/0.9-1.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se43700**	**M20-Se43701**	**M20-Se43702**	**M20-Se43703**
Date Sampled			Sep 21, 2020	Sep 21, 2020	Sep 21, 2020	Sep 21, 2020
Test/Reference	LOR	Unit				
Volatile Organics						
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	90	92	79	80
Toluene-d8 (surr.)	1	%	80	83	85	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	160	730
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	180
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	160	910
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	72	530
TRH C29-C36	50	mg/kg	< 50	< 50	130	320
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	202	850

Client Sample ID			GA20-BH-HAW-03/2001/0.0-0.1	GA20-BH-HAW-03/2002/0.4-0.5	GA20-BH-HAW-10/2001/0.0-0.1	GA20-BH-HAW-10/2003/0.9-1.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se43700**	**M20-Se43701**	**M20-Se43702**	**M20-Se43703**
Date Sampled			**Sep 21, 2020**	**Sep 21, 2020**	**Sep 21, 2020**	**Sep 21, 2020**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	0.8	9.6
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	1.1	9.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.4	9.6
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.7
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	2.6
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	6.7
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	0.6	6.7
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	0.8	5.7
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	3.3
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	0.7	4.6
Chrysene	0.5	mg/kg	< 0.5	< 0.5	0.5	7.3
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.8
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	1.0	16
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	3.4
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	9.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	0.9	17
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	4.5	85.3
2-Fluorobiphenyl (surr.)	1	%	75	74	82	101
p-Terphenyl-d14 (surr.)	1	%	89	98	104	87
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GA20-BH-HAW-03/2001/0.0-0.1	GA20-BH-HAW-03/2002/0.4-0.5	GA20-BH-HAW-10/2001/0.0-0.1	GA20-BH-HAW-10/2003/0.9-1.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Se43700**	**M20-Se43701**	**M20-Se43702**	**M20-Se43703**
Date Sampled			**Sep 21, 2020**	**Sep 21, 2020**	**Sep 21, 2020**	**Sep 21, 2020**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Dibutylchlorendate (surr.)	1	%	120	123	113	82
Tetrachloro-m-xylene (surr.)	1	%	87	87	92	100
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	120	123	113	82
Tetrachloro-m-xylene (surr.)	1	%	87	87	92	100
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	63	56	70	77
Heavy Metals						
Arsenic	2	mg/kg	9.3	11	< 2	18
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	52	< 5	32
Copper	5	mg/kg	22	11	11	16
Lead	5	mg/kg	47	16	100	43
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	20	21	< 5	16
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	280	23	49	110

Client Sample ID			GA20-BH-HAW-10/2004/1.4-1.5
Sample Matrix			Soil
Eurofins Sample No.			M20-Se43704
Date Sampled			Sep 22, 2020
Test/Reference	LOR	Unit	
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride (Total)	100	mg/kg	190
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.5
% Moisture	1	%	11
Volatile Organics			
1.1-Dichloroethane	0.5	mg/kg	< 0.5
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5

Client Sample ID			GA20-BH-HAW-10/2004/1.4-1.5
Sample Matrix			Soil
Eurofins Sample No.			M20-Se43704
Date Sampled			Sep 22, 2020
Test/Reference	LOR	Unit	
Volatile Organics			
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	92
Toluene-d8 (surr.)	1	%	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	170
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	170
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	120
TRH C29-C36	50	mg/kg	90
TRH C10-C36 (Total)	50	mg/kg	210
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	2.4
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	2.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	2.9
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	1.1
Benzo(a)pyrene	0.5	mg/kg	1.8
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.8
Benzo(g.h.i)perylene	0.5	mg/kg	0.7
Benzo(k)fluoranthene	0.5	mg/kg	1.7
Chrysene	0.5	mg/kg	1.0
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			GA20-BH-HAW-10/2004/1.4-1.5
Sample Matrix			Soil
Eurofins Sample No.			M20-Se43704
Date Sampled			Sep 22, 2020
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluoranthene	0.5	mg/kg	2.7
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	0.9
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	1.1
Pyrene	0.5	mg/kg	2.7
Total PAH*	0.5	mg/kg	15.5
2-Fluorobiphenyl (surr.)	1	%	72
p-Terphenyl-d14 (surr.)	1	%	96
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	106
Tetrachloro-m-xylene (surr.)	1	%	91
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	106
Tetrachloro-m-xylene (surr.)	1	%	91

Client Sample ID			GA20-BH-HAW-10/2004/1.4-1.5
Sample Matrix			Soil
Eurofins Sample No.			M20-Se43704
Date Sampled			Sep 22, 2020
Test/Reference	LOR	Unit	
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	64
Heavy Metals			
Arsenic	2	mg/kg	4.1
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	28
Copper	5	mg/kg	8.0
Lead	5	mg/kg	71
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	14
Selenium	2	mg/kg	< 2
Silver	2	mg/kg	< 2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	47

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Hexachlorobutadiene	Melbourne	Sep 25, 2020	14 Days
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Chromium (hexavalent)	Melbourne	Sep 25, 2020	28 Days
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Sep 25, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride (Total)	Melbourne	Sep 26, 2020	28 Days
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Sep 25, 2020	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Volatile Organics	Melbourne	Sep 25, 2020	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 25, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 25, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Melbourne	Sep 25, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 25, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 25, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Sep 25, 2020	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Polychlorinated Biphenyls	Melbourne	Sep 25, 2020	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Phenols (Halogenated)	Melbourne	Sep 25, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Sep 25, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals IWRG 621 : Metals M12	Melbourne	Sep 25, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Sep 25, 2020	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins | Environment Testing

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Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261
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IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 746503
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Sep 25, 2020 9:55 AM
Due: Oct 2, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Mayfield Laboratory								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GA20-BH-HAW-03/2001/0.0-0.1	Sep 21, 2020		Soil	M20-Se43700		X	X
2	GA20-BH-HAW-03/2002/0.4-0.5	Sep 21, 2020		Soil	M20-Se43701		X	X
3	GA20-BH-HAW-10/2001/0.0-0.1	Sep 21, 2020		Soil	M20-Se43702		X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Mayfield Laboratory								
External Laboratory								
4	GA20-BH-HAW-10/2003/0.9-1.0	Sep 21, 2020		Soil	M20-Se43703		X	X
5	GA20-BH-HAW-10/2004/1.4-1.5	Sep 22, 2020		Soil	M20-Se43704		X	X
6	GA20-BH-HAW-03/2003/0.9-1.0	Sep 21, 2020		Soil	M20-Se43705	X		
7	GA20-BH-HAW-	Sep 21, 2020		Soil	M20-Se43706	X		

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Sample Detail						HOLD	Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
Mayfield Laboratory								
External Laboratory								
	03/2004/1.4-1.5							
8	GA20-BH-HAW-10/2002/0.4-0.5	Sep 21, 2020		Soil	M20-Se43707	X		
Test Counts						3	5	5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride (Total)	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	107			70-130	Pass	
Cyanide (total)	%	105			70-130	Pass	
Fluoride (Total)	%	108			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	85			70-130	Pass	
1.1.1-Trichloroethane	%	77			70-130	Pass	
1.2-Dichlorobenzene	%	86			70-130	Pass	
1.2-Dichloroethane	%	91			70-130	Pass	
Benzene	%	80			70-130	Pass	
Ethylbenzene	%	85			70-130	Pass	
m&p-Xylenes	%	85			70-130	Pass	
Toluene	%	84			70-130	Pass	
Trichloroethene	%	95			70-130	Pass	
Xylenes - Total*	%	82			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	75			70-130	Pass	
TRH C6-C10	%	90			70-130	Pass	
TRH >C10-C16	%	91			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	87			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	%	91			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	78			70-130	Pass	
Acenaphthylene	%	75			70-130	Pass	
Anthracene	%	80			70-130	Pass	
Benz(a)anthracene	%	80			70-130	Pass	
Benzo(a)pyrene	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	%	96			70-130	Pass	
Benzo(g.h.i)perylene	%	79			70-130	Pass	
Benzo(k)fluoranthene	%	79			70-130	Pass	
Chrysene	%	95			70-130	Pass	
Dibenz(a.h)anthracene	%	78			70-130	Pass	
Fluoranthene	%	80			70-130	Pass	
Fluorene	%	77			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	81			70-130	Pass	
Naphthalene	%	79			70-130	Pass	
Phenanthrene	%	72			70-130	Pass	
Pyrene	%	79			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	86			70-130	Pass	
4.4'-DDD	%	85			70-130	Pass	
4.4'-DDE	%	96			70-130	Pass	
4.4'-DDT	%	86			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
a-BHC	%	89			70-130	Pass	
Aldrin	%	93			70-130	Pass	
b-BHC	%	88			70-130	Pass	
d-BHC	%	90			70-130	Pass	
Dieldrin	%	88			70-130	Pass	
Endosulfan I	%	100			70-130	Pass	
Endosulfan II	%	87			70-130	Pass	
Endosulfan sulphate	%	84			70-130	Pass	
Endrin	%	99			70-130	Pass	
Endrin aldehyde	%	96			70-130	Pass	
Endrin ketone	%	86			70-130	Pass	
g-BHC (Lindane)	%	105			70-130	Pass	
Heptachlor	%	84			70-130	Pass	
Heptachlor epoxide	%	89			70-130	Pass	
Hexachlorobenzene	%	90			70-130	Pass	
Methoxychlor	%	118			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	89			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	74			30-130	Pass	
2.4-Dichlorophenol	%	85			30-130	Pass	
2.4.5-Trichlorophenol	%	80			30-130	Pass	
2.4.6-Trichlorophenol	%	79			30-130	Pass	
2.6-Dichlorophenol	%	89			30-130	Pass	
4-Chloro-3-methylphenol	%	89			30-130	Pass	
Pentachlorophenol	%	86			30-130	Pass	
Tetrachlorophenols - Total	%	92			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	70			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	84			30-130	Pass	
2-Methylphenol (o-Cresol)	%	85			30-130	Pass	
2-Nitrophenol	%	72			30-130	Pass	
2.4-Dimethylphenol	%	93			30-130	Pass	
2.4-Dinitrophenol	%	73			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	94			30-130	Pass	
4-Nitrophenol	%	93			30-130	Pass	
Dinoseb	%	90			30-130	Pass	
Phenol	%	79			30-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	100			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	117			80-120	Pass	
Copper	%	100			80-120	Pass	
Lead	%	111			80-120	Pass	
Mercury	%	106			80-120	Pass	
Molybdenum	%	104			80-120	Pass	
Nickel	%	99			80-120	Pass	
Selenium	%	94			80-120	Pass	
Silver	%	101			80-120	Pass	
Tin	%	103			80-120	Pass	
Zinc	%	96			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Fluoride (Total)	S20-Se41995	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M20-Se42537	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M20-Se42537	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M20-Se41699	NCP	%	82			70-130	Pass	
Acenaphthylene	M20-Se41699	NCP	%	83			70-130	Pass	
Anthracene	M20-Se41699	NCP	%	81			70-130	Pass	
Benz(a)anthracene	M20-Se41699	NCP	%	77			70-130	Pass	
Benzo(a)pyrene	M20-Se41699	NCP	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	M20-Se41699	NCP	%	84			70-130	Pass	
Benzo(g.h.i)perylene	M20-Se41699	NCP	%	78			70-130	Pass	
Benzo(k)fluoranthene	M20-Se41699	NCP	%	95			70-130	Pass	
Chrysene	M20-Se41699	NCP	%	86			70-130	Pass	
Dibenz(a.h)anthracene	M20-Se41699	NCP	%	110			70-130	Pass	
Fluoranthene	M20-Se41699	NCP	%	76			70-130	Pass	
Fluorene	M20-Se41699	NCP	%	83			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M20-Se41699	NCP	%	106			70-130	Pass	
Naphthalene	M20-Se41699	NCP	%	85			70-130	Pass	
Phenanthrene	M20-Se41699	NCP	%	73			70-130	Pass	
Pyrene	M20-Se41699	NCP	%	77			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M20-Se46765	NCP	%	109			70-130	Pass	
4.4'-DDD	M20-Se46765	NCP	%	110			70-130	Pass	
4.4'-DDE	M20-Se46765	NCP	%	78			70-130	Pass	
4.4'-DDT	M20-Se46765	NCP	%	74			70-130	Pass	
a-BHC	M20-Se46765	NCP	%	82			70-130	Pass	
Aldrin	M20-Se46765	NCP	%	93			70-130	Pass	
b-BHC	M20-Se46765	NCP	%	108			70-130	Pass	
d-BHC	M20-Se46765	NCP	%	75			70-130	Pass	
Dieldrin	M20-Se46765	NCP	%	99			70-130	Pass	
Endosulfan I	M20-Se46765	NCP	%	106			70-130	Pass	
Endosulfan II	M20-Se46765	NCP	%	98			70-130	Pass	
Endosulfan sulphate	M20-Se46765	NCP	%	93			70-130	Pass	
Endrin	M20-Se46765	NCP	%	82			70-130	Pass	
Endrin aldehyde	M20-Se46765	NCP	%	101			70-130	Pass	
Endrin ketone	M20-Se46765	NCP	%	98			70-130	Pass	
g-BHC (Lindane)	M20-Se46765	NCP	%	110			70-130	Pass	
Heptachlor	M20-Se46765	NCP	%	83			70-130	Pass	
Heptachlor epoxide	M20-Se46765	NCP	%	117			70-130	Pass	
Hexachlorobenzene	M20-Se46765	NCP	%	73			70-130	Pass	
Methoxychlor	M20-Se46765	NCP	%	77			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M20-Se41699	NCP	%	81			30-130	Pass	
2.4-Dichlorophenol	M20-Se41699	NCP	%	91			30-130	Pass	
2.4.5-Trichlorophenol	M20-Se41699	NCP	%	94			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4.6-Trichlorophenol	M20-Se41699	NCP	%	69			30-130	Pass	
2.6-Dichlorophenol	M20-Se41699	NCP	%	73			30-130	Pass	
4-Chloro-3-methylphenol	M20-Se41699	NCP	%	76			30-130	Pass	
Pentachlorophenol	M20-Se41699	NCP	%	31			30-130	Pass	
Tetrachlorophenols - Total	M20-Se41699	NCP	%	63			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Methyl-4.6-dinitrophenol	M20-Se45254	NCP	%	39			30-130	Pass	
2-Methylphenol (o-Cresol)	M20-Se41699	NCP	%	53			30-130	Pass	
2-Nitrophenol	M20-Se41699	NCP	%	78			30-130	Pass	
2.4-Dimethylphenol	M20-Se41699	NCP	%	102			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M20-Se41699	NCP	%	68			30-130	Pass	
4-Nitrophenol	M20-Se41699	NCP	%	75			30-130	Pass	
Dinoseb	M20-Se45254	NCP	%	58			30-130	Pass	
Phenol	M20-Se41699	NCP	%	79			30-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Se44344	NCP	%	101			75-125	Pass	
Cadmium	M20-Se44344	NCP	%	103			75-125	Pass	
Chromium	M20-Se44344	NCP	%	109			75-125	Pass	
Copper	M20-Se44344	NCP	%	109			75-125	Pass	
Lead	M20-Se44344	NCP	%	123			75-125	Pass	
Mercury	M20-Se44344	NCP	%	115			75-125	Pass	
Molybdenum	M20-Se44344	NCP	%	115			75-125	Pass	
Nickel	M20-Se44344	NCP	%	102			75-125	Pass	
Selenium	M20-Se44344	NCP	%	100			75-125	Pass	
Silver	M20-Se44344	NCP	%	104			75-125	Pass	
Tin	M20-Se44344	NCP	%	116			75-125	Pass	
Zinc	M20-Se44344	NCP	%	105			75-125	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	M20-Se34258	NCP	%	78			70-130	Pass	
Aroclor-1260	M20-Se34258	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M20-Se38053	NCP	%	38			30-130	Pass	
2.4-Dinitrophenol	M20-Se38053	NCP	%	53			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M20-Se43704	CP	%	90			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Hexachlorobutadiene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chromium (hexavalent)	P20-Se41090	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Cyanide (total)	M20-Se42935	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	M20-Se40457	NCP	pH Units	9.1	9.1	pass	30%	Pass	
% Moisture	M20-Se43205	NCP	%	7.7	7.2	7.0	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trichlorobenzene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M20-Se41930	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M20-Se41930	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M20-Se41930	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methylene Chloride	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
o-Xylene	M20-Se41930	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Styrene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	M20-Se41930	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
trans-1.2-Dichloroethene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total*	M20-Se41930	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Se41930	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M20-Se41930	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M20-Se42536	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M20-Se42536	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M20-Se42536	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M20-Se41930	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M20-Se42536	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M20-Se42536	NCP	mg/kg	< 50	55	26	30%	Pass	
TRH C29-C36	M20-Se42536	NCP	mg/kg	53	66	21	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M20-Se42884	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M20-Se42884	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1254	M20-Se43130	NCP	mg/kg	0.7	0.8	7.0	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	M20-Se42884	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	M20-Se42884	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	M20-Se42884	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	M20-Se42884	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	M20-Se42884	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M20-Se42884	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M20-Se42884	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M20-Se42884	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	M20-Se42884	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	M20-Se42884	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M20-Se42884	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	M20-Se42884	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	M20-Se42884	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	M20-Se42884	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Se44344	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	M20-Se44344	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M20-Se44344	NCP	mg/kg	17	17	2.0	30%	Pass	
Copper	M20-Se44344	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	M20-Se44344	NCP	mg/kg	6.2	6.2	1.0	30%	Pass	
Mercury	M20-Se44344	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M20-Se44344	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M20-Se44344	NCP	mg/kg	6.0	5.8	3.0	30%	Pass	
Selenium	M20-Se44344	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M20-Se44344	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	M20-Se44344	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M20-Se44344	NCP	mg/kg	9.7	9.6	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Toxaphene	M20-Se35696	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M20-Se40054	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M20-Se40054	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M20-Se40054	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M20-Se40054	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M20-Se40054	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M20-Se40054	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	M20-Se40054	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Fluoride (Total)	M20-Se43704	CP	mg/kg	190	200	3.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Michael Morrison	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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#AU_CAU001_EnviroSampleVic

From: Michael Morrison
Sent: Thursday, 1 October 2020 10:22 AM
To: #AU_CAU001_EnviroSampleVic
Subject: FW: ASLP analysis request

Hi Steve
Please book this 5 day as per below

Kind Regards,

Michael Morrison
Analytical Services Manager
Phone: 03 8564 5933
Mobile: 0499 201 025
Email : michaelmorrison@eurofins.com

From: Sheppard, Matthew <MSheppard@golder.com.au>
Sent: Thursday, 1 October 2020 10:21 AM
To: Michael Morrison <MichaelMorrison@eurofins.com>
Subject: ASLP analysis request

EXTERNAL EMAIL*

Mick,

Can you please organise an ASLP (pH 5) analysis for the samples as presented below.

Arsenic	Cadmium	Lead	Mercury	Zinc	Benzo(a)pyrene

Mollie Reeve 747772.

Location_Code	Field_ID	Sample_Depth_Range	Sampled_Date_Time	Lab_Report_Number						
HAW-TP02	HAW-TP02/1003/0.7-0.8	0.7-0.8	03/09/2020	742353	X		X			
HAW-TP03	HAW-TP03/1002/0.4-0.5	0.4-0.5	03/09/2020	742353	X		X			
HAW-TP08	HAW-TP08/1001/0.0-0.1	0-0.1	03/09/2020	742353	X	X	X	X	X	X
HAW-TP09	HAW-TP09/1003/0.5-0.6	0.5-0.6	03/09/2020	742353			X			X
HAW-TP10A	HAW-TP10A/1001/0.0-0.1	0-0.1	03/09/2020	742353	X		X			X

A standard TAT is fine.

Please contact me if you have any questions.

Yours sincerely

Matt Sheppard

SE09899- GT816
SE09901- GT816
SE09914- GT818
SE09918- GT818
SE09922- GT819.

Matthew Sheppard ((BSc (Geo, EnvSc), BBus (Econ), Dip Ed))
Senior Environmental Scientist

GOLDER

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Building 7, Botanicca Corporate Park, 570 – 588 Swan Street, Richmond, Victoria 3121, Australia (PO Box 6079, Hawthorn West VIC 3122)
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Mattie Reeve 747772

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Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Golder Associates Pty Ltd (Richmond)
Contact name:	Matthew Sheppard
Project name:	BILL ST HAWTHORN
Project ID:	20145767
Turnaround time:	5 Day
Date/Time received	Oct 1, 2020 10:22 AM
Eurofins reference	747772

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Matthew Sheppard - MSheppard@golder.com.au.

Note: A copy of these results will also be delivered to the general Golder Associates Pty Ltd (Richmond) email address.

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 747772
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Oct 1, 2020 10:22 AM
Due: Oct 8, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Arsenic	Benzo(a)pyrene	Cadmium	Lead	Mercury	Zinc	AUS Leaching Procedure
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	HAW-TP02/1003/0.7-0.8	Sep 03, 2020		AUS Leachate - pH 5.0	M20-Oc02164	X			X			X
2	HAW-TP03/1002/0.4-0.5	Sep 03, 2020		AUS Leachate - pH 5.0	M20-Oc02165	X			X			X
3	HAW-TP08/1001/0.0-0.1	Sep 03, 2020		AUS Leachate - pH 5.0	M20-Oc02166	X	X	X	X	X	X	X
4	HAW-TP09/1003/0.5-0.6	Sep 03, 2020		AUS Leachate - pH 5.0	M20-Oc02167		X		X			X

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Received: Oct 1, 2020 10:22 AM
Due: Oct 8, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Arsenic	Benzo(a)pyrene	Cadmium	Lead	Mercury	Zinc	AUS Leaching Procedure
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory												
External Laboratory												
5	HAW-TP10A/1001/0.0-0.1	Sep 03, 2020		AUS Leachate - pH 5.0	M20-Oc02168	X	X		X			X
Test Counts						4	3	1	5	1	1	5

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Golder Associates Pty Ltd (Richmond)
570-588 Swan Street
Richmond
VIC 3121

Attention: **Matthew Sheppard**

Report **747772-L**
Project name BILL ST HAWTHORN
Project ID 20145767
Received Date Oct 01, 2020

Client Sample ID			**HAW-TP02/1003/0.7-0.8**	**HAW-TP03/1002/0.4-0.5**	**HAW-TP08/1001/0.0-0.1**	**HAW-TP09/1003/0.5-0.6**
Sample Matrix			**AUS Leachate - pH 5.0**	**AUS Leachate - pH 5.0**	**AUS Leachate - pH 5.0**	**AUS Leachate - pH 5.0**
Eurofins Sample No.			**M20-Oc02164**	**M20-Oc02165**	**M20-Oc02166**	**M20-Oc02167**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Cadmium	0.01	mg/L	-	-	< 0.01	-
Lead	0.01	mg/L	0.01	0.01	0.08	< 0.01
Mercury	0.001	mg/L	-	-	< 0.001	-
Zinc	0.01	mg/L	-	-	1.0	-
AUS Leaching Procedure						
Leachate Fluid[C01]		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	N/A	N/A	N/A	N/A
pH (Leachate fluid)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (off)	0.1	pH Units	5.0	5.2	5.4	5.0
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001	< 0.001

Client Sample ID			**HAW-TP10A/1001/0.0-0.1**
Sample Matrix			**AUS Leachate - pH 5.0**
Eurofins Sample No.			**M20-Oc02168**
Date Sampled			**Sep 03, 2020**
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	0.01	mg/L	0.01
Lead	0.01	mg/L	0.04
AUS Leaching Procedure			
Leachate Fluid[C01]		comment	1.0
pH (initial)	0.1	pH Units	N/A
pH (Leachate fluid)	0.1	pH Units	5.0
pH (off)	0.1	pH Units	5.4
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.001	mg/L	< 0.001

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Melbourne	Oct 02, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
AUS Leaching Procedure			
pH (initial)	Melbourne	Oct 02, 2020	0 Days
- Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes			
pH (Leachate fluid)	Melbourne	Oct 02, 2020	0 Days
- Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes			
pH (off)	Melbourne	Oct 02, 2020	0 Days
- Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 02, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			

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Eurofins Analytical Services Manager : Michael Morrison

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2	HAW-TP03/1002/0.4-0.5	Sep 03, 2020		AUS Leachate - pH 5.0	M20-Oc02165	X			X			X
3	HAW-TP08/1001/0.0-0.1	Sep 03, 2020		AUS Leachate - pH 5.0	M20-Oc02166	X	X	X	X	X	X	X
4	HAW-TP09/1003/0.5-0.6	Sep 03, 2020		AUS Leachate - pH 5.0	M20-Oc02167		X		X			X

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IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 747772
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Oct 1, 2020 10:22 AM
Due: Oct 8, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Arsenic	Benzo(a)pyrene	Cadmium	Lead	Mercury	Zinc	AUS Leaching Procedure
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory												
External Laboratory												
5	HAW-TP10A/1001/0.0-0.1	Sep 03, 2020		AUS Leachate - pH 5.0	M20-Oc02168	X	X		X			X
Test Counts						4	3	1	5	1	1	5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Arsenic			mg/L	< 0.01			0.01	Pass	
Cadmium			mg/L	< 0.01			0.01	Pass	
Lead			mg/L	< 0.01			0.01	Pass	
Mercury			mg/L	< 0.001			0.001	Pass	
Zinc			mg/L	< 0.01			0.01	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Oc02164	CP	%	81			75-125	Pass	
Cadmium	M20-Oc02164	CP	%	84			75-125	Pass	
Lead	M20-Oc02164	CP	%	80			75-125	Pass	
Mercury	M20-Oc02164	CP	%	77			75-125	Pass	
Zinc	M20-Oc02164	CP	%	79			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	M20-Oc02843	NCP	%	81			75-125	Pass	
Mercury	M20-Oc02843	NCP	%	80			75-125	Pass	
Zinc	M20-Oc02843	NCP	%	78			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Oc02164	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium	M20-Oc02164	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Lead	M20-Oc02164	CP	mg/L	0.01	0.02	11	30%	Pass	
Mercury	M20-Oc02164	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M20-Oc02164	CP	mg/L	0.12	0.13	9.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Cadmium	M20-Oc02843	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Mercury	M20-Oc02843	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M20-Oc02843	NCP	mg/L	0.18	0.17	6.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other

Authorised By

Michael Morrison	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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GOLDER

CHAIN OF CUSTODY

No. 1

GOLDER ASSOCIATES PTY LTD
Building 7, Botanicca Corporate Park,
570 – 588 Swan Street, Richmond, Victoria 3121
Tel: (03) 8862 3500
Fax: (03) 8862 3501

Golder Job Number: 20145767
Job Location: Hawthorn
Laboratory Issued To: Eurofins
Order No.: –
Sampled By (Golder): Toby Richards
Golder Job Contact: Matt Sheppard
Golder Contact Email: MSheppard@golder.com

# OBSERVATIONS	SAMPLE DATE	SAMPLE NUMBER TAAXXX/MQNN	SAMPLE TYPE	SAMPLE DEPTH (m)	No. CONTAINERS	B7 (TRH, BTEXN, PAH, 8 metals)	SVV (VOC, SVOC)	pH	Sulphate	Nitrate	Hold
	1/10/2020	GA20-BH12/S0011020	water	–	7	X	X	X	X	X	
	1/10/2020	GA20-BH12/SS011020	water	–	5						X
	1/10/2020	GA20-BH10/S0011020	water	–	7	X	X	X	X	X	
	1/10/2020	GA20-BH10/S8011020	water	–	7	X	X	X	X	X	
	1/10/2020	GA20-BH09/S0011020	water	–	7	X	X	X	X	X	
	1/10/2020	GA20-BH05/S0011020	water	–	7	X	X	X	X	X	
	1/10/2020	GA20-BH03/S0011020	water	–	7	X	X	X	X	X	

Date/Time:
Chilled: Yes / No
Temp: 4.9 / 2.1 / 2.8
Correction:
Final Temp:

TURN AROUND TIME REQUIRED

☐ 1 Working Day ☐ 2 Working Days ☐ 3 Working Days ☐ 4 Working Days ☒ 5 Working Days (standard) ☐ Other

SAMPLE RECEIPT 1

Relinquished by: Toby Richards JCR Date: 2/10/2020
Organisation: Golder Time: 8:30
Recieved by: Ganga To Eurofins Date: 2/10/20
Organisation: Time: 5.29pm

SAMPLE RECEIPT 2

Relinquished by: Date:
Organisation: Time:
Received by: Date:
Organisation: Time:

DELIVERED BY: COURIER/LAB ☒ GOLDER ☐
RECEIVED BY: FAX ☐ HAND ☐

SAMPLE STATUS: ☐ Security Sealed ☐ Chilled ☐ Frozen ☐ Ambient

RECEIVING LABORATORY TO CONFIRM RECEIPT OF ANALYTICAL SCHEDULE

 # Observations to Assist Analysis and OH&S
C - Expected to be Highly Contaminated
N - NAPL Sample
HS - Expected High Salinity
HOC - Expected High Total Organic Carbon
S - Sheen
O - Odourous

Original (white) - Laboratory
Duplicate (yellow) - Project File
Triplicate (pink) - COC Book

748160
Jake

Checked By: Date:

Forms F012-b RL8 Aug08

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Sample Receipt Advice

Company name:	Golder Associates Pty Ltd (Richmond)
Contact name:	Matthew Sheppard
Project name:	HAWTHORN
Project ID:	20145767
Turnaround time:	5 Day
Date/Time received	Oct 2, 2020 5:29 PM
Eurofins reference	748160

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 2.8 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- **N/A** Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Matthew Sheppard - MSheppard@golder.com.au.

Note: A copy of these results will also be delivered to the general Golder Associates Pty Ltd (Richmond) email address.

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: HAWTHORN
Project ID: 20145767

Order No.:
Report #: 748160
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Oct 2, 2020 5:29 PM
Due: Oct 9, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Nitrate (as N)	pH (at 25 °C)	Sulphate (as SO4)	Eurofins Suite B7 (filtered metals)	Eurofins Suite SVV: SVOC/VOC
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
Mayfield Laboratory											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	GA20-BH12/50011020	Oct 01, 2020		Water	M20-Oc05574		X	X	X	X	X
2	GA20-BH12/55011020	Oct 01, 2020		Water	M20-Oc05575	X					
3	GA20-BH10/50011020	Oct 01, 2020		Water	M20-Oc05576		X	X	X	X	X
4	GA20-BH10/58011020	Oct 01, 2020		Water	M20-Oc05577		X	X	X	X	X

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: HAWTHORN
Project ID: 20145767

Order No.:
Report #: 748160
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Oct 2, 2020 5:29 PM
Due: Oct 9, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Nitrate (as N)	pH (at 25 °C)	Sulphate (as SO4)	Eurofins Suite B7 (filtered metals)	Eurofins Suite SVV: SVOC/VOC
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
Mayfield Laboratory											
External Laboratory											
5	GA20-BH09/50011020	Oct 01, 2020		Water	M20-Oc05578		X	X	X	X	X
6	GA20-BH05/50011020	Oct 01, 2020		Water	M20-Oc05579		X	X	X	X	X
7	GA20-BH03/50011020	Oct 01, 2020		Water	M20-Oc05580		X	X	X	X	X
Test Counts						1	6	6	6	6	6

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Golder Associates Pty Ltd (Richmond)
570-588 Swan Street
Richmond
VIC 3121

Attention: **Matthew Sheppard**

Report **748160-W**
Project name HAWTHORN
Project ID 20145767
Received Date Oct 02, 2020

Client Sample ID			**GA20-BH12/50011020**	**GA20-BH10/50011020**	**GA20-BH10/58011020**	**GA20-BH09/50011020**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Oc05574**	**M20-Oc05576**	**M20-Oc05577**	**M20-Oc05578**
Date Sampled			**Oct 01, 2020**	**Oct 01, 2020**	**Oct 01, 2020**	**Oct 01, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	112	113	112	109
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Butanone (MEK)	0.001	mg/L	0.001	< 0.001	< 0.001	< 0.001
2-Propanone (Acetone)	0.001	mg/L	0.002	0.001	0.001	0.002
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			GA20-BH12/50011020	GA20-BH10/50011020	GA20-BH10/58011020	GA20-BH09/50011020
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Oc05574**	**M20-Oc05576**	**M20-Oc05577**	**M20-Oc05578**
Date Sampled			**Oct 01, 2020**	**Oct 01, 2020**	**Oct 01, 2020**	**Oct 01, 2020**
Test/Reference	LOR	Unit				
Volatile Organics						
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroform	0.005	mg/L	< 0.005	0.009	0.009	< 0.005
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methylene Chloride	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total MAH*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	0.009	0.009	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	0.009	0.009	< 0.005
4-Bromofluorobenzene (surr.)	1	%	112	113	112	109
Toluene-d8 (surr.)	1	%	112	110	113	110
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GA20-BH12/50011020	GA20-BH10/50011020	GA20-BH10/58011020	GA20-BH09/50011020
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M20-Oc05574	M20-Oc05576	M20-Oc05577	M20-Oc05578
Date Sampled			Oct 01, 2020	Oct 01, 2020	Oct 01, 2020	Oct 01, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	54	97	66	72
p-Terphenyl-d14 (surr.)	1	%	51	54	73	67
Semivolatile Organics						
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Methylnaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Nitroaniline	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2-Picoline	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2.4-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003

Client Sample ID			GA20-BH12/50011020	GA20-BH10/50011020	GA20-BH10/58011020	GA20-BH09/50011020
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Oc05574**	**M20-Oc05576**	**M20-Oc05577**	**M20-Oc05578**
Date Sampled			**Oct 01, 2020**	**Oct 01, 2020**	**Oct 01, 2020**	**Oct 01, 2020**
Test/Reference	LOR	Unit				
Semivolatile Organics						
2.6-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
3-Methylcholanthrene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
4.4'-DDD	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4.4'-DDE	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4.4'-DDT	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
a-BHC	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acetophenone	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aniline	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
b-BHC	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
d-BHC	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.j)acridine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dieldrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Diphenylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Endosulfan I	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Endosulfan II	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Endosulfan sulphate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Endrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			GA20-BH12/50011020	GA20-BH10/50011020	GA20-BH10/58011020	GA20-BH09/50011020
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M20-Oc05574**	**M20-Oc05576**	**M20-Oc05577**	**M20-Oc05578**
Date Sampled			**Oct 01, 2020**	**Oct 01, 2020**	**Oct 01, 2020**	**Oct 01, 2020**
Test/Reference	LOR	Unit				
Semivolatile Organics						
Endrin ketone	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
g-BHC (Lindane)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Heptachlor	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Methoxychlor	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
N-Nitrosopiperidine	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Nitrobenzene	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Pentachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Pronamide	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trifluralin	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Phenol-d6 (surr.)	1	%	26	29	37	27
Nitrobenzene-d5 (surr.)	1	%	53	58	50	97
2-Fluorobiphenyl (surr.)	1	%	54	97	66	72
2.4.6-Tribromophenol (surr.)	1	%	41	41	32	26
Nitrate (as N)	0.02	mg/L	< 0.02	0.11	0.11	0.14
pH (at 25 °C)	0.1	pH Units	6.9	8.0	7.9	7.7
Sulphate (as SO4)	5	mg/L	270	110	110	260
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	0.001	0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.095	0.17	0.012	0.068
Lead (filtered)	0.001	mg/L	0.002	0.006	0.002	0.003
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.090	0.077	0.048	0.080
Zinc (filtered)	0.005	mg/L	0.10	0.32	0.065	0.23

Client Sample ID			GA20-BH05/50011020	GA20-BH03/50011020
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**M20-Oc05579**	**M20-Oc05580**
Date Sampled			**Oct 01, 2020**	**Oct 01, 2020**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1
BTEX				
Benzene	0.001	mg/L	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	111	109
Volatile Organics				
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001
2-Butanone (MEK)	0.001	mg/L	0.013	< 0.001
2-Propanone (Acetone)	0.001	mg/L	0.002	0.002
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001
Allyl chloride	0.001	mg/L	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001
Bromomethane	0.001	mg/L	< 0.001	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001
Chloroethane	0.001	mg/L	< 0.001	< 0.001
Chloroform	0.005	mg/L	0.006	0.009
Chloromethane	0.001	mg/L	< 0.001	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001

Client Sample ID			GA20-BH05/50011020	GA20-BH03/50011020
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**M20-Oc05579**	**M20-Oc05580**
Date Sampled			**Oct 01, 2020**	**Oct 01, 2020**
Test/Reference	LOR	Unit		
Volatile Organics				
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001
o-Xylene	0.001	mg/L	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003
Total MAH*	0.003	mg/L	< 0.003	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	0.006	0.009
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	0.006	0.009
4-Bromofluorobenzene (surr.)	1	%	111	109
Toluene-d8 (surr.)	1	%	113	112
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.001	mg/L	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001

Client Sample ID			GA20-BH05/50011020	GA20-BH03/50011020
Sample Matrix			Water	Water
Eurofins Sample No.			M20-Oc05579	M20-Oc05580
Date Sampled			Oct 01, 2020	Oct 01, 2020
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Phenanthrene	0.001	mg/L	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	54	94
p-Terphenyl-d14 (surr.)	1	%	97	54
Semivolatile Organics				
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.005	< 0.005
1.2-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005
2-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003
2-Methylnaphthalene	0.005	mg/L	< 0.005	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003
2-Naphthylamine	0.005	mg/L	< 0.005	< 0.005
2-Nitroaniline	0.005	mg/L	< 0.005	< 0.005
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01
2-Picoline	0.005	mg/L	< 0.005	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01	< 0.01
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03
2.4-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003
2.6-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006
3-Methylcholanthrene	0.005	mg/L	< 0.005	< 0.005
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.005	< 0.005
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03
4.4'-DDD	0.005	mg/L	< 0.005	< 0.005
4.4'-DDE	0.005	mg/L	< 0.005	< 0.005
4.4'-DDT	0.005	mg/L	< 0.005	< 0.005
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005	< 0.005
a-BHC	0.005	mg/L	< 0.005	< 0.005

Client Sample ID			GA20-BH05/50011020	GA20-BH03/50011020
Sample Matrix			Water	Water
Eurofins Sample No.			M20-Oc05579	M20-Oc05580
Date Sampled			Oct 01, 2020	Oct 01, 2020
Test/Reference	LOR	Unit		
Semivolatile Organics				
Acenaphthene	0.001	mg/L	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001
Acetophenone	0.005	mg/L	< 0.005	< 0.005
Aldrin	0.005	mg/L	< 0.005	< 0.005
Aniline	0.005	mg/L	< 0.005	< 0.005
Anthracene	0.001	mg/L	< 0.001	< 0.001
b-BHC	0.005	mg/L	< 0.005	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005	< 0.005
Chrysene	0.001	mg/L	< 0.001	< 0.001
d-BHC	0.005	mg/L	< 0.005	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005	< 0.005
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001
Dibenz(a.j)acridine	0.005	mg/L	< 0.005	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005	< 0.005
Dieldrin	0.005	mg/L	< 0.005	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005	< 0.005
Diphenylamine	0.005	mg/L	< 0.005	< 0.005
Endosulfan I	0.005	mg/L	< 0.005	< 0.005
Endosulfan II	0.005	mg/L	< 0.005	< 0.005
Endosulfan sulphate	0.005	mg/L	< 0.005	< 0.005
Endrin	0.005	mg/L	< 0.005	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005	< 0.005
Endrin ketone	0.005	mg/L	< 0.005	< 0.005
Fluoranthene	0.001	mg/L	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001
g-BHC (Lindane)	0.005	mg/L	< 0.005	< 0.005
Heptachlor	0.005	mg/L	< 0.005	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001
Methoxychlor	0.005	mg/L	< 0.005	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005	< 0.005

Client Sample ID			GA20-BH05/50011020	GA20-BH03/50011020
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**M20-Oc05579**	**M20-Oc05580**
Date Sampled			**Oct 01, 2020**	**Oct 01, 2020**
Test/Reference	LOR	Unit		
Semivolatile Organics				
N-Nitrosopiperidine	0.005	mg/L	< 0.005	< 0.005
Naphthalene	0.001	mg/L	< 0.001	< 0.001
Nitrobenzene	0.05	mg/L	< 0.05	< 0.05
Pentachlorobenzene	0.005	mg/L	< 0.005	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005	< 0.005
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01
Phenanthrene	0.001	mg/L	< 0.001	< 0.001
Phenol	0.003	mg/L	< 0.003	< 0.003
Pronamide	0.005	mg/L	< 0.005	< 0.005
Pyrene	0.001	mg/L	< 0.001	< 0.001
Trifluralin	0.005	mg/L	< 0.005	< 0.005
Phenol-d6 (surr.)	1	%	28	46
Nitrobenzene-d5 (surr.)	1	%	64	61
2-Fluorobiphenyl (surr.)	1	%	54	94
2.4.6-Tribromophenol (surr.)	1	%	39	80
Nitrate (as N)	0.02	mg/L	0.65	9.4
pH (at 25 °C)	0.1	pH Units	7.6	7.7
Sulphate (as SO4)	5	mg/L	210	250
Heavy Metals				
Arsenic (filtered)	0.001	mg/L	< 0.001	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	0.022
Copper (filtered)	0.001	mg/L	0.045	0.12
Lead (filtered)	0.001	mg/L	0.002	0.002
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.15	0.14
Zinc (filtered)	0.005	mg/L	0.27	0.48

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B7 (filtered metals)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 05, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Oct 05, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 05, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 05, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 05, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8 filtered	Melbourne	Oct 05, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Volatile Organics	Melbourne	Oct 05, 2020	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Semivolatile Organics	Melbourne	Oct 05, 2020	7 Days
- Method: LTM-ORG-2190 SVOC in Water & Soil by GC-MS			
Nitrate (as N)	Melbourne	Oct 05, 2020	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
pH (at 25 °C)	Melbourne	Oct 05, 2020	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Sulphate (as SO4)	Melbourne	Oct 05, 2020	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: HAWTHORN
Project ID: 20145767

Order No.:
Report #: 748160
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Oct 2, 2020 5:29 PM
Due: Oct 9, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Nitrate (as N)	pH (at 25 °C)	Sulphate (as SO4)	Eurofins Suite B7 (filtered metals)	Eurofins Suite SVV: SVOC/VOC
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
Mayfield Laboratory											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	GA20-BH12/50011020	Oct 01, 2020		Water	M20-Oc05574		X	X	X	X	X
2	GA20-BH12/55011020	Oct 01, 2020		Water	M20-Oc05575	X					
3	GA20-BH10/50011020	Oct 01, 2020		Water	M20-Oc05576		X	X	X	X	X
4	GA20-BH10/58011020	Oct 01, 2020		Water	M20-Oc05577		X	X	X	X	X

eurofins | Environment Testing

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IANZ # 1290

Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: HAWTHORN
Project ID: 20145767

Order No.:
Report #: 748160
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Oct 2, 2020 5:29 PM
Due: Oct 9, 2020
Priority: 5 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						HOLD	Nitrate (as N)	pH (at 25 °C)	Sulphate (as SO4)	Eurofins Suite B7 (filtered metals)	Eurofins Suite SVV: SVOC/VOC
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
Mayfield Laboratory											
External Laboratory											
5	GA20-BH09/50011020	Oct 01, 2020		Water	M20-Oc05578		X	X	X	X	X
6	GA20-BH05/50011020	Oct 01, 2020		Water	M20-Oc05579		X	X	X	X	X
7	GA20-BH03/50011020	Oct 01, 2020		Water	M20-Oc05580		X	X	X	X	X
Test Counts						1	6	6	6	6	6

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
2-Propanone (Acetone)	mg/L	< 0.001			0.001	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1.2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2.4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
4.4'-DDD	mg/L	< 0.005			0.005	Pass	
4.4'-DDE	mg/L	< 0.005			0.005	Pass	
4.4'-DDT	mg/L	< 0.005			0.005	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-BHC	mg/L	< 0.005			0.005	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
b-BHC	mg/L	< 0.005			0.005	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
d-BHC	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a.j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
g-BHC (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Nitrobenzene	mg/L	< 0.05			0.05	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	116			70-130	Pass	
TRH C10-C14	%	78			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	123			70-130	Pass	
Toluene	%	121			70-130	Pass	
Ethylbenzene	%	118			70-130	Pass	
m&p-Xylenes	%	112			70-130	Pass	
Xylenes - Total*	%	114			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	120			70-130	Pass	
1.1.1-Trichloroethane	%	119			70-130	Pass	
1.2-Dichlorobenzene	%	95			70-130	Pass	
1.2-Dichloroethane	%	118			70-130	Pass	
Trichloroethene	%	114			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	84			70-130	Pass	
TRH C6-C10	%	125			70-130	Pass	
TRH >C10-C16	%	85			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	90			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthylene			%	81			70-130	Pass	
Anthracene			%	87			70-130	Pass	
Benz(a)anthracene			%	96			70-130	Pass	
Benzo(a)pyrene			%	110			70-130	Pass	
Benzo(b&j)fluoranthene			%	100			70-130	Pass	
Benzo(g.h.i)perylene			%	113			70-130	Pass	
Benzo(k)fluoranthene			%	87			70-130	Pass	
Chrysene			%	127			70-130	Pass	
Dibenz(a.h)anthracene			%	110			70-130	Pass	
Fluoranthene			%	100			70-130	Pass	
Fluorene			%	93			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	107			70-130	Pass	
Naphthalene			%	85			70-130	Pass	
Phenanthrene			%	93			70-130	Pass	
Pyrene			%	98			70-130	Pass	
LCS - % Recovery									
Semivolatile Organics									
2-Methyl-4.6-dinitrophenol			%	82			30-130	Pass	
2-Chlorophenol			%	86			30-130	Pass	
2-Methylphenol (o-Cresol)			%	79			30-130	Pass	
2-Nitrophenol			%	78			30-130	Pass	
2.4-Dichlorophenol			%	77			30-130	Pass	
2.4-Dimethylphenol			%	44			30-130	Pass	
2.4-Dinitrophenol			%	61			30-130	Pass	
2.4.5-Trichlorophenol			%	71			30-130	Pass	
2.4.6-Trichlorophenol			%	69			30-130	Pass	
2.6-Dichlorophenol			%	88			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)			%	75			30-130	Pass	
4-Chloro-3-methylphenol			%	89			30-130	Pass	
4-Nitrophenol			%	33			30-130	Pass	
Pentachlorophenol			%	104			30-130	Pass	
Phenol			%	48			30-130	Pass	
LCS - % Recovery									
Nitrate (as N)			%	94			70-130	Pass	
Sulphate (as SO4)			%	104			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M20-Oc06704	NCP	%	76			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M20-Oc06704	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M20-Oc05284	NCP	%	104			70-130	Pass	
Acenaphthylene	M20-Oc05284	NCP	%	100			70-130	Pass	
Anthracene	M20-Oc05284	NCP	%	103			70-130	Pass	
Benz(a)anthracene	M20-Oc05284	NCP	%	85			70-130	Pass	
Benzo(a)pyrene	M20-Oc05284	NCP	%	83			70-130	Pass	
Benzo(b&j)fluoranthene	M20-Oc05284	NCP	%	80			70-130	Pass	
Benzo(g.h.i)perylene	M20-Oc05284	NCP	%	98			70-130	Pass	
Benzo(k)fluoranthene	M20-Oc05284	NCP	%	98			70-130	Pass	
Chrysene	M20-Oc05284	NCP	%	111			70-130	Pass	
Dibenz(a.h)anthracene	M20-Oc05284	NCP	%	88			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluoranthene	M20-Oc05284	NCP	%	86			70-130	Pass	
Fluorene	M20-Oc05284	NCP	%	75			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M20-Oc05284	NCP	%	86			70-130	Pass	
Naphthalene	M20-Oc05284	NCP	%	110			70-130	Pass	
Phenanthrene	M20-Oc05284	NCP	%	80			70-130	Pass	
Pyrene	M20-Oc05284	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Semivolatile Organics				Result 1					
2-Methyl-4.6-dinitrophenol	M20-Oc05284	NCP	%	78			30-130	Pass	
2-Chlorophenol	M20-Oc05284	NCP	%	71			30-130	Pass	
2-Methylphenol (o-Cresol)	M20-Oc05284	NCP	%	57			30-130	Pass	
2-Nitrophenol	M20-Oc05284	NCP	%	98			30-130	Pass	
2.4-Dichlorophenol	M20-Oc05284	NCP	%	67			30-130	Pass	
2.4-Dinitrophenol	M20-Oc05284	NCP	%	79			30-130	Pass	
2.4.5-Trichlorophenol	M20-Oc05284	NCP	%	91			30-130	Pass	
2.4.6-Trichlorophenol	M20-Oc05284	NCP	%	89			30-130	Pass	
2.6-Dichlorophenol	M20-Oc05284	NCP	%	80			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M20-Oc05284	NCP	%	123			30-130	Pass	
4-Chloro-3-methylphenol	M20-Oc05284	NCP	%	72			30-130	Pass	
4-Nitrophenol	M20-Oc05284	NCP	%	37			30-130	Pass	
Pentachlorophenol	M20-Oc05284	NCP	%	74			30-130	Pass	
Phenol	M20-Oc05284	NCP	%	37			30-130	Pass	
Spike - % Recovery									
				Result 1					
Nitrate (as N)	M20-Oc05560	NCP	%	81			70-130	Pass	
Sulphate (as SO4)	M20-Oc04237	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	M20-Oc05167	NCP	%	104			75-125	Pass	
Cadmium (filtered)	M20-Oc05167	NCP	%	89			75-125	Pass	
Chromium (filtered)	M20-Oc05167	NCP	%	90			75-125	Pass	
Copper (filtered)	M20-Oc05167	NCP	%	78			75-125	Pass	
Lead (filtered)	M20-Oc05167	NCP	%	88			75-125	Pass	
Mercury (filtered)	M20-Oc05167	NCP	%	93			75-125	Pass	
Nickel (filtered)	M20-Oc05167	NCP	%	84			75-125	Pass	
Zinc (filtered)	M20-Oc05167	NCP	%	80			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M20-Oc06760	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M20-Oc06760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M20-Oc06760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M20-Oc06760	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M20-Oc06760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M20-Oc06760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(b&j)fluoranthene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S20-Se50025	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
2-Methyl-4.6-dinitrophenol	S20-Se50025	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
1-Chloronaphthalene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1-Naphthylamine	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2-Dichlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3-Trichlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.4-Tetrachlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.3.5-Tetrachlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4-Trichlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.2.4.5-Tetrachlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3-Dichlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.3.5-Trichlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
1.4-Dichlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chloronaphthalene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Chlorophenol	S20-Se50025	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Methylnaphthalene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S20-Se50025	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Naphthylamine	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Nitroaniline	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Nitrophenol	S20-Se50025	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2-Picoline	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.3.4.6-Tetrachlorophenol	S20-Se50025	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dichlorophenol	S20-Se50025	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dimethylphenol	S20-Se50025	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	S20-Se50025	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2.4-Dinitrotoluene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.4.5-Trichlorophenol	S20-Se50025	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	S20-Se50025	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S20-Se50025	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.6-Dinitrotoluene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S20-Se50025	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
3-Methylcholanthrene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
3.3'-Dichlorobenzidine	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Aminobiphenyl	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Bromophenyl phenyl ether	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chloro-3-methylphenol	S20-Se50025	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
4-Chlorophenyl phenyl ether	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Nitrophenol	S20-Se50025	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
4.4'-DDD	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDE	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4.4'-DDT	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
7.12-Dimethylbenz(a)anthracene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Semivolatile Organics				Result 1	Result 2	RPD			
a-BHC	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Acetophenone	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aldrin	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aniline	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
b-BHC	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Benzyl chloride	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroethoxy)methane	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-chloroisopropyl)ether	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Bis(2-ethylhexyl)phthalate	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Butyl benzyl phthalate	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
d-BHC	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-butyl phthalate	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Di-n-octyl phthalate	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenz(a.j)acridine	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dibenzofuran	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dieldrin	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diethyl phthalate	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethyl phthalate	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Dimethylaminoazobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Diphenylamine	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan I	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan II	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endosulfan sulphate	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin aldehyde	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Endrin ketone	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
g-BHC (Lindane)	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Heptachlor epoxide	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorobutadiene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachlorocyclopentadiene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Hexachloroethane	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Methoxychlor	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodibutylamine	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosodipropylamine	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
N-Nitrosopiperidine	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nitrobenzene	S20-Se50025	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Pentachlorobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachloronitrobenzene	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Pentachlorophenol	S20-Se50025	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Phenol	S20-Se50025	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Pronamide	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Trifluralin	S20-Se50025	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Nitrate (as N)	M20-Oc02884	NCP	mg/L	1.7	1.7	<1	30%	Pass	
Sulphate (as SO4)	M20-Oc04228	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M20-Oc05167	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	M20-Oc05167	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M20-Oc05167	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	M20-Oc05167	NCP	mg/L	0.065	0.064	2.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead (filtered)	M20-Oc05167	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	M20-Oc05167	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	M20-Oc05167	NCP	mg/L	0.020	0.020	2.0	30%	Pass	
Zinc (filtered)	M20-Oc05167	NCP	mg/L	0.088	0.088	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (at 25 °C)	M20-Oc05580	CP	pH Units	7.7	7.7	pass	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Michael Morrison	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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#AU_CAU001_EnviroSampleVic

From: Michael Morrison
Sent: Friday, 9 October 2020 1:09 PM
To: #AU_CAU001_EnviroSampleVic
Cc: Sheppard, Matthew
Subject: FW: Additional PFAS analysis

Hi Steve
Can we book this on a 3day?

Sample	Depth	Date Sampled	Batch No.
HAW-TP01/1003/0.7-0.8	0.7-0.8	03/09/2020	742353
HAW-TP06/1002/0.3-0.4	0.3-0.4	03/09/2020	742353
HAW-TP08/1003/0.8-0.9	0.8-0.9	03/09/2020	742353
HAW-TP09/1003/0.5-0.6	0.5-0.6	03/09/2020	742353
HAW-TP10/1002/0.4-0.5	0.4-0.5	03/09/2020	742353

Kind Regards,

SE09895-GT816
SE09910-GT817
SE09915-GT818
SE09918-GT818
SE09921-GT818

Michael Morrison
Analytical Services Manager
Phone: 03 8564 5933
Mobile: 0499 201 025
Email : michaelmorrison@eurofins.com

From: Sheppard, Matthew <MSheppard@golder.com.au>
Sent: Friday, 9 October 2020 12:47 PM
To: Michael Morrison <MichaelMorrison@eurofins.com>
Subject: FW: Additional PFAS analysis

EXTERNAL EMAIL*

Mick,
Was the below request logged? I don't have the results yet?

Matt

Matthew Sheppard ((BSc (Geo, EnvSc), BBus (Econ), Dip Ed))
Senior Environmental Scientist

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#749457
MM

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From: Sheppard, Matthew
Sent: 01 October 2020 11:55
To: MichaelMorrison@eurofins.com
Subject: Additional PFAS analysis

Mick,

Can you please arrange to have PFAS (full suite) analysed on the following samples on a standard TAT?

Sample	Depth	Date Sampled	Batch No.
HAW-TP01/1003/0.7-0.8	0.7-0.8	03/09/2020	742353
HAW-TP06/1002/0.3-0.4	0.3-0.4	03/09/2020	742353
HAW-TP08/1003/0.8-0.9	0.8-0.9	03/09/2020	742353
HAW-TP09/1003/0.5-0.6	0.5-0.6	03/09/2020	742353
HAW-TP10/1002/0.4-0.5	0.4-0.5	03/09/2020	742353

Please contact me if you have any questions.

Yours sincerely

Matt

Matthew Sheppard ((BSc (Geo, EnvSc), BBus (Econ), Dip Ed))
Senior Environmental Scientist

GOLDER

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Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Golder Associates Pty Ltd (Richmond)
Contact name:	Matthew Sheppard
Project name:	BILL ST HAWTHORN
Project ID:	20145767
Turnaround time:	3 Day
Date/Time received	Oct 9, 2020 12:47 PM
Eurofins reference	749457

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Matthew Sheppard - MSheppard@golder.com.au.

Note: A copy of these results will also be delivered to the general Golder Associates Pty Ltd (Richmond) email address.

Global Leader - Results you can trust

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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Company Name: Golder Associates Pty Ltd (Richmond)
Address: 570-588 Swan Street
Richmond
VIC 3121

Project Name: BILL ST HAWTHORN
Project ID: 20145767

Order No.:
Report #: 749457
Phone: (03) 8862 3500
Fax: (03) 8862 3501

Received: Oct 9, 2020 12:47 PM
Due: Oct 14, 2020
Priority: 3 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
Mayfield Laboratory							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	HAW-TP01/1003/0.7-0.8	Sep 03, 2020		Soil	M20-Oc15679	X	X
2	HAW-TP06/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Oc15680	X	X
3	HAW-TP08/1003/0.8-0.9	Sep 03, 2020		Soil	M20-Oc15681	X	X
4	HAW-TP09/1003/0.5-0.6	Sep 03, 2020		Soil	M20-Oc15682	X	X

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Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
Mayfield Laboratory							
External Laboratory							
5	HAW-TP10/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Oc15683	X	X
Test Counts						5	5

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Certificate of Analysis

Golder Associates Pty Ltd (Richmond)
570-588 Swan Street
Richmond
VIC 3121

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Matthew Sheppard**

Report **749457-S**
Project name BILL ST HAWTHORN
Project ID 20145767
Received Date Oct 09, 2020

Client Sample ID			**HAW-TP01/1003/0.7-0.8**	**HAW-TP06/1002/0.3-0.4**	**HAW-TP08/1003/0.8-0.9**	**HAW-TP09/1003/0.5-0.6**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Oc15679**	**M20-Oc15680**	**M20-Oc15681**	**M20-Oc15682**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
% Moisture	1	%	13	1.2	17	12
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	115	127	140	125
13C5-PFPeA (surr.)	1	%	97	109	113	110
13C5-PFHxA (surr.)	1	%	97	109	122	108
13C4-PFHpA (surr.)	1	%	105	112	125	112
13C8-PFOA (surr.)	1	%	114	123	134	118
13C5-PFNA (surr.)	1	%	76	90	89	95
13C6-PFDA (surr.)	1	%	98	115	127	121
13C2-PFUnDA (surr.)	1	%	95	85	101	101
13C2-PFDoDA (surr.)	1	%	123	135	144	136
13C2-PFTeDA (surr.)	1	%	139	140	154	143
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10

Client Sample ID			HAW-TP01/1003/0.7-0.8	HAW-TP06/1002/0.3-0.4	HAW-TP08/1003/0.8-0.9	HAW-TP09/1003/0.5-0.6
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M20-Oc15679**	**M20-Oc15680**	**M20-Oc15681**	**M20-Oc15682**
Date Sampled			**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**	**Sep 03, 2020**
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
13C8-FOSA (surr.)	1	%	113	120	129	118
D3-N-MeFOSA (surr.)	1	%	115	112	121	115
D5-N-EtFOSA (surr.)	1	%	124	117	127	124
D7-N-MeFOSE (surr.)	1	%	104	108	125	112
D9-N-EtFOSE (surr.)	1	%	88	88	109	113
D5-N-EtFOSAA (surr.)	1	%	123	128	159	139
D3-N-MeFOSAA (surr.)	1	%	113	118	136	115
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	93	103	115	101
18O2-PFHxS (surr.)	1	%	83	96	109	94
13C8-PFOS (surr.)	1	%	73	90	95	82
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	106	116	127	106
13C2-6:2 FTSA (surr.)	1	%	147	136	167	105
13C2-8:2 FTSA (surr.)	1	%	102	117	114	107
13C2-10:2 FTSA (surr.)	1	%	110	111	124	131
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			HAW-TP10/1002/0.4-0.5
Sample Matrix			Soil
Eurofins Sample No.			M20-Oc15683
Date Sampled			Sep 03, 2020
Test/Reference	LOR	Unit	
% Moisture	1	%	14
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5
13C4-PFBA (surr.)	1	%	122
13C5-PFPeA (surr.)	1	%	106
13C5-PFHxA (surr.)	1	%	107
13C4-PFHpA (surr.)	1	%	107
13C8-PFOA (surr.)	1	%	115
13C5-PFNA (surr.)	1	%	100
13C6-PFDA (surr.)	1	%	125
13C2-PFUnDA (surr.)	1	%	110
13C2-PFDoDA (surr.)	1	%	133
13C2-PFTeDA (surr.)	1	%	127
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10
13C8-FOSA (surr.)	1	%	116
D3-N-MeFOSA (surr.)	1	%	111
D5-N-EtFOSA (surr.)	1	%	113
D7-N-MeFOSE (surr.)	1	%	104
D9-N-EtFOSE (surr.)	1	%	92
D5-N-EtFOSAA (surr.)	1	%	106
D3-N-MeFOSAA (surr.)	1	%	110
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5

Client Sample ID			HAW-TP10/1002/0.4-0.5
Sample Matrix			Soil
Eurofins Sample No.			M20-Oc15683
Date Sampled			Sep 03, 2020
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	100
18O2-PFHxS (surr.)	1	%	96
13C8-PFOS (surr.)	1	%	91
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5
13C2-4:2 FTSA (surr.)	1	%	107
13C2-6:2 FTSA (surr.)	1	%	119
13C2-8:2 FTSA (surr.)	1	%	129
13C2-10:2 FTSA (surr.)	1	%	106
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
% Moisture	Melbourne	Oct 09, 2020	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Oct 09, 2020	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Oct 09, 2020	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Oct 09, 2020	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Oct 09, 2020	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Oct 09, 2020	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Project ID: 20145767

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Due: Oct 14, 2020
Priority: 3 Day
Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
Mayfield Laboratory							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	HAW-TP01/1003/0.7-0.8	Sep 03, 2020		Soil	M20-Oc15679	X	X
2	HAW-TP06/1002/0.3-0.4	Sep 03, 2020		Soil	M20-Oc15680	X	X
3	HAW-TP08/1003/0.8-0.9	Sep 03, 2020		Soil	M20-Oc15681	X	X
4	HAW-TP09/1003/0.5-0.6	Sep 03, 2020		Soil	M20-Oc15682	X	X

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Contact Name: Matthew Sheppard

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
Mayfield Laboratory							
External Laboratory							
5	HAW-TP10/1002/0.4-0.5	Sep 03, 2020		Soil	M20-Oc15683	X	X
Test Counts						5	5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	87			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	85			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	125			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	115			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	107			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	117			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	107			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	87			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	121			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	86			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	85			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	83			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	61			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	88			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	92			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	69			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	108			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	67			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	86			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	84			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	70			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	84			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	118			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	112			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	82			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M20-Oc13892	NCP	%	86			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M20-Oc13892	NCP	%	76			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M20-Oc13892	NCP	%	81			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M20-Oc13892	NCP	%	99			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M20-Oc13892	NCP	%	113			50-150	Pass	
Perfluorononanoic acid (PFNA)	M20-Oc13892	NCP	%	110			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M20-Oc13892	NCP	%	116			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M20-Oc13892	NCP	%	107			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M20-Oc13892	NCP	%	104			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M20-Oc13892	NCP	%	75			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M20-Oc13892	NCP	%	101			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M20-Oc13892	NCP	%	80			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M20-Oc13892	NCP	%	82			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M20-Oc13892	NCP	%	74			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M20-Oc13892	NCP	%	69			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M20-Oc13892	NCP	%	93			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M20-Oc13892	NCP	%	88			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M20-Oc13892	NCP	%	71			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M20-Oc13892	NCP	%	75			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M20-Oc13892	NCP	%	91			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M20-Oc13892	NCP	%	61			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M20-Oc13892	NCP	%	73			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M20-Oc13892	NCP	%	71			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M20-Oc13892	NCP	%	63			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M20-Oc13892	NCP	%	70			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M20-Oc13892	NCP	%	97			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M20-Oc13892	NCP	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M20-Oc13892	NCP	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M20-Oc13892	NCP	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M20-Oc13892	NCP	%	76			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M20-Oc15578	NCP	%	6.7	6.8	1.0	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M20-Oc14912	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M20-Oc14912	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M20-Oc14912	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M20-Oc14912	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised By

Michael Morrison	Analytical Services Manager
Joseph Edouard	Senior Analyst-PFAS (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2015409**	Page	: 1 of 10
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Contact	: Benjamin Comensoli
Address	: P O BOX 6079 Building 7, 570-588 Swan St RICHMOND VIC, AUSTRALIA 3122	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 8862 3500	Telephone	: +61-3-8549 9600
Project	: 20145767	Date Samples Received	: 07-Sep-2020 09:20
Order number	: Project Number 20145767	Date Analysis Commenced	: 09-Sep-2020
C-O-C number	: ----	Issue Date	: 15-Sep-2020 08:10
Sampler	: MGS		
Site	: Bills St		
Quote number	: EN/002/18 National BQ		
No. of samples received	: 2		
No. of samples analysed	: 2		

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*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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.

- EG048G: EM2015382 #2 Poor insoluble matrix recovery for Hexavalent Chromium due to sample matrix. Confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, 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.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EG035T: EM2015409 #2 Poor matrix spike recovery for total mercury due to sample matrix. Confirmed by re-extraction and re-analysis.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	HAW-TP02/1901	HAW-TP10/1901	----	----	----
			Client sampling date / time	03-Sep-2020 00:00	03-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2015409-001	EM2015409-002	--------	--------	--------
				Result	Result	----	----	----
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	6.8	7.3	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	20.3	17.8	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	8	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Copper	7440-50-8	5	mg/kg	16	34	----	----	----
Lead	7439-92-1	5	mg/kg	49	112	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	----	----	----
Nickel	7440-02-0	2	mg/kg	11	12	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	<5	----	----	----
Silver	7440-22-4	2	mg/kg	<2	<2	----	----	----
Tin	7440-31-5	5	mg/kg	<5	45	----	----	----
Zinc	7440-66-6	5	mg/kg	100	318	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.1	0.2	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	----	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	<1	----	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	160	100	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	HAW-TP02/1901	HAW-TP10/1901	----	----	----
			Client sampling date / time	03-Sep-2020 00:00	03-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2015409-001	EM2015409-002	--------	--------	--------
				Result	Result	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	<1	----	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	----	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	----	----	----
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	----	----	----
Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	----	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	----	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	----	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	----	----	----
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	----	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	----	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	----	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	----	----	----
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	----	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	----	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	<0.01	----	----	----
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	<0.01	----	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	----	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	----	----	----
2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	----	----	----
2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	----	----	----
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	<0.03	<0.03	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	HAW-TP02/1901	HAW-TP10/1901	----	----	----
			Client sampling date / time	03-Sep-2020 00:00	03-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2015409-001	EM2015409-002	--------	--------	--------
				Result	Result	----	----	----
EP075A: Phenolic Compounds (Halogenated) - Continued								
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	<1	<1	----	----	----
2-Methylphenol	95-48-7	1	mg/kg	<1	<1	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	----	----	----
2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	----	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	----	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	----	----	----
4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	----	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	----	----	----
Dinoseb	88-85-7	5	mg/kg	<5	<5	----	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	----	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	<1	<1	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	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	**1.2**	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	**2.3**	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	**2.4**	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	**1.3**	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	**1.2**	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	<1.0	**2.5**	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	**1.6**	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	**0.8**	----	----	----
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	**1.0**	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	**14.3**	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	**2.1**	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**2.3**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**2.6**	----	----	----
EP075I: Organochlorine Pesticides								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	HAW-TP02/1901	HAW-TP10/1901	----	----	----
			Client sampling date / time	03-Sep-2020 00:00	03-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2015409-001	EM2015409-002	--------	--------	--------
				Result	Result	----	----	----
EP075I: Organochlorine Pesticides - Continued								
alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	----	----	----
beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	----	----	----
gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	----	----	----
delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	----	----	----
Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	----	----	----
Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	----	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	----	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	----	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	----	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	----	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	----	----	----
Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	----	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	----	----	----
4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	----	----	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg	<0.03	<0.03	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<0.03	<0.03	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	----	----	----
^ Chlordane	57-74-9	0.03	mg/kg	<0.03	<0.03	----	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<0.03	<0.03	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	HAW-TP02/1901	HAW-TP10/1901	----	----	----
			Client sampling date / time	03-Sep-2020 00:00	03-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2015409-001	EM2015409-002	--------	--------	--------
				Result	Result	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>C16 - C34 Fraction	----	100	mg/kg	<100	**110**	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	**110**	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	**0.0016**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	----	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	----	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	----	<0.0002	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	HAW-TP02/1901	HAW-TP10/1901	----	----	----
			Client sampling date / time	03-Sep-2020 00:00	03-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2015409-001	EM2015409-002	--------	--------	--------
				Result	Result	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	----	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	----	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	----	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	----	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	----	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	----	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	----	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	----	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	----	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	----	<0.0005	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	----	**0.0016**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	----	**0.0016**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	----	**0.0016**	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**101**	**98.3**	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	HAW-TP02/1901	HAW-TP10/1901	----	----	----
			Client sampling date / time	03-Sep-2020 00:00	03-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2015409-001	EM2015409-002	--------	--------	--------
				Result	Result	----	----	----
EP074S: VOC Surrogates (Ultra-Trace)								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	81.5	66.0	----	----	----
Toluene-D8	2037-26-5	0.1	%	82.4	66.9	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	89.1	71.0	----	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)								
Phenol-d6	13127-88-3	0.025	%	85.8	88.0	----	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%	79.2	80.2	----	----	----
2.4.6-Tribromophenol	118-79-6	0.025	%	82.6	88.3	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.025	%	81.6	85.5	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%	80.9	83.1	----	----	----
2-Fluorobiphenyl	321-60-8	0.025	%	94.8	94.3	----	----	----
Anthracene-d10	1719-06-8	0.025	%	92.1	92.8	----	----	----
4-Terphenyl-d14	1718-51-0	0.025	%	85.5	86.9	----	----	----
EP231S: PFAS Surrogate								
13C8-PFOA	----	0.0002	%	----	125	----	----	----
13C4-PFOS	----	0.0002	%	----	123	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	28	134
2-Chlorophenol-D4	93951-73-6	27	123
2.4.6-Tribromophenol	118-79-6	25	149
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	29	125
1.2-Dichlorobenzene-D4	2199-69-1	31	117
2-Fluorobiphenyl	321-60-8	44	136
Anthracene-d10	1719-06-8	53	133
4-Terphenyl-d14	1718-51-0	59	141
EP231S: PFAS Surrogate			
13C8-PFOA	----	69	133
13C4-PFOS	----	68	136

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2015409**	Page	: 1 of 17
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Contact	: Benjamin Comensoli
Address	: P O BOX 6079 Building 7, 570-588 Swan St RICHMOND VIC, AUSTRALIA 3122	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 8862 3500	Telephone	: +61-3-8549 9600
Project	: 20145767	Date Samples Received	: 07-Sep-2020
Order number	: Project Number 20145767	Date Analysis Commenced	: 09-Sep-2020
C-O-C number	: ----	Issue Date	: 15-Sep-2020
Sampler	: MGS		
Site	: Bills St		
Quote number	: EN/002/18 National BQ		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3250497)									
EM2015409-001	HAW-TP02/1901	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	11	8	23.8	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	7	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	15	7.47	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	49	60	20.6	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	100	89	11.6	0% - 50%
EM2015463-008	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	55	56	2.22	0% - 20%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	13	13	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	11	0.00	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	45	44	0.00	No Limit
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 3246831)									
EM2015264-098	Anonymous	EA001: pH (CaCl2)	----	0.1	pH Unit	6.5	6.5	0.00	0% - 20%
EM2015341-033	Anonymous	EA001: pH (CaCl2)	----	0.1	pH Unit	6.6	6.5	1.53	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3246090)									

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3246090) - continued									
EM2015350-002	Anonymous	EA055: Moisture Content	----	0.1	%	20.3	19.5	4.33	0% - 20%
EM2015434-003	Anonymous	EA055: Moisture Content	----	0.1	%	4.0	4.6	13.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3250496)									
EM2015409-001	HAW-TP02/1901	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.00	No Limit
EM2015463-008	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 3248573)									
EM2015382-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM2015410-005	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 3249397)									
EM2015382-001	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EM2015410-048	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EK040T: Fluoride Total (QC Lot: 3246887)									
EM2015382-001	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	240	250	5.78	No Limit
EM2015410-048	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	200	210	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3246645)									
EM2015382-001	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM2015410-055	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3245928)									
EM2015382-001	Anonymous	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM2015410-055	Anonymous	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 3245928)									
EM2015382-001	Anonymous	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EM2015410-055	Anonymous	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074I: Volatile Halogenated Compounds (QC Lot: 3245928)									
EM2015382-001	Anonymous	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074I: Volatile Halogenated Compounds (QC Lot: 3245928) - continued									
EM2015382-001	Anonymous	EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit
EM2015410-055	Anonymous	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 3246643)									
EM2015382-001	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 3246643) - continued									
EM2015382-001	Anonymous	EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EM2015410-055	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 3246643)									
EM2015382-001	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
EM2015410-055	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3246643)									
EM2015382-001	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3246643) - continued									
EM2015382-001	Anonymous	EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1	mg/kg	<1.0	<1.0	0.00	No Limit
EM2015410-055	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1	mg/kg	<1.0	<1.0	0.00	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 3246643)									
EM2015382-001	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075I: Organochlorine Pesticides (QC Lot: 3246643) - continued									
EM2015382-001	Anonymous	EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EM2015410-055	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3245928)									
EM2015382-001	Anonymous	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EM2015410-055	Anonymous	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3246644)									
EM2015382-001	Anonymous	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM2015410-055	Anonymous	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3246644) - continued									
EM2015410-055	Anonymous	EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3245928)									
EM2015382-001	Anonymous	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EM2015410-055	Anonymous	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3246644)									
EM2015382-001	Anonymous	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM2015410-055	Anonymous	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3245572)									
EM2015304-001	Anonymous	EP231X-EM: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EM2015409-002	HAW-TP10/1901	EP231X-EM: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0016	0.0014	13.9	No Limit
		EP231X-EM: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3245572)									
EM2015304-001	Anonymous	EP231X-EM: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3245572) - continued									
EM2015304-001	Anonymous	EP231X-EM: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EM2015409-002	HAW-TP10/1901	EP231X-EM: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.0003	0.00	No Limit
		EP231X-EM: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3245572)									
EM2015304-001	Anonymous	EP231X-EM: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EM2015409-002	HAW-TP10/1901	EP231X-EM: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3245572) - continued									
EM2015409-002	HAW-TP10/1901	EP231X-EM: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3245572)									
EM2015304-001	Anonymous	EP231X-EM: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EM2015409-002	HAW-TP10/1901	EP231X-EM: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X-EM: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3245572)									
EM2015304-001	Anonymous	EP231X-EM: Sum of PFAS	----	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X-EM: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EM2015409-002	HAW-TP10/1901	EP231X-EM: Sum of PFAS	----	0.0002	mg/kg	0.0016	0.0017	6.06	No Limit
		EP231X-EM: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0016	0.0014	13.3	No Limit
		EP231X-EM: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0016	0.0017	6.06	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3250497)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	94.0	78.5	107
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	97.7	76.2	108
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	101	78.1	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	99.7	78.4	106
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	102	78.0	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	107	79.9	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	102	92.0	110
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.1 mg/kg	91.1	80.0	108
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.2 mg/kg	113	78.4	117
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	105	79.1	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3250496)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	106	76.9	110
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 3248573)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	20 mg/kg	72.8	70.0	130
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 3249397)								
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	20 mg/kg	86.2	70.0	130
EK040T: Fluoride Total (QCLot: 3246887)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	400 mg/kg	96.2	75.2	110
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3246645)								
EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	98.7	70.8	136
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3245928)								
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	102	69.2	116
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	101	67.7	116
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	99.6	66.6	115
EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4.2 mg/kg	99.7	65.2	112
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	2.1 mg/kg	100	69.4	111
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	99.8	68.4	110
EP074H: Naphthalene (QCLot: 3245928)								
EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	0.6 mg/kg	105	72.3	114
EP074I: Volatile Halogenated Compounds (QCLot: 3245928)								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	114	47.0	138
EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	115	57.6	125

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low	Recovery Limits (%) High
EP074I: Volatile Halogenated Compounds (QCLot: 3245928) - continued								
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	102	72.3	115
EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	109	60.5	122
EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	105	70.3	112
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	101	66.6	115
EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	104	64.4	122
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	105	58.4	127
EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	100	72.9	114
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	97.0	64.7	115
EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	95.0	72.6	116
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	101	60.0	119
EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	97.5	71.8	116
EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	95.6	66.1	116
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	94.6	39.8	128
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	98.8	70.3	113
EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	98.0	62.6	113
EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	99.2	70.8	110
EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	103	48.4	120
EP075A: Phenolic Compounds (Halogenated) (QCLot: 3246643)								
EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	2 mg/kg	78.8	71.4	123
EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	2 mg/kg	85.0	73.1	132
EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	2 mg/kg	82.8	72.2	132
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	2 mg/kg	82.2	70.8	128
EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	2 mg/kg	84.0	70.9	134
EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	2 mg/kg	84.9	70.9	126
EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	2 mg/kg	80.9	61.9	126
EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	4 mg/kg	84.4	47.2	128
EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	4 mg/kg	85.9	44.0	135
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 3246643)								
EP075-EM: Phenol	108-95-2	1	mg/kg	<1	2 mg/kg	79.0	71.5	127
EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	2 mg/kg	80.8	70.2	129
EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	4 mg/kg	81.7	74.0	130
EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	2 mg/kg	81.0	70.9	133
EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	2 mg/kg	80.4	64.8	132
EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	10 mg/kg	59.5	41.0	156
EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	10 mg/kg	82.5	52.6	128
EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	10 mg/kg	76.8	42.6	125
EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	10 mg/kg	81.4	47.3	128
EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	1 mg/kg	100	34.5	137

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low	Recovery Limits (%) High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3246643)								
EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	2 mg/kg	83.3	73.0	131
EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	2 mg/kg	81.5	70.8	130
EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	2 mg/kg	84.4	72.0	135
EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	2 mg/kg	85.7	74.4	131
EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	2 mg/kg	84.4	73.3	130
EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	2 mg/kg	86.3	59.4	127
EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	2 mg/kg	89.7	75.3	132
EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	2 mg/kg	89.8	75.4	130
EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	2 mg/kg	92.9	69.6	133
EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	2 mg/kg	95.4	75.0	133
EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1	mg/kg	<1.0	4 mg/kg	94.5	75.8	133
EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	2 mg/kg	93.3	65.1	130
EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	2 mg/kg	90.9	72.1	134
EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	2 mg/kg	91.3	72.9	135
EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	2 mg/kg	89.8	71.3	134
EP075I: Organochlorine Pesticides (QCLot: 3246643)								
EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	2 mg/kg	85.9	71.0	129
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	2 mg/kg	85.1	65.9	125
EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	2 mg/kg	91.8	66.2	130
EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	2 mg/kg	87.2	70.8	130
EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	2 mg/kg	85.0	68.7	134
EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	2 mg/kg	83.6	67.2	131
EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	2 mg/kg	84.6	70.2	130
EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	2 mg/kg	84.6	65.6	130
EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	2 mg/kg	84.2	65.3	133
EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	2 mg/kg	85.9	66.7	131
EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	2 mg/kg	68.1	67.9	135
EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	2 mg/kg	81.5	70.9	132
EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	2 mg/kg	85.3	70.0	133
EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	2 mg/kg	95.6	49.6	157
EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	2 mg/kg	80.5	55.4	148
EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	2 mg/kg	91.3	71.4	135
EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	2 mg/kg	93.4	74.8	134
EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	2 mg/kg	89.9	70.2	135
EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	2 mg/kg	91.9	67.1	133
EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	2 mg/kg	96.7	63.6	135
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3245928)								
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	39.6 mg/kg	110	61.1	119

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3246644)								
EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	900 mg/kg	82.4	69.9	128
EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	3030 mg/kg	87.8	83.0	124
EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	1520 mg/kg	112	76.9	117
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3245928)								
EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	48.9 mg/kg	111	59.9	119
EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3246644)								
EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	1160 mg/kg	91.6	70.2	126
EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	4020 mg/kg	95.0	81.4	120
EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	280 mg/kg	108	53.4	129
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3245572)								
EP231X-EM: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	98.2	72.0	128
EP231X-EM: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	83.6	73.0	123
EP231X-EM: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	96.0	67.0	130
EP231X-EM: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	105	70.0	132
EP231X-EM: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	95.4	68.0	136
EP231X-EM: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00121 mg/kg	96.5	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3245572)								
EP231X-EM: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	106	71.0	135
EP231X-EM: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.7	69.0	132
EP231X-EM: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	70.0	132
EP231X-EM: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.8	71.0	131
EP231X-EM: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	69.0	133
EP231X-EM: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	72.0	129
EP231X-EM: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	107	69.0	133
EP231X-EM: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	64.0	136
EP231X-EM: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	69.0	135
EP231X-EM: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.6	66.0	139
EP231X-EM: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	108	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3245572)								
EP231X-EM: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	67.0	137
EP231X-EM: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	105	70.0	130
EP231X-EM: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.6	70.0	130
EP231X-EM: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	102	70.0	130

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3245572) - continued								
EP231X-EM: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	91.0	70.0	130
EP231X-EM: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.0	63.0	144
EP231X-EM: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.4	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3245572)								
EP231X-EM: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	103	62.0	145
EP231X-EM: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	95.5	64.0	140
EP231X-EM: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	103	65.0	137
EP231X-EM: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	98.0	70.0	130
EP231P: PFAS Sums (QCLot: 3245572)								
EP231X-EM: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X-EM: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X-EM: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3250497)							
EM2015409-002	HAW-TP10/1901	EG005T: Arsenic	7440-38-2	50 mg/kg	114	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	103	84.0	116
		EG005T: Copper	7440-50-8	250 mg/kg	108	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	99.6	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	104	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	97.1	80.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3250496)							
EM2015409-002	HAW-TP10/1901	EG035T: Mercury	7439-97-6	0.5 mg/kg	# 117	76.0	116
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 3248573)							
EM2015382-002	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	20 mg/kg	# 31.7	58.0	114
EM2015382-002	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	20 mg/kg	62.9	58.0	114
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 3249397)							
EM2015382-002	Anonymous	EK026SF: Total Cyanide	57-12-5	20 mg/kg	85.0	70.0	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%) Low	High
EK040T: Fluoride Total (QCLot: 3246887)							
EM2015382-002	Anonymous	EK040T: Fluoride	16984-48-8	400 mg/kg	92.8	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3246645)							
EM2015382-002	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	1 mg/kg	152	36.0	152
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3245928)							
EM2015382-002	Anonymous	EP074-UT: Benzene	71-43-2	2 mg/kg	102	50.0	138
		EP074-UT: Toluene	108-88-3	2 mg/kg	97.6	56.0	134
EP074I: Volatile Halogenated Compounds (QCLot: 3245928)							
EM2015382-002	Anonymous	EP074-UT: 1.1-Dichloroethene	75-35-4	2 mg/kg	103	26.0	141
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	98.7	50.0	134
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	96.8	28.0	134
EP075A: Phenolic Compounds (Halogenated) (QCLot: 3246643)							
EM2015382-003	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	3 mg/kg	55.3	34.0	118
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	3 mg/kg	53.1	41.0	139
		EP075-EM: Pentachlorophenol	87-86-5	3 mg/kg	61.9	10.0	144
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 3246643)							
EM2015382-003	Anonymous	EP075-EM: Phenol	108-95-2	3 mg/kg	54.1	31.5	134
		EP075-EM: 2-Nitrophenol	88-75-5	3 mg/kg	41.8	13.0	129
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3246643)							
EM2015382-003	Anonymous	EP075-EM: Acenaphthene	83-32-9	3 mg/kg	56.2	46.0	138
		EP075-EM: Pyrene	129-00-0	3 mg/kg	60.2	26.5	169
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3245928)							
EM2015382-002	Anonymous	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	82.8	43.0	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3246644)							
EM2015409-001	HAW-TP02/1901	EP071-EM: C10 - C14 Fraction	----	900 mg/kg	78.1	53.0	123
		EP071-EM: C15 - C28 Fraction	----	3030 mg/kg	80.6	70.0	124
		EP071-EM: C29 - C36 Fraction	----	1520 mg/kg	102	64.0	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3245928)							
EM2015382-002	Anonymous	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	79.2	42.0	106
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3246644)							
EM2015409-001	HAW-TP02/1901	EP071-EM: >C10 - C16 Fraction	----	1160 mg/kg	85.3	65.0	123
		EP071-EM: >C16 - C34 Fraction	----	4020 mg/kg	86.8	67.0	121
		EP071-EM: >C34 - C40 Fraction	----	280 mg/kg	98.4	44.0	126
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3245572)							
EM2015304-002	Anonymous	EP231X-EM: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	93.6	72.0	128
		EP231X-EM: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00118 mg/kg	74.5	73.0	123

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%) Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3245572) - continued							
EM2015304-002	Anonymous	EP231X-EM: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00114 mg/kg	86.5	67.0	130
		EP231X-EM: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	101	70.0	132
		EP231X-EM: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	93.4	68.0	136
		EP231X-EM: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00121 mg/kg	93.3	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3245572)							
EM2015304-002	Anonymous	EP231X-EM: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	91.2	71.0	135
		EP231X-EM: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	93.4	69.0	132
		EP231X-EM: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	101	70.0	132
		EP231X-EM: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	87.6	71.0	131
		EP231X-EM: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	95.4	69.0	133
		EP231X-EM: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	93.6	72.0	129
		EP231X-EM: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	89.4	69.0	133
		EP231X-EM: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	97.8	64.0	136
		EP231X-EM: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	91.6	69.0	135
		EP231X-EM: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	84.9	66.0	139
		EP231X-EM: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	105	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3245572)							
EM2015304-002	Anonymous	EP231X-EM: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	101	67.0	137
		EP231X-EM: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	96.8	70.0	130
		EP231X-EM: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	96.7	70.0	130
		EP231X-EM: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	92.1	70.0	130
		EP231X-EM: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	93.4	70.0	130
		EP231X-EM: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	102	63.0	144
		EP231X-EM: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	88.0	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3245572)							
EM2015304-002	Anonymous	EP231X-EM: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	96.9	62.0	145
		EP231X-EM: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	101	64.0	140
		EP231X-EM: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	102	65.0	137
		EP231X-EM: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00121 mg/kg	91.3	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2015409**	Page	: 1 of 8
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Telephone	: +61-3-8549 9600
Project	: 20145767	Date Samples Received	: 07-Sep-2020
Site	: Bills St	Issue Date	: 15-Sep-2020
Sampler	: MGS	No. of samples received	: 2
Order number	: Project Number 20145767	No. of samples analysed	: 2

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG035T: Total Recoverable Mercury by FIMS	EM2015409--002	HAW-TP10/1901	**Mercury**	7439-97-6	117 %	76.0-116%	**Recovery greater than upper data quality objective**
EG048: Hexavalent Chromium (Alkaline Digest)	EM2015382--002	Anonymous	**Hexavalent Chromium**	18540-29-9	31.7 %	58.0-114%	**Recovery less than lower data quality objective**

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA001: pH in soil using 0.01M CaCl extract								
Soil Glass Jar - Unpreserved (EA001)								
HAW-TP02/1901,	HAW-TP10/1901	**03-Sep-2020**	**10-Sep-2020**	10-Sep-2020	✓	**10-Sep-2020**	10-Sep-2020	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
HAW-TP02/1901,	HAW-TP10/1901	**03-Sep-2020**	**----**	----	----	**09-Sep-2020**	17-Sep-2020	✓
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
HAW-TP02/1901,	HAW-TP10/1901	**03-Sep-2020**	**11-Sep-2020**	02-Mar-2021	✓	**11-Sep-2020**	02-Mar-2021	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
HAW-TP02/1901,	HAW-TP10/1901	**03-Sep-2020**	**11-Sep-2020**	01-Oct-2020	✓	**11-Sep-2020**	01-Oct-2020	✓
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG048G)								
HAW-TP02/1901,	HAW-TP10/1901	**03-Sep-2020**	**10-Sep-2020**	01-Oct-2020	✓	**11-Sep-2020**	17-Sep-2020	✓
EK026SF: Total CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK026SF)								
HAW-TP02/1901,	HAW-TP10/1901	**03-Sep-2020**	**10-Sep-2020**	17-Sep-2020	✓	**11-Sep-2020**	24-Sep-2020	✓
EK040T: Fluoride Total								
Soil Glass Jar - Unpreserved (EK040T)								
HAW-TP02/1901,	HAW-TP10/1901	**03-Sep-2020**	**10-Sep-2020**	01-Oct-2020	✓	**14-Sep-2020**	01-Oct-2020	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066-EM)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	17-Sep-2020	✓	**10-Sep-2020**	19-Oct-2020	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074-UT)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	10-Sep-2020	✓	**09-Sep-2020**	10-Sep-2020	✓
EP074H: Naphthalene							
Soil Glass Jar - Unpreserved (EP074-UT)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	10-Sep-2020	✓	**09-Sep-2020**	10-Sep-2020	✓
EP074I: Volatile Halogenated Compounds							
Soil Glass Jar - Unpreserved (EP074-UT)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	10-Sep-2020	✓	**09-Sep-2020**	10-Sep-2020	✓
EP075A: Phenolic Compounds (Halogenated)							
Soil Glass Jar - Unpreserved (EP075-EM)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	17-Sep-2020	✓	**10-Sep-2020**	19-Oct-2020	✓
EP075A: Phenolic Compounds (Non-halogenated)							
Soil Glass Jar - Unpreserved (EP075-EM)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	17-Sep-2020	✓	**10-Sep-2020**	19-Oct-2020	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075-EM)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	17-Sep-2020	✓	**10-Sep-2020**	19-Oct-2020	✓
EP075I: Organochlorine Pesticides							
Soil Glass Jar - Unpreserved (EP075-EM)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	17-Sep-2020	✓	**10-Sep-2020**	19-Oct-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074-UT)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	10-Sep-2020	✓	**09-Sep-2020**	10-Sep-2020	✓
Soil Glass Jar - Unpreserved (EP071-EM)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	17-Sep-2020	✓	**10-Sep-2020**	19-Oct-2020	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP074-UT)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	10-Sep-2020	✓	**09-Sep-2020**	10-Sep-2020	✓
Soil Glass Jar - Unpreserved (EP071-EM)							
HAW-TP02/1901, HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	17-Sep-2020	✓	**10-Sep-2020**	19-Oct-2020	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X-EM)							
HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	02-Mar-2021	✓	**09-Sep-2020**	19-Oct-2020	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X-EM)							
HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	02-Mar-2021	✓	**09-Sep-2020**	19-Oct-2020	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X-EM)							
HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	02-Mar-2021	✓	**09-Sep-2020**	19-Oct-2020	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X-EM)							
HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	02-Mar-2021	✓	**09-Sep-2020**	19-Oct-2020	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X-EM)							
HAW-TP10/1901	**03-Sep-2020**	**09-Sep-2020**	02-Mar-2021	✓	**09-Sep-2020**	19-Oct-2020	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-EM	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-EM	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-EM	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
PCB - VIC EPA 448.3 Screen	EP066-EM	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-EM	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl2 extract	EA001	SOIL	In house: Referenced to Rayment and Lyons 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511 / ISO 14403. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM Schedule B(3).
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071-EM	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
Volatile Organic Compounds - Ultra-trace	EP074-UT	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
Semivolatile Organic Compounds - Waste Classification	EP075-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-EM	SOIL	In-house: Analysis of soils by QuEChERS extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
pH in soil using a 0.01M CaCl2 extract	EA001-PR	SOIL	In house: Referenced to Rayment and Lyons 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-EM	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2015409**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Contact	: Benjamin Comensoli
Address	: P O BOX 6079 Building 7, 570-588 Swan St RICHMOND VIC, AUSTRALIA 3122	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: gcontact@golder.com.au	E-mail	: benjamin.comensoli@alsglobal.com
Telephone	: +61 03 8862 3500	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 8862 3501	Facsimile	: +61-3-8549 9626
Project	: 20145767	Page	: 1 of 2
Order number	: Project Number 20145767	Quote number	: EM2017GOLASS0027 (EN/002/18 National BQ)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Bills St		
Sampler	: MGS		

Dates

Date Samples Received	: 07-Sep-2020 09:20	Issue Date	: 08-Sep-2020
Client Requested Due Date	: 14-Sep-2020	Scheduled Reporting Date	: **14-Sep-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 5.2°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X-EM (solids) PFAS - Full Suite (28 analytes)	SOIL - P-16 IWRG 621
EM2015409-001	03-Sep-2020 00:00	HAW-TP02/1901	✓		✓
EM2015409-002	03-Sep-2020 00:00	HAW-TP10/1901	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

ALL RESULTS

- *AU Certificate of Analysis - NATA (COA)	Email	MEL-ENVdata@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	MEL-ENVdata@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	MEL-ENVdata@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	MEL-ENVdata@golder.com.au
- Chain of Custody (CoC) (COC)	Email	MEL-ENVdata@golder.com.au
- Chromatogram (CHROM)	Email	MEL-ENVdata@golder.com.au
- EDI Format - ESDAT (ESDAT)	Email	MEL-ENVdata@golder.com.au

MATTHEW SHEPPARD

- *AU Certificate of Analysis - NATA (COA)	Email	MSheppard@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	MSheppard@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	MSheppard@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	MSheppard@golder.com.au
- Chain of Custody (CoC) (COC)	Email	MSheppard@golder.com.au
- Chromatogram (CHROM)	Email	MSheppard@golder.com.au
- EDI Format - ESDAT (ESDAT)	Email	MSheppard@golder.com.au

Sheet..... of.....

GA-BQ-035 SAMPLE CHAIN OF CUSTODY DOCUMENTATION - SOIL/ROCK

Project & Task Number:	20145767	Quote/Order No.:	
Site Location:	Bills St	Lab Name:	ALS
Sampled By:	MGS	Mobile No.:	
Turnaround (Days)	Standard	BY:	
Report Format:	HARD ☐ FAX ☐ EMAIL ☐ ELECTRONIC DATA FORMAT ☐		

GOLDER ASSOCIATES PTY LTD — Phone: 0418504912 — GOLDER

Invoice to be sent to au_accountspayable@golder.com.au — Fax

Project Manager: Matthew Sheppard — Email: msheppard@golder.com.au

Contact Phone: 0418504912

Results To: Matthew Sheppard — Email: msheppard@golder.com.au

Comments/Special Instructions:

Samples from a declared Fire Ant Area: No

Samples taken from a known Weed and or Pest Area: No

ANALYSIS REQUIRED

	SAMPLE ID	Depth	SAMPLE MATRIX	SAMPLE DATE	SAMPLE TIME	No. Containers	PRESERVATIVE	No CONTAINERS	POSSIBLE HIGH CONCENTRATION	IWRG 621 Suite	PFS (full suite)
1	HAW-TP02/1901	0.0-0.1	S	3/09/2020		2		2		X	
2	HAW-TP10/1901	0.0-0.1	S	3/09/2020		2		2		X	X

Environmental Division Melbourne
Work Order Reference
EM2015409

Telephone : + 61-3-8549 9600

SCANNED

Received: 7/9/20 Carrier:
C/note:
Temp: 5.2°C Seal: Y / N
Ice / Icebricks / NA

ALS

SAMPLE MATRIX = Soil/Sediment/Fill/Rock/Other — SAMPLE TYPE = Composite(C)/Discrete(DC)/Disturbed(DS)/Core(CR) — HIGH CONCENTRATION: Tick box and circle expected parameters in analysis list

Container Type and Preservative Codes: P = Natural Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Preserved Vial; VS = Sulphuric Acid

	SIGNATURE	COMPANY	DATE	TIME
RELEASED BY	Matthew Sheppard	GOLDER	4/09/2020	1400
RECEIVED BY				
RELEASED BY				
RECEIVED BY				
RELEASED BY	L. Vesseia	E.F.	7/9	
RECEIVED BY				

	SIGNATURE	COMPANY	DATE	TIME	Method of Shipment
RELEASED BY					Shipping Ref:
RECEIVED BY					

To Be Filled Out By Analysing Laboratory

Security Seal		Chilled		LAB. BATCH NUMBER	
Suitable Containers		Frozen		Bill to:	
Cool Box		Ambient		Address	

THIS FORM IS TO BE SIGNED BY GOLDER STAFF; COURIER/S; LABORATORY ON RECEIPT OF SAMPLES.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2016520**	Page	: 1 of 8
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Contact	: Benjamin Comensoli
Address	: P O BOX 6079 Building 7, 570-588 Swan St RICHMOND VIC, AUSTRALIA 3122	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 8862 3500	Telephone	: +61-3-8549 9600
Project	: 20145767	Date Samples Received	: 22-Sep-2020 09:15
Order number	: Project Number 20145767	Date Analysis Commenced	: 23-Sep-2020
C-O-C number	: ----	Issue Date	: 29-Sep-2020 13:51
Sampler	: MGS		
Site	: Bill St		
Quote number	: EN/002		
No. of samples received	: 2		
No. of samples analysed	: 2		

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*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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.

- pH analysis is done under non-stirring condition.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, 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.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EG035T: EM2016731 #1 Poor duplicate precision for total mercury due to sample matrix. Confirmed by re-extraction and re-analysis.
- EG035T: EM2016731 #3 Poor matrix spike recovery for total mercury due to sample matrix. Confirmed by re-extraction and re-analysis.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	GA20-BH-HAW-12/2902 0.4-0.5	GA20-BH-HAW-01/2901 0.0-0.1	----	----	----
			Client sampling date / time	11-Sep-2020 00:00	17-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2016520-001	EM2016520-002	--------	--------	--------
				Result	Result	----	----	----
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	7.6	6.2	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	14.9	17.0	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	31	9	----	----	----
Cadmium	7440-43-9	1	mg/kg	3	<1	----	----	----
Copper	7440-50-8	5	mg/kg	205	8	----	----	----
Lead	7439-92-1	5	mg/kg	1010	17	----	----	----
Molybdenum	7439-98-7	2	mg/kg	3	<2	----	----	----
Nickel	7440-02-0	2	mg/kg	44	6	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	<5	----	----	----
Silver	7440-22-4	2	mg/kg	<2	<2	----	----	----
Tin	7440-31-5	5	mg/kg	558	<5	----	----	----
Zinc	7440-66-6	5	mg/kg	1450	23	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	5.0	<0.1	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	----	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	2	<1	----	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	320	390	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	<0.2	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	GA20-BH-HAW-12/2902 0.4-0.5	GA20-BH-HAW-01/2901 0.0-0.1	----	----	----
			Client sampling date / time	11-Sep-2020 00:00	17-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2016520-001	EM2016520-002	--------	--------	--------
				Result	Result	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	<1	----	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	----	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	----	----	----
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	----	----	----
Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	----	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	----	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	----	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	----	----	----
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	----	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	----	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	----	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	----	----	----
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	----	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	----	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	<0.01	----	----	----
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	<0.01	----	----	----
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	----	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	----	----	----
2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	----	----	----
2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	GA20-BH-HAW-12/2902 0.4-0.5	GA20-BH-HAW-01/2901 0.0-0.1	----	----	----
			Client sampling date / time	11-Sep-2020 00:00	17-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2016520-001	EM2016520-002	--------	--------	--------
				Result	Result	----	----	----
EP075A: Phenolic Compounds (Halogenated) - Continued								
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	<0.03	<0.03	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	<1	<1	----	----	----
2-Methylphenol	95-48-7	1	mg/kg	<1	<1	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	----	----	----
2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	----	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	----	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	----	----	----
4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	----	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	----	----	----
Dinoseb	88-85-7	5	mg/kg	<5	<5	----	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	----	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	<1	<1	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	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	**1.2**	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	**2.8**	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	**2.8**	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	**1.7**	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	**1.6**	<0.5	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1.0	mg/kg	**3.4**	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	**2.2**	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	**1.2**	<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	**1.4**	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	GA20-BH-HAW-12/2902 0.4-0.5	GA20-BH-HAW-01/2901 0.0-0.1	----	----	----
			Client sampling date / time	11-Sep-2020 00:00	17-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2016520-001	EM2016520-002	--------	--------	--------
				Result	Result	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	**18.8**	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	**2.9**	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**3.1**	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**3.4**	**1.2**	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	----	----	----
beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	----	----	----
gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	----	----	----
delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	----	----	----
Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	----	----	----
Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	----	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	----	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	----	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	----	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	----	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	----	----	----
Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	----	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	----	----	----
4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	----	----	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg	<0.03	<0.03	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<0.03	<0.03	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	----	----	----
^ Chlordane	57-74-9	0.03	mg/kg	<0.03	<0.03	----	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<0.03	<0.03	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	GA20-BH-HAW-12/2902 0.4-0.5	GA20-BH-HAW-01/2901 0.0-0.1	----	----	----
			Client sampling date / time	11-Sep-2020 00:00	17-Sep-2020 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM2016520-001	EM2016520-002	--------	--------	--------
				Result	Result	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued								
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	----	----
C15 - C28 Fraction	----	100	mg/kg	100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	100	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	170	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	170	<50	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	83.1	96.7	----	----	----
EP074S: VOC Surrogates (Ultra-Trace)								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	114	98.8	----	----	----
Toluene-D8	2037-26-5	0.1	%	110	94.4	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	112	99.0	----	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)								
Phenol-d6	13127-88-3	0.025	%	86.8	104	----	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%	87.6	100	----	----	----
2.4.6-Tribromophenol	118-79-6	0.025	%	85.6	99.0	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.025	%	88.9	100	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.025	%	88.8	101	----	----	----
2-Fluorobiphenyl	321-60-8	0.025	%	96.9	112	----	----	----
Anthracene-d10	1719-06-8	0.025	%	85.0	102	----	----	----
4-Terphenyl-d14	1718-51-0	0.025	%	87.7	109	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	28	134
2-Chlorophenol-D4	93951-73-6	27	123
2.4.6-Tribromophenol	118-79-6	25	149
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	29	125
1.2-Dichlorobenzene-D4	2199-69-1	31	117
2-Fluorobiphenyl	321-60-8	44	136
Anthracene-d10	1719-06-8	53	133
4-Terphenyl-d14	1718-51-0	59	141

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2016520**	Page	: 1 of 13
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Contact	: Benjamin Comensoli
Address	: P O BOX 6079 Building 7, 570-588 Swan St RICHMOND VIC, AUSTRALIA 3122	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 8862 3500	Telephone	: +61-3-8549 9600
Project	: 20145767	Date Samples Received	: 22-Sep-2020
Order number	: Project Number 20145767	Date Analysis Commenced	: 23-Sep-2020
C-O-C number	: ----	Issue Date	: 29-Sep-2020
Sampler	: MGS		
Site	: Bill St		
Quote number	: EN/002		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3277476)									
EM2016402-063	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	34	37	9.19	0% - 50%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	13	12	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	11	12	9.03	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	44	46	3.98	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	19	20	6.76	No Limit
EM2016530-004	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	18	15	16.4	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	11	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	12	13	0.00	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	21	22	0.00	No Limit
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 3273224)									
EM2016518-001	Anonymous	EA001: pH (CaCl2)	----	0.1	pH Unit	7.4	7.5	1.34	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3276922)									
EM2016276-001	Anonymous	EA055: Moisture Content	----	0.1	%	8.0	8.5	5.60	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3276922) - continued									
EM2016540-002	Anonymous	EA055: Moisture Content	----	0.1	%	15.1	16.2	7.29	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3277477)									
EM2016402-063	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	0.00	No Limit
EM2016530-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.2	0.00	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 3277502)									
EM2016402-015	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM2016540-002	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 3277537)									
EM2016402-015	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EM2016450-054	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EK040T: Fluoride Total (QC Lot: 3277509)									
EM2016402-015	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	270	200	29.3	No Limit
EM2016450-054	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	220	240	6.99	No Limit
EK040T: Fluoride Total (QC Lot: 3277510)									
EM2016520-002	GA20-BH-HAW-01/2901 0.0-0.1	EK040T: Fluoride	16984-48-8	40	mg/kg	390	410	4.77	0% - 50%
EM2016542-009	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	100	110	13.7	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3276706)									
EM2016402-015	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3273221)									
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 3273221)									
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074I: Volatile Halogenated Compounds (QC Lot: 3273221)									
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074I: Volatile Halogenated Compounds (QC Lot: 3273221) - continued									
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 3276704)									
EM2016402-015	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 3276704)									
EM2016402-015	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 3276704) - continued									
EM2016402-015	Anonymous	EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3276704)									
EM2016402-015	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	2.0	0.8	82.5	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	0.9	<0.5	55.3	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	6.7	4.4	41.2	0% - 50%
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	7.0	4.6	42.4	0% - 50%
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	3.6	2.2	48.5	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	3.0	1.8	49.4	No Limit
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	4.1	2.4	52.9	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	1.8	1.1	51.1	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	2.0	1.2	50.8	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1	mg/kg	6.7	3.9	52.6	No Limit
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3276704) - continued									
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	1.2	0.5	71.0	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	2.8	1.6	53.5	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	2.8	1.8	43.5	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	1.7	0.9	57.4	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	1.6	0.9	53.0	No Limit
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	2.2	1.2	57.1	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	1.2	0.7	53.8	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	1.4	0.8	52.8	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1	mg/kg	3.4	1.9	56.0	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 3276704)									
EM2016402-015	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075I: Organochlorine Pesticides (QC Lot: 3276704) - continued									
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3273221)									
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3276705)									
EM2016402-015	Anonymous	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	120	<100	18.2	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3273221)									
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3276705)									
EM2016402-015	Anonymous	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	190	120	45.9	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	170	130	24.9	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3276705) - continued									
EM2016520-001	GA20-BH-HAW-12/2902 0.4-0.5	EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3277476)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	102	78.5	107
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	99.7	76.2	108
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	92.9	78.1	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	94.3	78.4	106
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	99.0	78.0	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	107	79.9	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	101	92.0	110
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.1 mg/kg	85.5	80.0	108
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.2 mg/kg	95.9	78.4	117
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	102	79.1	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3277477)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	102	76.9	110
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 3277502)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	20 mg/kg	91.2	70.0	130
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 3277537)								
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	20 mg/kg	86.3	70.0	130
EK040T: Fluoride Total (QCLot: 3277509)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	400 mg/kg	92.2	75.2	110
EK040T: Fluoride Total (QCLot: 3277510)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	400 mg/kg	87.2	75.2	110
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3276706)								
EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	97.5	70.8	136
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3273221)								
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	95.8	69.2	116
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	94.5	67.7	116
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	96.3	66.6	115
EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4.2 mg/kg	96.0	65.2	112
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	2.1 mg/kg	95.5	69.4	111
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	97.6	68.4	110
EP074H: Naphthalene (QCLot: 3273221)								
EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	0.6 mg/kg	90.8	72.3	114
EP074I: Volatile Halogenated Compounds (QCLot: 3273221)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low	Recovery Limits (%) High
EP074I: Volatile Halogenated Compounds (QCLot: 3273221) - continued								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	63.6	47.0	138
EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	99.2	57.6	125
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	101	72.3	115
EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	107	60.5	122
EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	101	70.3	112
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	97.0	66.6	115
EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	100	64.4	122
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	96.5	58.4	127
EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	93.9	72.9	114
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	90.0	64.7	115
EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	81.8	72.6	116
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	93.5	60.0	119
EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	83.0	71.8	116
EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	77.0	66.1	116
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	105	39.8	128
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	92.8	70.3	113
EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	89.4	62.6	113
EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	92.9	70.8	110
EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	104	48.4	120
EP075A: Phenolic Compounds (Halogenated) (QCLot: 3276704)								
EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	2 mg/kg	93.1	71.4	123
EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	2 mg/kg	86.4	73.1	132
EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	2 mg/kg	89.7	72.2	132
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	2 mg/kg	89.6	70.8	128
EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	2 mg/kg	93.1	70.9	134
EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	2 mg/kg	91.0	70.9	126
EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	2 mg/kg	90.0	61.9	126
EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	4 mg/kg	94.3	47.2	128
EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	4 mg/kg	92.1	44.0	135
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 3276704)								
EP075-EM: Phenol	108-95-2	1	mg/kg	<1	2 mg/kg	92.4	71.5	127
EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	2 mg/kg	89.3	70.2	129
EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	4 mg/kg	92.3	74.0	130
EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	2 mg/kg	82.2	70.9	133
EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	2 mg/kg	85.6	64.8	132
EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	10 mg/kg	56.2	41.0	156
EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	10 mg/kg	87.0	52.6	128
EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	10 mg/kg	78.5	42.6	125

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low	Recovery Limits (%) High
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 3276704) - continued								
EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	10 mg/kg	86.0	47.3	128
EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	1 mg/kg	118	34.5	137
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3276704)								
EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	2 mg/kg	94.3	73.0	131
EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	2 mg/kg	98.0	70.8	130
EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	2 mg/kg	94.9	72.0	135
EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	2 mg/kg	96.7	74.4	131
EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	2 mg/kg	95.3	73.3	130
EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	2 mg/kg	98.0	59.4	127
EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	2 mg/kg	99.9	75.3	132
EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	2 mg/kg	100	75.4	130
EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	2 mg/kg	101	69.6	133
EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	2 mg/kg	101	75.0	133
EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	1	mg/kg	<1.0	4 mg/kg	99.2	75.8	133
EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	2 mg/kg	97.7	65.1	130
EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	2 mg/kg	99.8	72.1	134
EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	2 mg/kg	98.6	72.9	135
EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	2 mg/kg	99.5	71.3	134
EP075I: Organochlorine Pesticides (QCLot: 3276704)								
EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	2 mg/kg	92.2	71.0	129
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	2 mg/kg	96.7	65.9	125
EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	2 mg/kg	94.4	66.2	130
EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	2 mg/kg	93.7	70.8	130
EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	2 mg/kg	93.9	68.7	134
EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	2 mg/kg	90.0	67.2	131
EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	2 mg/kg	90.5	70.2	130
EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	2 mg/kg	88.9	65.6	130
EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	2 mg/kg	91.0	65.3	133
EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	2 mg/kg	91.5	66.7	131
EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	2 mg/kg	93.9	67.9	135
EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	2 mg/kg	87.4	70.9	132
EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	2 mg/kg	92.1	70.0	133
EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	2 mg/kg	105	49.6	157
EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	2 mg/kg	63.5	55.4	148
EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	2 mg/kg	94.7	71.4	135
EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	2 mg/kg	98.5	74.8	134
EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	2 mg/kg	96.2	70.2	135
EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	2 mg/kg	95.2	67.1	133

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075I: Organochlorine Pesticides (QCLot: 3276704) - continued								
EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	2 mg/kg	100	63.6	135
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3273221)								
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	39.6 mg/kg	95.5	61.1	119
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3276705)								
EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	900 mg/kg	106	69.9	128
EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	3030 mg/kg	109	83.0	124
EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	1520 mg/kg	105	76.9	117
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3273221)								
EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	48.9 mg/kg	97.9	59.9	119
EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3276705)								
EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	1160 mg/kg	111	70.2	126
EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	4020 mg/kg	102	81.4	120
EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	280 mg/kg	128	53.4	129

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3277476)							
EM2016402-065	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	96.4	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.8	84.0	116
		EG005T: Copper	7440-50-8	250 mg/kg	95.2	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	94.6	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	98.4	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	94.8	80.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3277477)							
EM2016402-065	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	113	76.0	116
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 3277502)							
EM2016402-027	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	20 mg/kg	71.3	58.0	114
EM2016402-027	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	20 mg/kg	84.0	58.0	114
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 3277537)							
EM2016402-027	Anonymous	EK026SF: Total Cyanide	57-12-5	20 mg/kg	87.2	70.0	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%) Low	High
EK040T: Fluoride Total (QCLot: 3277510)							
EM2016536-002	Anonymous	EK040T: Fluoride	16984-48-8	400 mg/kg	87.8	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3276706)							
EM2016402-051	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	1 mg/kg	85.0	36.0	152
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3273221)							
EM2016520-002	GA20-BH-HAW-01/2901 0.0-0.1	EP074-UT: Benzene	71-43-2	2 mg/kg	98.2	50.0	138
		EP074-UT: Toluene	108-88-3	2 mg/kg	91.3	56.0	134
EP074I: Volatile Halogenated Compounds (QCLot: 3273221)							
EM2016520-002	GA20-BH-HAW-01/2901 0.0-0.1	EP074-UT: 1.1-Dichloroethene	75-35-4	2 mg/kg	106	26.0	141
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	91.6	50.0	134
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	91.0	28.0	134
EP075A: Phenolic Compounds (Halogenated) (QCLot: 3276704)							
EM2016402-027	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	3 mg/kg	51.1	34.0	118
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	3 mg/kg	44.9	41.0	139
		EP075-EM: Pentachlorophenol	87-86-5	3 mg/kg	38.3	10.0	144
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 3276704)							
EM2016402-027	Anonymous	EP075-EM: Phenol	108-95-2	3 mg/kg	51.1	31.5	134
		EP075-EM: 2-Nitrophenol	88-75-5	3 mg/kg	46.7	13.0	129
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3276704)							
EM2016402-027	Anonymous	EP075-EM: Acenaphthene	83-32-9	3 mg/kg	49.6	46.0	138
		EP075-EM: Pyrene	129-00-0	3 mg/kg	44.8	26.5	169
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3273221)							
EM2016520-002	GA20-BH-HAW-01/2901 0.0-0.1	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	81.7	43.0	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3276705)							
EM2016402-035	Anonymous	EP071-EM: C10 - C14 Fraction	----	900 mg/kg	97.2	53.0	123
		EP071-EM: C15 - C28 Fraction	----	3030 mg/kg	100	70.0	124
		EP071-EM: C29 - C36 Fraction	----	1520 mg/kg	96.7	64.0	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3273221)							
EM2016520-002	GA20-BH-HAW-01/2901 0.0-0.1	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	82.9	42.0	106
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3276705)							
EM2016402-035	Anonymous	EP071-EM: >C10 - C16 Fraction	----	1160 mg/kg	102	65.0	123
		EP071-EM: >C16 - C34 Fraction	----	4020 mg/kg	94.3	67.0	121
		EP071-EM: >C34 - C40 Fraction	----	280 mg/kg	117	44.0	126

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2016520**	Page	: 1 of 9
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Telephone	: +61-3-8549 9600
Project	: 20145767	Date Samples Received	: 22-Sep-2020
Site	: Bill St	Issue Date	: 29-Sep-2020
Sampler	: MGS	No. of samples received	: 2
Order number	: Project Number 20145767	No. of samples analysed	: 2

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EA001: pH in soil using 0.01M CaCl extract						
Soil Glass Jar - Unpreserved						
GA20-BH-HAW-12/2902 - 0.4-0.5	23-Sep-2020	18-Sep-2020	**5**	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved						
GA20-BH-HAW-12/2902 - 0.4-0.5	23-Sep-2020	18-Sep-2020	**5**	23-Sep-2020	18-Sep-2020	**5**
EP074H: Naphthalene						
Soil Glass Jar - Unpreserved						
GA20-BH-HAW-12/2902 - 0.4-0.5	23-Sep-2020	18-Sep-2020	**5**	23-Sep-2020	18-Sep-2020	**5**
EP074I: Volatile Halogenated Compounds						
Soil Glass Jar - Unpreserved						
GA20-BH-HAW-12/2902 - 0.4-0.5	23-Sep-2020	18-Sep-2020	**5**	23-Sep-2020	18-Sep-2020	**5**
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved						
GA20-BH-HAW-12/2902 - 0.4-0.5	23-Sep-2020	18-Sep-2020	**5**	23-Sep-2020	18-Sep-2020	**5**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						
Soil Glass Jar - Unpreserved						
GA20-BH-HAW-12/2902 - 0.4-0.5	23-Sep-2020	18-Sep-2020	**5**	23-Sep-2020	18-Sep-2020	**5**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Matrix Spikes (MS)					
Total Fluoride	1	39	2.56	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract							
Soil Glass Jar - Unpreserved (EA001) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**23-Sep-2020**	18-Sep-2020	×	**23-Sep-2020**	24-Sep-2020	✓
Soil Glass Jar - Unpreserved (EA001) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**23-Sep-2020**	24-Sep-2020	✓	**23-Sep-2020**	24-Sep-2020	✓
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**----**	----	----	**25-Sep-2020**	25-Sep-2020	✓
Soil Glass Jar - Unpreserved (EA055) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**----**	----	----	**25-Sep-2020**	01-Oct-2020	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**25-Sep-2020**	10-Mar-2021	✓	**25-Sep-2020**	10-Mar-2021	✓
Soil Glass Jar - Unpreserved (EG005T) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**25-Sep-2020**	16-Mar-2021	✓	**25-Sep-2020**	16-Mar-2021	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**25-Sep-2020**	09-Oct-2020	✓	**25-Sep-2020**	09-Oct-2020	✓
Soil Glass Jar - Unpreserved (EG035T) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**25-Sep-2020**	15-Oct-2020	✓	**25-Sep-2020**	15-Oct-2020	✓
EG048: Hexavalent Chromium (Alkaline Digest)							
Soil Glass Jar - Unpreserved (EG048G) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**26-Sep-2020**	09-Oct-2020	✓	**28-Sep-2020**	03-Oct-2020	✓
Soil Glass Jar - Unpreserved (EG048G) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**26-Sep-2020**	15-Oct-2020	✓	**28-Sep-2020**	03-Oct-2020	✓
EK026SF: Total CN by Segmented Flow Analyser							
Soil Glass Jar - Unpreserved (EK026SF) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**25-Sep-2020**	25-Sep-2020	✓	**28-Sep-2020**	09-Oct-2020	✓
Soil Glass Jar - Unpreserved (EK026SF) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**25-Sep-2020**	01-Oct-2020	✓	**28-Sep-2020**	09-Oct-2020	✓
EK040T: Fluoride Total							
Soil Glass Jar - Unpreserved (EK040T) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**26-Sep-2020**	09-Oct-2020	✓	**29-Sep-2020**	09-Oct-2020	✓
Soil Glass Jar - Unpreserved (EK040T) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**26-Sep-2020**	15-Oct-2020	✓	**29-Sep-2020**	15-Oct-2020	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066-EM) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**25-Sep-2020**	25-Sep-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
Soil Glass Jar - Unpreserved (EP066-EM) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**25-Sep-2020**	01-Oct-2020	✓	**25-Sep-2020**	04-Nov-2020	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074-UT) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**23-Sep-2020**	18-Sep-2020	×	**23-Sep-2020**	18-Sep-2020	×
Soil Glass Jar - Unpreserved (EP074-UT) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**23-Sep-2020**	24-Sep-2020	✓	**23-Sep-2020**	24-Sep-2020	✓
EP074H: Naphthalene							
Soil Glass Jar - Unpreserved (EP074-UT) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**23-Sep-2020**	18-Sep-2020	×	**23-Sep-2020**	18-Sep-2020	×
Soil Glass Jar - Unpreserved (EP074-UT) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**23-Sep-2020**	24-Sep-2020	✓	**23-Sep-2020**	24-Sep-2020	✓
EP074I: Volatile Halogenated Compounds							
Soil Glass Jar - Unpreserved (EP074-UT) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**23-Sep-2020**	18-Sep-2020	×	**23-Sep-2020**	18-Sep-2020	×
Soil Glass Jar - Unpreserved (EP074-UT) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**23-Sep-2020**	24-Sep-2020	✓	**23-Sep-2020**	24-Sep-2020	✓
EP075A: Phenolic Compounds (Halogenated)							
Soil Glass Jar - Unpreserved (EP075-EM) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**25-Sep-2020**	25-Sep-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
Soil Glass Jar - Unpreserved (EP075-EM) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**25-Sep-2020**	01-Oct-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
EP075A: Phenolic Compounds (Non-halogenated)							
Soil Glass Jar - Unpreserved (EP075-EM) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**25-Sep-2020**	25-Sep-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
Soil Glass Jar - Unpreserved (EP075-EM) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**25-Sep-2020**	01-Oct-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075-EM) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**25-Sep-2020**	25-Sep-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
Soil Glass Jar - Unpreserved (EP075-EM) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**25-Sep-2020**	01-Oct-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
EP075I: Organochlorine Pesticides							
Soil Glass Jar - Unpreserved (EP075-EM) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**25-Sep-2020**	25-Sep-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
Soil Glass Jar - Unpreserved (EP075-EM) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**25-Sep-2020**	01-Oct-2020	✓	**25-Sep-2020**	04-Nov-2020	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074-UT) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**23-Sep-2020**	18-Sep-2020	×	**23-Sep-2020**	18-Sep-2020	×
Soil Glass Jar - Unpreserved (EP071-EM) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**25-Sep-2020**	25-Sep-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
Soil Glass Jar - Unpreserved (EP074-UT) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**23-Sep-2020**	24-Sep-2020	✓	**23-Sep-2020**	24-Sep-2020	✓
Soil Glass Jar - Unpreserved (EP071-EM) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**25-Sep-2020**	01-Oct-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP074-UT) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**23-Sep-2020**	18-Sep-2020	×	**23-Sep-2020**	18-Sep-2020	×
Soil Glass Jar - Unpreserved (EP071-EM) GA20-BH-HAW-12/2902 - 0.4-0.5	**11-Sep-2020**	**25-Sep-2020**	25-Sep-2020	✓	**25-Sep-2020**	04-Nov-2020	✓
Soil Glass Jar - Unpreserved (EP074-UT) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**23-Sep-2020**	24-Sep-2020	✓	**23-Sep-2020**	24-Sep-2020	✓
Soil Glass Jar - Unpreserved (EP071-EM) GA20-BH-HAW-01/2901 - 0.0-0.1	**17-Sep-2020**	**25-Sep-2020**	01-Oct-2020	✓	**25-Sep-2020**	04-Nov-2020	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	2	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Total Fluoride	EK040T	1	39	**2.56**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl2 extract	EA001	SOIL	In house: Referenced to Rayment and Lyons 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511 / ISO 14403. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM Schedule B(3).
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071-EM	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
Volatile Organic Compounds - Ultra-trace	EP074-UT	SOIL	In house: Referenced to USEPA SW 846 - 8260 Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
Semivolatile Organic Compounds - Waste Classification	EP075-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)

Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
pH in soil using a 0.01M CaCl2 extract	EA001-PR	SOIL	In house: Referenced to Rayment and Lyons 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-EM	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2016520**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Contact	: Benjamin Comensoli
Address	: P O BOX 6079 Building 7, 570-588 Swan St RICHMOND VIC, AUSTRALIA 3122	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: gcontact@golder.com.au	E-mail	: benjamin.comensoli@alsglobal.com
Telephone	: +61 03 8862 3500	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 8862 3501	Facsimile	: +61-3-8549 9626
Project	: 20145767	Page	: 1 of 2
Order number	: Project Number 20145767	Quote number	: EM2017GOLASS0027 (EN/002/18 National BQ)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Bill St		
Sampler	: MGS		

Dates

Date Samples Received	: 22-Sep-2020 09:15	Issue Date	: 23-Sep-2020
Client Requested Due Date	: 29-Sep-2020	Scheduled Reporting Date	: **29-Sep-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 4.1°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample(s) received in non-ALS container(s).**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM2016520-001 : [11-Sep-2020] : GA20-BH-HAW-12/2902 - 0.4-0.5
EM2016520-002 : [17-Sep-2020] : GA20-BH-HAW-01/2901 - 0.0-0.1

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - EA055-103 Moisture Content	SOIL - P-16 IWRG 621
EM2016520-001	11-Sep-2020 00:00	GA20-BH-HAW-12/2902 ...	✓	✓
EM2016520-002	17-Sep-2020 00:00	GA20-BH-HAW-01/2901 ...	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL**

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

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EA001: pH in soil using a 0.01M CaCl2 extract							
GA20-BH-HAW-12/29	Soil Glass Jar - Unpreserved	18-Sep-2020	18-Sep-2020	22-Sep-2020	×	----	----
EP074-UT: Volatile Organic Compounds - Ultra-trace							
GA20-BH-HAW-12/29	Soil Glass Jar - Unpreserved	18-Sep-2020	18-Sep-2020	22-Sep-2020	×	----	----

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email — au_accountspayable@golder.com.au

ALL RESULTS

- *AU Certificate of Analysis - NATA (COA) — Email — MEL-ENVdata@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email — MEL-ENVdata@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email — MEL-ENVdata@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email — MEL-ENVdata@golder.com.au
- Chain of Custody (CoC) (COC) — Email — MEL-ENVdata@golder.com.au
- Chromatogram (CHROM) — Email — MEL-ENVdata@golder.com.au
- EDI Format - ESDAT (ESDAT) — Email — MEL-ENVdata@golder.com.au

MATTHEW SHEPPARD

- *AU Certificate of Analysis - NATA (COA) — Email — MSheppard@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email — MSheppard@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email — MSheppard@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email — MSheppard@golder.com.au
- Chain of Custody (CoC) (COC) — Email — MSheppard@golder.com.au
- Chromatogram (CHROM) — Email — MSheppard@golder.com.au
- EDI Format - ESDAT (ESDAT) — Email — MSheppard@golder.com.au

GA-BQ-035 SAMPLE CHAIN OF CUSTODY DOCUMENTATION - SOIL/ROCK

Sheet..... of.....

Project & Task Number: 20145767
Quote/Order No.:
Site Location: Bill St
Lab Name: ALS
Sampled By: MGS
Mobile No.:
Turnaround (Days): Standard
BY:
Report Format: ~~HARD~~ ☐ ~~FAX~~ ☐ EMAIL ☐ ELECTRONIC DATA FORMAT ☐

GOLDER ASSOCIATES PTY LTD
Phone: 0418504912
Invoice to be sent to au_accountspayable@golder.com.au
Fax
Project Manager: Matthew Sheppard
Contact Phone: 0418504912
Results To: Matthew Sheppard
Email: msheppard@golder.com.au
Email: msheppard@golder.com.au

GOLDER

3

Comments/Special Instructions:

Samples from a declared Fire Ant Area: No
Samples taken from a known Weed and or Pest Area: No

ANALYSIS REQUIRED

	SAMPLE ID	Depth	SAMPLE MATRIX	SAMPLE DATE	SAMPLE TIME	No. Containers	PRESERVATIVE	No CONTAINERS	POSSIBLE HIGH CONCENTRATION	IWRG 621 Suite	PFS (full suite)
1	GA20-BH-HAW-12/2902	0.4-0.5	S	11/09/2020		1		1		X	
2	GA20-BH-HAW-01/2901	0.0-0.1	S	17/09/2020		1		1		X	

Received: 22/9 9:15 Carrier: MGT
C/note:
Temp: 4.1 °C Seal: Y N
Ice / Icebricks / NA

ALS

Environmental Division
Melbourne
Work Order Reference
EM2016520
Telephone : +61-3-8549 9600

SAMPLE MATRIX = Soil/Sediment/Fill/Rock/Other
SAMPLE TYPE = Composite(C)/Discrete(DC)/Disturbed(DS)/Core(CR)
HIGH CONCENTRATION: Tick box and circle expected parameters in analysis list
Container Type and Preservative Codes: P = Natural Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Preserved Vial; VS = Sulphuric Acid

	SIGNATURE	COMPANY	DATE	TIME
RELEASED BY	Matthew Sheppard	GOLDER	21/09/2020	1400
RECEIVED BY				
RELEASED BY	Jake	EF	22/9	7am
RECEIVED BY				
RELEASED BY				
RECEIVED BY				

	SIGNATURE	COMPANY	DATE	TIME	Method of Shipment
RELEASED BY					Shipping Ref:
RECEIVED BY					

To Be Filled Out By Analysing Laboratory

Security Seal		Chilled		LAB. BATCH NUMBER	
Suitable Containers		Frozen		Bill to:	
Cool Box		Ambient		Address	

THIS FORM IS TO BE SIGNED BY GOLDER STAFF; COURIER/S; LABORATORY ON RECEIPT OF SAMPLES.

GA-BQ-035 / RL10
JULY 2018

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2017165**	Page	: 1 of 12
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Contact	: Benjamin Comensoli
Address	: P O BOX 6079 Building 7, 570-588 Swan St RICHMOND VIC, AUSTRALIA 3122	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 8862 3500	Telephone	: +61-3-8549 9600
Project	: 20145767	Date Samples Received	: 02-Oct-2020 09:10
Order number	: 20145767	Date Analysis Commenced	: 02-Oct-2020
C-O-C number	: ----	Issue Date	: 09-Oct-2020 17:48
Sampler	: TB		
Site	: Hawthorn		
Quote number	: EN/002		
No. of samples received	: 1		
No. of samples analysed	: 1		

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*
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Bronwyn Sheen	Assistant Laboratory Manager	Melbourne Organics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	GA20-BH10/59011020	----	----	----	----
			Client sampling date / time	01-Oct-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2017165-001	--------	--------	--------	--------
				Result	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.89**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**108**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	**0.001**	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.006**	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.038**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.032**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.06**	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.13**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.19**	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	GA20-BH10/59011020	----	----	----	----
			Client sampling date / time	01-Oct-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2017165-001	--------	--------	--------	--------
				Result	----	----	----	----
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	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	GA20-BH10/59011020	----	----	----	----
			Client sampling date / time	01-Oct-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2017165-001	--------	--------	--------	--------
				Result	----	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
1.2-Dibromo-3-chloropropane	96-12-8	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	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	----	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	**8**	----	----	----	----
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	----	----	----	----
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	**1.1**	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	**1.2**	----	----	----	----
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	**2.8**	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	**0.5**	----	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	----	----	----	----
2-Chlorophenol	95-57-8	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	GA20-BH10/59011020	----	----	----	----
			Client sampling date / time	01-Oct-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2017165-001	--------	--------	--------	--------
				Result	----	----	----	----
EP075A: Phenolic Compounds - Continued								
2-Methylphenol	95-48-7	2	µg/L	<2	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L	<2	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	----	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L	<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	<2	----	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	<2	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L	<2	----	----	----	----
Acenaphthene	83-32-9	2	µg/L	<2	----	----	----	----
Fluorene	86-73-7	2	µg/L	<2	----	----	----	----
Phenanthrene	85-01-8	2	µg/L	<2	----	----	----	----
Anthracene	120-12-7	2	µg/L	<2	----	----	----	----
Fluoranthene	206-44-0	2	µg/L	<2	----	----	----	----
Pyrene	129-00-0	2	µg/L	<2	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L	<2	----	----	----	----
Chrysene	218-01-9	2	µg/L	<2	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	<2	----	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	<2	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	----	----	----	----
^ Sum of PAHs	----	2	µg/L	<2	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	----	----	----	----
EP075C: Phthalate Esters								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	GA20-BH10/59011020	----	----	----	----
			Client sampling date / time	01-Oct-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2017165-001	--------	--------	--------	--------
				Result	----	----	----	----
EP075C: Phthalate Esters - Continued								
Dimethyl phthalate	131-11-3	2	µg/L	<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	----	----	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	----	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L	<2	----	----	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	----	----	----	----
Acetophenone	98-86-2	2	µg/L	<2	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L	<2	----	----	----	----
Isophorone	78-59-1	2	µg/L	<2	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	<2	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	----	----	----	----
Azobenzene	103-33-3	2	µg/L	<2	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	----	----	----	----
Phenacetin	62-44-2	2	µg/L	<2	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	<2	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	----	----	----	----
Pronamide	23950-58-5	2	µg/L	<2	----	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	GA20-BH10/59011020	----	----	----	----
			Client sampling date / time	01-Oct-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2017165-001	--------	--------	--------	--------
				Result	----	----	----	----
EP075E: Nitroaromatics and Ketones - Continued								
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	----	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	----	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L	<2	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	<2	----	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	<2	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L	<2	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	----	----	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L	<2	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L	<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L	<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L	<2	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L	<2	----	----	----	----
Carbazole	86-74-8	2	µg/L	<2	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	----	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	----	----	----	----
beta-BHC	319-85-7	2	µg/L	<2	----	----	----	----
gamma-BHC	58-89-9	2	µg/L	<2	----	----	----	----
delta-BHC	319-86-8	2	µg/L	<2	----	----	----	----
Heptachlor	76-44-8	2	µg/L	<2	----	----	----	----
Aldrin	309-00-2	2	µg/L	<2	----	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L	<2	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L	<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	GA20-BH10/59011020	----	----	----	----
			Client sampling date / time	01-Oct-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2017165-001	--------	--------	--------	--------
				Result	----	----	----	----
EP075I: Organochlorine Pesticides - Continued								
4.4`-DDE	72-55-9	2	µg/L	<2	----	----	----	----
Dieldrin	60-57-1	2	µg/L	<2	----	----	----	----
Endrin	72-20-8	2	µg/L	<2	----	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L	<2	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L	<2	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L	<2	----	----	----	----
4.4`-DDT	50-29-3	4	µg/L	<4	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L	<4	----	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	----	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	----	----	----	----
Diazinon	333-41-5	2	µg/L	<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	----	----	----	----
Malathion	121-75-5	2	µg/L	<2	----	----	----	----
Fenthion	55-38-9	2	µg/L	<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	----	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	----	----	----	----
Ethion	563-12-2	2	µg/L	<2	----	----	----	----
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	**100**	----	----	----	----
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	**120**	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	GA20-BH10/59011020	----	----	----	----
			Client sampling date / time	01-Oct-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2017165-001	--------	--------	--------	--------
				Result	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C40 Fraction (sum)	----	100	µg/L	**120**	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
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	%	**96.0**	----	----	----	----
Toluene-D8	2037-26-5	5	%	**101**	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%	**103**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**13.9**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**48.6**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**93.2**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	**73.8**	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%	**69.6**	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	**72.0**	----	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	2	%	**24.5**	----	----	----	----
Phenol-d6	13127-88-3	2	%	**11.8**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%	**52.4**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%	**83.7**	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	2	%	**71.2**	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%	**57.6**	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	**68.4**	----	----	----	----
Anthracene-d10	1719-06-8	2	%	**75.5**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	GA20-BH10/59011020	----	----	----	----
			Client sampling date / time	01-Oct-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2017165-001	--------	--------	--------	--------
				Result	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates - Continued								
4-Terphenyl-d14	1718-51-0	2	%	108	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	106	----	----	----	----
Toluene-D8	2037-26-5	2	%	99.9	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	104	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2.4.6-Tribromophenol	118-79-6	28	130
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	75
Phenol-d6	13127-88-3	10	65
2-Chlorophenol-D4	93951-73-6	21	103
2.4.6-Tribromophenol	118-79-6	22	120
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	24	116
1.2-Dichlorobenzene-D4	2199-69-1	23	99
2-Fluorobiphenyl	321-60-8	32	114
Anthracene-d10	1719-06-8	47	119
4-Terphenyl-d14	1718-51-0	44	124
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM2017165**	Page	: 1 of 17
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Contact	: Benjamin Comensoli
Address	: P O BOX 6079 Building 7, 570-588 Swan St RICHMOND VIC, AUSTRALIA 3122	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 8862 3500	Telephone	: +61-3-8549 9600
Project	: 20145767	Date Samples Received	: 02-Oct-2020
Order number	: 20145767	Date Analysis Commenced	: 02-Oct-2020
C-O-C number	: ----	Issue Date	: 09-Oct-2020
Sampler	: TB		
Site	: Hawthorn		
Quote number	: EN/002		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Bronwyn Sheen	Assistant Laboratory Manager	Melbourne Organics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA005P: pH by PC Titrator (QC Lot: 3289589)									
EM2017153-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.93	6.88	0.666	0% - 20%
EM2017163-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	4.78	4.73	1.09	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 3290318)									
EM2017170-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	35	34	3.38	0% - 20%
EM2016359-006	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	67800	69600	2.61	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3291143)									
EM2017205-012	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.007	0.008	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.076	0.076	0.00	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.023	0.022	0.00	No Limit
EM2017029-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0004	0.0004	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.070	0.071	1.76	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.026	0.025	0.00	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.141	0.144	2.46	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 3291142)									
EM2017264-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM2017029-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 3290317)									

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 3290317) - continued									
EM2017170-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM2016359-006	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	11.4	10.6	7.54	0% - 50%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 3290594)									
EM2017156-020	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.01	0.00	No Limit
EM2017163-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	1.45	1.25	15.2	0% - 20%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3291634)									
EM2017170-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 3291634)									
EM2017170-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 3291634)									
EM2017170-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.00	No Limit
EP074D: Fumigants (QC Lot: 3291634)									
EM2017170-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3291634)									
EM2017170-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3291634) - continued									
EM2017170-001	Anonymous	EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 3291634)									
EM2017170-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 3291634)									
EM2017170-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3290781)									
EM2017170-001	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3290781) - continued									
EM2017170-001	Anonymous	EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit
EP075A: Phenolic Compounds (QC Lot: 3290786)									
EM2017170-001	Anonymous	EP075: Phenol	108-95-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<4	<4	0.00	No Limit
		EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	<2	0.00	No Limit
		EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	<2	0.00	No Limit
		EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	<4	0.00	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3290786)									
EM2017170-001	Anonymous	EP075: Naphthalene	91-20-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: Acenaphthylene	208-96-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: Acenaphthene	83-32-9	2	µg/L	<2	<2	0.00	No Limit
		EP075: Fluorene	86-73-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: Phenanthrene	85-01-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: Anthracene	120-12-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: Fluoranthene	206-44-0	2	µg/L	<2	<2	0.00	No Limit
		EP075: Pyrene	129-00-0	2	µg/L	<2	<2	0.00	No Limit
		EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: Chrysene	218-01-9	2	µg/L	<2	<2	0.00	No Limit
		EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	<2	0.00	No Limit
		EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	<2	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
				Laboratory Duplicate (DUP) Report					
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3290786) - continued									
EM2017170-001	Anonymous	EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	<4	0.00	No Limit
EP075C: Phthalate Esters (QC Lot: 3290786)									
EM2017170-001	Anonymous	EP075: bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	0.00	No Limit
EM2017170-001	Anonymous	EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	0.00	No Limit
EP075D: Nitrosamines (QC Lot: 3290786)									
EM2017170-001	Anonymous	EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	0.00	No Limit
		EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	0.00	No Limit
		EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: Methapyrilene	91-80-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	0.00	No Limit
		EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	0.00	No Limit
EP075E: Nitroaromatics and Ketones (QC Lot: 3290786)									
EM2017170-001	Anonymous	EP075: 2-Picoline	109-06-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: Acetophenone	98-86-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: Nitrobenzene	98-95-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: Isophorone	78-59-1	2	µg/L	<2	<2	0.00	No Limit
		EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: Azobenzene	103-33-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	0.00	No Limit
		EP075: Phenacetin	62-44-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	0.00	No Limit
		EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: Pronamide	23950-58-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	0.00	No Limit
		EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	0.00	No Limit
EP075F: Haloethers (QC Lot: 3290786)									
EM2017170-001	Anonymous	EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075F: Haloethers (QC Lot: 3290786) - continued									
EM2017170-001	Anonymous	EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	0.00	No Limit
		EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	0.00	No Limit
EP075G: Chlorinated Hydrocarbons (QC Lot: 3290786)									
EM2017170-001	Anonymous	EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	0.00	No Limit
		EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	0.00	No Limit
		EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	0.00	No Limit
		EP075: Hexachloroethane	67-72-1	2	µg/L	<2	<2	0.00	No Limit
		EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	0.00	No Limit
		EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	0.00	No Limit
EP075H: Anilines and Benzidines (QC Lot: 3290786)									
EM2017170-001	Anonymous	EP075: Aniline	62-53-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: Dibenzofuran	132-64-9	2	µg/L	<2	<2	0.00	No Limit
		EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	<2	0.00	No Limit
		EP075: Carbazole	86-74-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	0.00	No Limit
		EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	<4	0.00	No Limit
		EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	<4	0.00	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 3290786)									
EM2017170-001	Anonymous	EP075: alpha-BHC	319-84-6	2	µg/L	<2	<2	0.00	No Limit
		EP075: beta-BHC	319-85-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: gamma-BHC	58-89-9	2	µg/L	<2	<2	0.00	No Limit
		EP075: delta-BHC	319-86-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: Heptachlor	76-44-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: Aldrin	309-00-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	0.00	No Limit
		EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	<2	0.00	No Limit
		EP075: Dieldrin	60-57-1	2	µg/L	<2	<2	0.00	No Limit
		EP075: Endrin	72-20-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	0.00	No Limit
		EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	0.00	No Limit
		EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	<4	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075J: Organophosphorus Pesticides (QC Lot: 3290786)									
EM2017170-001	Anonymous	EP075: Dichlorvos	62-73-7	2	µg/L	<2	<2	0.00	No Limit
		EP075: Dimethoate	60-51-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: Diazinon	333-41-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	0.00	No Limit
		EP075: Malathion	121-75-5	2	µg/L	<2	<2	0.00	No Limit
		EP075: Fenthion	55-38-9	2	µg/L	<2	<2	0.00	No Limit
		EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	0.00	No Limit
		EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	0.00	No Limit
		EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	0.00	No Limit
		EP075: Prothiofos	34643-46-4	2	µg/L	<2	<2	0.00	No Limit
		EP075: Ethion	563-12-2	2	µg/L	<2	<2	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3290784)									
EM2017170-001	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3291635)									
EM2017205-015	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM2017170-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3290784)									
EM2017170-001	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3291635)									
EM2017205-015	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM2017170-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 3291635)									
EM2017205-015	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM2017170-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 3291635) - continued									
EM2017170-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3290318)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	99.5	85.8	117
				<1	500 mg/L	104	80.0	120
EG020F: Dissolved Metals by ICP-MS (QCLot: 3291143)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.5	88.5	108
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.9	83.5	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	100	83.2	105
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.8	83.1	106
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.0	84.6	107
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.8	84.3	108
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	103	86.3	111
EG035F: Dissolved Mercury by FIMS (QCLot: 3291142)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.5	71.1	112
EK057G: Nitrite as N by Discrete Analyser (QCLot: 3290317)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	103	90.9	112
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 3290594)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	104	90.0	117
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3291634)								
EP074: Styrene	100-42-5	5	µg/L	<5	20 µg/L	108	80.4	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	20 µg/L	112	75.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	20 µg/L	# 119	68.7	114
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	20 µg/L	114	72.1	114
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	20 µg/L	109	69.6	115
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	20 µg/L	111	72.4	113
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	20 µg/L	106	72.6	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	20 µg/L	108	69.2	115
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	20 µg/L	108	61.4	115
EP074B: Oxygenated Compounds (QCLot: 3291634)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	200 µg/L	85.2	71.3	125
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	200 µg/L	82.5	66.4	132
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	200 µg/L	85.1	75.2	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	200 µg/L	92.2	73.9	131
EP074C: Sulfonated Compounds (QCLot: 3291634)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	20 µg/L	117	58.2	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP074D: Fumigants (QCLot: 3291634)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	20 µg/L	107	68.7	120
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	20 µg/L	99.4	79.6	116
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	20 µg/L	96.2	76.2	114
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	20 µg/L	97.2	77.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	20 µg/L	102	80.1	118
EP074E: Halogenated Aliphatic Compounds (QCLot: 3291634)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	200 µg/L	107	53.4	140
EP074: Chloromethane	74-87-3	50	µg/L	<50	200 µg/L	112	63.8	134
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	200 µg/L	106	57.1	135
EP074: Bromomethane	74-83-9	50	µg/L	<50	200 µg/L	109	51.1	126
EP074: Chloroethane	75-00-3	50	µg/L	<50	200 µg/L	106	64.9	129
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	200 µg/L	108	65.7	127
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	20 µg/L	107	67.4	123
EP074: Iodomethane	74-88-4	5	µg/L	<5	20 µg/L	91.1	30.9	126
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	20 µg/L	109	69.2	119
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	20 µg/L	104	76.7	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	20 µg/L	104	78.9	118
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	20 µg/L	104	69.2	120
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	20 µg/L	103	67.0	120
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	20 µg/L	104	63.7	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	20 µg/L	95.6	82.0	116
EP074: Trichloroethene	79-01-6	5	µg/L	<5	20 µg/L	103	72.9	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	20 µg/L	97.5	81.0	116
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	20 µg/L	104	84.9	118
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	20 µg/L	101	83.4	119
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	20 µg/L	117	70.4	118
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	20 µg/L	103	77.9	113
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	20 µg/L	94.3	72.6	122
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	20 µg/L	90.8	67.8	119
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	20 µg/L	96.9	83.0	125
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	20 µg/L	98.0	82.4	123
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	20 µg/L	101	72.7	111
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	20 µg/L	104	75.4	114
EP074F: Halogenated Aromatic Compounds (QCLot: 3291634)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	20 µg/L	111	81.7	116
EP074: Bromobenzene	108-86-1	5	µg/L	<5	20 µg/L	114	75.2	118
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	20 µg/L	# 118	75.0	114
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	20 µg/L	# 116	72.8	113
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	20 µg/L	110	75.5	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074G: Trihalomethanes (QCLot: 3291634)								
EP074: Chloroform	67-66-3	5	µg/L	<5	20 µg/L	101	80.4	118
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	20 µg/L	95.6	78.6	115
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	20 µg/L	100	77.7	113
EP074: Bromoform	75-25-2	5	µg/L	<5	20 µg/L	96.3	74.2	113
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3290781)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	81.5	41.1	116
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	87.1	47.2	121
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	86.8	47.3	118
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	88.4	49.4	121
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	91.3	52.5	124
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	90.8	52.3	125
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	96.3	52.4	127
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	96.9	51.3	130
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	97.2	50.0	130
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	97.8	49.6	131
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	97.9	51.5	132
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	100	54.0	131
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	98.8	52.3	133
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	96.8	50.4	127
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	96.6	50.0	127
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	98.0	50.8	128
EP075A: Phenolic Compounds (QCLot: 3290786)								
EP075: Phenol	108-95-2	2	µg/L	<2	10 µg/L	40.4	19.6	48.4
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	82.1	45.4	100
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	10 µg/L	84.1	41.6	93.8
EP075: 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2	10 µg/L	74.0	36.3	89.8
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	10 µg/L	93.4	46.4	110
EP075: 2.4-Dimethylphenol	105-67-9	2	µg/L	<2	10 µg/L	90.3	48.6	108
EP075: 2.4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	93.2	49.3	109
EP075: 2.6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	89.3	50.6	108
EP075: 4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	10 µg/L	83.3	48.6	110
EP075: 2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	84.8	45.9	113
EP075: 2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	81.7	46.0	113
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	10 µg/L	87.0	14.2	121
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3290786)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	10 µg/L	91.0	52.2	109
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	10 µg/L	111	52.2	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low	Recovery Limits (%) High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3290786) - continued								
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	10 µg/L	93.8	50.9	113
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	10 µg/L	108	53.3	113
EP075: Acenaphthene	83-32-9	2	µg/L	<2	10 µg/L	92.8	53.1	112
EP075: Fluorene	86-73-7	2	µg/L	<2	10 µg/L	93.0	56.0	113
EP075: Phenanthrene	85-01-8	2	µg/L	<2	10 µg/L	90.2	58.2	115
EP075: Anthracene	120-12-7	2	µg/L	<2	10 µg/L	85.6	57.8	115
EP075: Fluoranthene	206-44-0	2	µg/L	<2	10 µg/L	85.5	57.2	117
EP075: Pyrene	129-00-0	2	µg/L	<2	10 µg/L	87.2	52.3	119
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	10 µg/L	94.1	52.2	122
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	10 µg/L	90.2	56.2	118
EP075: Chrysene	218-01-9	2	µg/L	<2	10 µg/L	84.5	56.9	119
EP075: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	20 µg/L	95.7	56.9	115
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	10 µg/L	94.7	55.7	122
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	10 µg/L	96.5	56.2	116
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	10 µg/L	96.4	51.6	121
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	10 µg/L	77.9	55.6	114
EP075: Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	10 µg/L	96.6	55.5	115
EP075: Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	10 µg/L	94.1	53.5	116
EP075C: Phthalate Esters (QCLot: 3290786)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	92.9	56.4	114
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	98.0	58.1	114
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	89.1	61.7	120
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	86.8	57.3	119
EP075: bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	10 µg/L	79.8	57.8	114
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	95.7	58.4	115
EP075D: Nitrosamines (QCLot: 3290786)								
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	10 µg/L	66.3	23.9	106
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	10 µg/L	95.0	43.7	109
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	10 µg/L	73.4	36.9	81.9
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	10 µg/L	68.7	33.8	79.9
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	10 µg/L	102	51.6	113
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	10 µg/L	94.6	48.9	110
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	10 µg/L	73.8	51.8	115
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	10 µg/L	97.1	55.7	113
EP075: Methapyrilene	91-80-5	2	µg/L	<2	10 µg/L	29.3	10.0	147
EP075E: Nitroaromatics and Ketones (QCLot: 3290786)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075E: Nitroaromatics and Ketones (QCLot: 3290786) - continued								
EP075: 2-Picoline	109-06-8	2	µg/L	<2	10 µg/L	62.8	18.8	106
EP075: Acetophenone	98-86-2	2	µg/L	<2	10 µg/L	96.8	52.2	110
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	10 µg/L	98.7	48.9	110
EP075: Isophorone	78-59-1	2	µg/L	<2	10 µg/L	95.2	52.7	111
EP075: 2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	10 µg/L	115	53.8	115
EP075: 2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	10 µg/L	96.4	53.2	113
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	10 µg/L	92.8	10.9	119
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	10 µg/L	83.6	27.3	148
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	10 µg/L	99.8	49.3	119
EP075: Azobenzene	103-33-3	2	µg/L	<2	10 µg/L	94.0	55.4	114
EP075: 1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	10 µg/L	90.2	38.2	122
EP075: Phenacetin	62-44-2	2	µg/L	<2	10 µg/L	87.5	45.5	104
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	10 µg/L	112	24.0	149
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	10 µg/L	96.1	54.0	114
EP075: Pronamide	23950-58-5	2	µg/L	<2	10 µg/L	101	58.8	116
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	10 µg/L	89.2	52.6	117
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	10 µg/L	84.9	55.9	118
EP075F: Haloethers (QCLot: 3290786)								
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	10 µg/L	93.7	48.0	109
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	10 µg/L	93.4	51.8	111
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	10 µg/L	95.1	55.5	113
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	10 µg/L	95.2	54.1	114
EP075G: Chlorinated Hydrocarbons (QCLot: 3290786)								
EP075: 1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	10 µg/L	88.7	45.6	105
EP075: 1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	10 µg/L	82.6	45.5	104
EP075: 1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	10 µg/L	92.5	46.4	106
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	10 µg/L	85.3	43.8	106
EP075: 1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	10 µg/L	87.0	45.9	109
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	10 µg/L	85.8	41.8	112
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	10 µg/L	84.1	47.8	110
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	10 µg/L	111	13.3	129
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	10 µg/L	94.0	53.6	112
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	10 µg/L	95.7	54.8	114
EP075H: Anilines and Benzidines (QCLot: 3290786)								
EP075: Aniline	62-53-3	2	µg/L	<2	10 µg/L	83.1	30.2	108
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	10 µg/L	88.0	14.5	126
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	10 µg/L	108	50.8	111
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	10 µg/L	88.6	34.2	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075H: Anilines and Benzidines (QCLot: 3290786) - continued								
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	10 µg/L	96.0	55.3	112
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	10 µg/L	100	40.9	116
EP075: Carbazole	86-74-8	2	µg/L	<2	10 µg/L	90.7	57.1	118
EP075: 3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	10 µg/L	106	50.2	137
EP075I: Organochlorine Pesticides (QCLot: 3290786)								
EP075: alpha-BHC	319-84-6	2	µg/L	<2	10 µg/L	95.9	55.6	114
EP075: beta-BHC	319-85-7	2	µg/L	<2	10 µg/L	102	55.2	115
EP075: gamma-BHC	58-89-9	2	µg/L	<2	10 µg/L	94.0	56.0	115
EP075: delta-BHC	319-86-8	2	µg/L	<2	10 µg/L	85.3	56.3	117
EP075: Heptachlor	76-44-8	2	µg/L	<2	10 µg/L	83.1	54.1	117
EP075: Aldrin	309-00-2	2	µg/L	<2	10 µg/L	84.5	54.4	117
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	10 µg/L	85.1	53.9	119
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	10 µg/L	70.8	55.8	120
EP075: 4.4`-DDE	72-55-9	2	µg/L	<2	10 µg/L	86.7	56.7	121
EP075: Dieldrin	60-57-1	2	µg/L	<2	10 µg/L	86.7	55.6	118
EP075: Endrin	72-20-8	2	µg/L	<2	10 µg/L	88.5	51.8	121
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	10 µg/L	86.4	55.3	119
EP075: 4.4`-DDD	72-54-8	2	µg/L	<2	10 µg/L	87.3	56.4	120
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	10 µg/L	90.6	51.8	125
EP075: 4.4`-DDT	50-29-3	4	µg/L	<4	10 µg/L	89.0	42.7	127
EP075J: Organophosphorus Pesticides (QCLot: 3290786)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	10 µg/L	94.3	53.5	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	10 µg/L	88.6	40.5	110
EP075: Diazinon	333-41-5	2	µg/L	<2	10 µg/L	99.5	57.9	118
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	10 µg/L	88.0	54.9	118
EP075: Malathion	121-75-5	2	µg/L	<2	10 µg/L	91.3	56.3	126
EP075: Fenthion	55-38-9	2	µg/L	<2	10 µg/L	86.4	56.1	119
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	10 µg/L	88.4	57.1	118
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	10 µg/L	86.4	57.4	118
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	10 µg/L	87.4	52.1	122
EP075: Prothiofos	34643-46-4	2	µg/L	<2	10 µg/L	85.4	56.8	118
EP075: Ethion	563-12-2	2	µg/L	<2	10 µg/L	93.2	56.4	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3290784)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	4600 µg/L	85.6	44.8	125
EP071: C15 - C28 Fraction	----	100	µg/L	<100	16100 µg/L	94.6	51.3	135
EP071: C29 - C36 Fraction	----	50	µg/L	<50	8130 µg/L	92.2	49.4	134
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3291635)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	94.3	65.5	129

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3290784)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	6070 µg/L	99.6	47.3	129
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	21200 µg/L	91.4	50.4	133
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	97.4	45.2	136
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3291635)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	97.5	64.3	126
EP080: BTEXN (QCLot: 3291635)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	99.1	69.8	124
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	106	73.6	126
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	104	72.0	126
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	104	71.5	132
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	104	76.5	132
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	107	70.5	127

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3290318)							
EM2016359-011	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10000 mg/L	# Not Determined	70.0	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 3291143)							
EM2017029-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	103	85.0	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	94.8	81.0	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	95.2	71.0	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	95.0	76.0	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	89.6	75.0	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	96.4	73.0	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	95.6	75.0	131
EG035F: Dissolved Mercury by FIMS (QCLot: 3291142)							
EM2017029-002	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	79.5	70.0	120
EK057G: Nitrite as N by Discrete Analyser (QCLot: 3290317)							
EM2017170-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	94.3	80.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 3290594)							

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%) Low	High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 3290594) - continued							
EM2017156-023	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	91.2	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3291634)							
EM2017170-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	20 µg/L	71.2	40.0	124
		EP074: Trichloroethene	79-01-6	20 µg/L	85.2	54.0	126
EP074F: Halogenated Aromatic Compounds (QCLot: 3291634)							
EM2017170-002	Anonymous	EP074: Chlorobenzene	108-90-7	20 µg/L	111	68.0	132
EP075A: Phenolic Compounds (QCLot: 3290786)							
EM2017170-001	Anonymous	EP075: Phenol	108-95-2	10 µg/L	35.3	10.0	55.0
		EP075: 2-Chlorophenol	95-57-8	10 µg/L	77.0	26.1	105
		EP075: 2-Nitrophenol	88-75-5	10 µg/L	75.7	26.8	105
		EP075: 4-Chloro-3-methylphenol	59-50-7	10 µg/L	69.0	40.0	98.0
		EP075: Pentachlorophenol	87-86-5	10 µg/L	54.7	48.0	142
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3290786)							
EM2017170-001	Anonymous	EP075: Acenaphthene	83-32-9	10 µg/L	82.1	42.0	106
		EP075: Pyrene	129-00-0	10 µg/L	90.4	49.0	119
EP075D: Nitrosamines (QCLot: 3290786)							
EM2017170-001	Anonymous	EP075: N-Nitrosodi-n-propylamine	621-64-7	10 µg/L	82.1	19.0	103
EP075E: Nitroaromatics and Ketones (QCLot: 3290786)							
EM2017170-001	Anonymous	EP075: 2.4-Dinitrotoluene	121-14-2	10 µg/L	69.5	39.0	105
EP075G: Chlorinated Hydrocarbons (QCLot: 3290786)							
EM2017170-001	Anonymous	EP075: 1.4-Dichlorobenzene	106-46-7	10 µg/L	75.4	39.0	99.0
		EP075: 1.2.4-Trichlorobenzene	120-82-1	10 µg/L	72.6	29.0	90.0
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3291635)							
EM2017170-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	63.3	43.0	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3291635)							
EM2017170-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	61.1	44.0	122
EP080: BTEXN (QCLot: 3291635)							
EM2017170-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	83.5	68.0	130
		EP080: Toluene	108-88-3	20 µg/L	92.2	72.0	132

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2017165**	Page	: 1 of 9
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Telephone	: +61-3-8549 9600
Project	: 20145767	Date Samples Received	: 02-Oct-2020
Site	: Hawthorn	Issue Date	: 09-Oct-2020
Sampler	: TB	No. of samples received	: 1
Order number	: 20145767	No. of samples analysed	: 1

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP074A: Monocyclic Aromatic Hydrocarbons	QC-3291634-001	----	**n-Propylbenzene**	103-65-1	119 %	68.7-114%	**Recovery greater than upper control limit**
EP074F: Halogenated Aromatic Compounds	QC-3291634-001	----	**2-Chlorotoluene**	95-49-8	118 %	75.0-114%	**Recovery greater than upper control limit**
EP074F: Halogenated Aromatic Compounds	QC-3291634-001	----	**4-Chlorotoluene**	106-43-4	116 %	72.8-113%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM2016359--011	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural						
GA20-BH10/59011020	----	----	----	03-Oct-2020	01-Oct-2020	**2**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
TRH - Semivolatile Fraction	1	19	5.26	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	19	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

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

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

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

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

Matrix: **WATER**

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

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
GA20-BH10/59011020	**01-Oct-2020**	**----**	----	----	**03-Oct-2020**	01-Oct-2020	×
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G)							
GA20-BH10/59011020	**01-Oct-2020**	**----**	----	----	**03-Oct-2020**	29-Oct-2020	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
GA20-BH10/59011020	**01-Oct-2020**	**----**	----	----	**05-Oct-2020**	30-Mar-2021	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
GA20-BH10/59011020	**01-Oct-2020**	**----**	----	----	**05-Oct-2020**	29-Oct-2020	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
GA20-BH10/59011020	**01-Oct-2020**	**----**	----	----	**02-Oct-2020**	03-Oct-2020	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
GA20-BH10/59011020	**01-Oct-2020**	**----**	----	----	**05-Oct-2020**	29-Oct-2020	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Clear glass VOC vial - HCl (EP074)							
GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	15-Oct-2020	✓	**06-Oct-2020**	15-Oct-2020	✓
EP074B: Oxygenated Compounds							
Clear glass VOC vial - HCl (EP074)							
GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	15-Oct-2020	✓	**06-Oct-2020**	15-Oct-2020	✓
EP074C: Sulfonated Compounds							
Clear glass VOC vial - HCl (EP074)							
GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	15-Oct-2020	✓	**06-Oct-2020**	15-Oct-2020	✓
EP074D: Fumigants							
Clear glass VOC vial - HCl (EP074)							
GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	15-Oct-2020	✓	**06-Oct-2020**	15-Oct-2020	✓
EP074E: Halogenated Aliphatic Compounds							
Clear glass VOC vial - HCl (EP074)							
GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	15-Oct-2020	✓	**06-Oct-2020**	15-Oct-2020	✓
EP074F: Halogenated Aromatic Compounds							
Clear glass VOC vial - HCl (EP074)							
GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	15-Oct-2020	✓	**06-Oct-2020**	15-Oct-2020	✓
EP074G: Trihalomethanes							
Clear glass VOC vial - HCl (EP074)							
GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	15-Oct-2020	✓	**06-Oct-2020**	15-Oct-2020	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
Clear glass VOC vial - HCl (EP080) GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	15-Oct-2020	✓	**06-Oct-2020**	15-Oct-2020	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	08-Oct-2020	✓	**07-Oct-2020**	14-Nov-2020	✓
Clear glass VOC vial - HCl (EP080)							
GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	15-Oct-2020	✓	**06-Oct-2020**	15-Oct-2020	✓
EP080: BTEXN							
Clear glass VOC vial - HCl (EP080)							
GA20-BH10/59011020	**01-Oct-2020**	**05-Oct-2020**	15-Oct-2020	✓	**06-Oct-2020**	15-Oct-2020	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	2	5	40.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	2	5	40.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	19	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2017165**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Melbourne
Contact	: GOLDER CONTACT	Contact	: Benjamin Comensoli
Address	: P O BOX 6079 Building 7, 570-588 Swan St RICHMOND VIC, AUSTRALIA 3122	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: gcontact@golder.com.au	E-mail	: benjamin.comensoli@alsglobal.com
Telephone	: +61 03 8862 3500	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 8862 3501	Facsimile	: +61-3-8549 9626
Project	: 20145767	Page	: 1 of 2
Order number	: 20145767	Quote number	: EM2017GOLASS0027 (EN/002)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Hawthorn		
Sampler	: TB		

Dates

Date Samples Received	: 02-Oct-2020 09:10	Issue Date	: 02-Oct-2020
Client Requested Due Date	: 09-Oct-2020	Scheduled Reporting Date	: **09-Oct-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 4.1°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample(s) received in non-ALS container(s).**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EA005P pH (PCT)	WATER - ED041G Sulfate (Turbidimetric) as SO4 2 by Discrete	WATER - EK058G Nitrate as N by Discrete Analyser	WATER - W-23 minus BTEX SVOC/VOC without BTEX	WATER - W-26 TRH/BTEXN/PAH/8 Metals
EM2017165-001	01-Oct-2020 00:00	GA20-BH10/59011020	✓	✓	✓	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

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

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EA005-P: pH by PC Titrator							
GA20-BH10/5901102	Clear Plastic Bottle - Natural	----	01-Oct-2020	02-Oct-2020	×	----	----

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

ALL RESULTS

- *AU Certificate of Analysis - NATA (COA)	Email	MEL-ENVdata@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	MEL-ENVdata@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	MEL-ENVdata@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	MEL-ENVdata@golder.com.au
- Chain of Custody (CoC) (COC)	Email	MEL-ENVdata@golder.com.au
- Chromatogram (CHROM)	Email	MEL-ENVdata@golder.com.au
- EDI Format - ESDAT (ESDAT)	Email	MEL-ENVdata@golder.com.au

MATTHEW SHEPPARD

- *AU Certificate of Analysis - NATA (COA)	Email	MSheppard@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	MSheppard@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	MSheppard@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	MSheppard@golder.com.au
- Chain of Custody (CoC) (COC)	Email	MSheppard@golder.com.au
- Chromatogram (CHROM)	Email	MSheppard@golder.com.au
- EDI Format - ESDAT (ESDAT)	Email	MSheppard@golder.com.au

GOLDER

CHAIN OF CUSTODY

No. 1

GOLDER ASSOCIATES PTY LTD
Building 7, Botanicca Corporate Park,
570 – 588 Swan Street, Richmond, Victoria 3121
Tel: (03) 8862 3500
Fax: (03) 8862 3501

Golder Job Number: 20145767
Job Location: Hawthorn
Laboratory Issued To: ALS
Order No.: –
Sampled By (Golder): Toby Richards
Golder Job Contact: Matt Sheppard
Golder Contact Email: MSheppard@golder.com

# OBSERVATIONS	SAMPLE DATE	SAMPLE NUMBER TAAXXX/MQNN	SAMPLE TYPE	SAMPLE DEPTH (m)	No. CONTAINERS	TRH/BTEXN/PAH	8 metals	VOCs, SVOC	pH	Sulphate	Nitrate	Hold
D	1/10/2020	GA20-BH10/59a1020	water	–	7	x	x	x	x	x	x	

Environmental Division
Melbourne
Work Order Reference
EM2017165

Telephone : + 61-3-8549 9600

Received: 2/10, 9:10 Carrier:
C/note:
Temp: 8.1 °C Seal: Y/N
Ice / Icebricks / NA

BN 2/10

TURN AROUND TIME REQUIRED

☐ 1 Working Day ☐ 2 Working Days ☐ 3 Working Days ☐ 4 Working Days ☒ 5 Working Days (standard) ☐ Other

SAMPLE RECEIPT 1

Relinquished by: Toby Richards OUR Date: 2/10/2020
Organisation: Golder Time: 8:30
Recieved by: MARK Date: Time:
Organisation:

SAMPLE RECEIPT 2

Relinquished by: Date: Time:
Organisation:
Received by: Date: Time:
Organisation:

DELIVERED BY: COURIER/LAB ☒ GOLDER ☐
RECEIVED BY: FAX ☐ HAND ☐

SAMPLE STATUS: ☐ Security Sealed ☐ Chilled ☐ Frozen ☐ Ambient

RECEIVING LABORATORY TO CONFIRM RECEIPT OF ANALYTICAL SCHEDULE

 # Observations to Assist Analysis and OH&S
C - Expected to be Highly Contaminated
N - NAPL Sample
HS - Expected High Salinity
HOC - Expected High Total Organic Carbon
S - Sheen
O - Odourous

Original (white) - Laboratory
Duplicate (yellow) - Project File
Triplicate (pink) - COC Book

Checked By: Date:

Forms F012-b RL8 Aug08

APPENDIX G

Quality Assurance/Quality Control

		Type	Primary	Dup		Primary	Dup		Primary	Dup		Primary	Dup	
		Sample	HAW-TP02/1001/0.0-0.1	HAW-TP02/1801/0.0-0.1	RPD	HAW-TP10/1001/0.0-0.1	HAW-TP10/1801/0.0-0.1	RPD	GA20-BH-HAW-05/2001/0.0-0.1	GA20-BH-HAW-05/2801/0.0-0.1	RPD	GA20-BH-HAW-12/2002/0.4-0.5	GA20-BH-HAW-12/2802/0.4-0.5	RPD
		Date Sampled	3/09/2020	3/09/2020		3/09/2020	3/09/2020		4/09/2020	4/09/2020		11/09/2020	11/09/2020	
Analyte	**Units**	**EQL**												
Per- and polyfluoroalkyl substances (PFAS)														
Perfluorononanesulfonic acid (PFNS)	mg/kg	0.005				<0.005	<0.005	0						
Perfluoropropanesulfonic acid (PFPrS)	mg/kg	0.005				<0.005	<0.005	0						
Perfluorodecane sulfonic acid (PFDS)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
N-Methyl PFO sulfonamidoethanol (MeFOSE)	mg/kg	0.005 : 0.0005 (Interlab)				<0.005	<0.005	0						
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	mg/kg	0.01 : 0.0002 (Interlab)				<0.01	<0.01	0						
Perfluorooctanoic Acid (PFOA)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Sum of US EPA PFAS (PFOS + PFOA)	mg/kg	0.005				<0.005	<0.005	0						
Sum of WA DER PFAS (n=10)	mg/kg	0.01 : 0.0002 (Interlab)				<0.01	<0.01	0						
Sum of PFASs (n=28 - Lab Reported)	mg/kg	0.05 : 0.0002 (Interlab)				<0.05	<0.05	0						
Perfluorobutanoic acid (PFBA)	mg/kg	0.005 : 0.001 (Interlab)				<0.005	<0.005	0						
Perfluorohexanoic acid (PFHxA)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluorodecanoic acid (PFDA)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluoropentanoic acid (PFPeA)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluorononanoic acid (PFNA)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.005 : 0.0005 (Interlab)				<0.005	<0.005	0						
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
4:2 Fluorotelomer sulfonic acid (4:2 FTSA)	mg/kg	0.005 : 0.0005 (Interlab)				<0.005	<0.005	0						
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	mg/kg	0.01 : 0.0005 (Interlab)				<0.01	<0.01	0						
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	mg/kg	0.005 : 0.0005 (Interlab)				<0.005	<0.005	0						
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	mg/kg	0.005 : 0.0005 (Interlab)				<0.005	<0.005	0						
N-Ethyl PFO sulfonamide (EtFOSA)	mg/kg	0.005 : 0.0005 (Interlab)				<0.005	<0.005	0						
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	mg/kg	0.005 : 0.0005 (Interlab)				<0.005	<0.005	0						
N-Methyl PFO sulfonamide (MeFOSA)	mg/kg	0.005 : 0.0005 (Interlab)				<0.005	<0.005	0						
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.005 : 0.0002 (Interlab)				<0.005	<0.005	0						
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.01 : 0.0002 (Interlab)				<0.01	<0.01	0						
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)	mg/kg	0.005				<0.005	<0.005	0						
Halogenated Benzenes														
1,2,4-Trichlorobenzene	mg/kg	0.5 : 0.01 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,2-Dichlorobenzene	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,3-Dichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,4-Dichlorobenzene	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
4-Chlorotoluene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Bromobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Chlorobenzene	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Hexachlorobenzene	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Metals														
Arsenic	mg/kg	2 : 5 (Interlab)	5.6	6.3	12	11	11	0	3	4.4	38	45	49	9
Cadmium	mg/kg	0.4 : 1 (Interlab)	<0.4	<0.4	0	<0.4	0.4	0	<0.4	<0.4	0	<0.4	0.7	55
Chromium	mg/kg	5	16	17	6	22	21	5	12	11	9	83	70	17
Chromium (hexavalent)	mg/kg	1 : 0.5 (Interlab)	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
Copper	mg/kg	5	18	14	25	67	45	39	7.4	7.3	1	22000	820	186
Lead	mg/kg	5	62	55	12	130	140	7	29	26	11	960	1700	56
Mercury	mg/kg	0.1	0.1	0.1	0	0.2	0.2	0	<0.1	<0.1	0	1.7	1.3	27
Molybdenum	mg/kg	5 : 2 (Interlab)	<5	<5	0	<5	<5	0	<5	<5	0	9.3	7.4	23
Nickel	mg/kg	5 : 2 (Interlab)	8.9	9.6	8	14	13	7	6.5	5.6	15	72	65	10
Selenium	mg/kg	2 : 5 (Interlab)	<2	<2	0	<2	<2	0	<2	<2	0	<2	<2	0
Silver	mg/kg	2										4.8	<2	82
Silver	mg/kg	0.2 : 2 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0			
Tin	mg/kg	10 : 5 (Interlab)	<10	<10	0	41	45	9	<10	<10	0	730	820	12
Zinc	mg/kg	5	86	78	10	300	380	24	49	47	4	1900	1200	45
Herbicides														
Dinoseb	mg/kg	20 : 5 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0
MAH														
1,2,4-trimethylbenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,3,5-Trimethylbenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Benzene	mg/kg	0.1 : 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Toluene	mg/kg	0.1 : 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Isopropylbenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Styrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Ethylbenzene	mg/kg	0.1 : 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Xylenes (m & p)	mg/kg	0.2 : 0.5 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0
Xylene (o)	mg/kg	0.1 : 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Xylenes (Sum of total)	mg/kg	0.3 : 0.5 (Interlab)	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<0.3	0
Total MAHs	mg/kg	0.5 : 0.2 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
OCP														
p,p-DDE	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
a-BHC	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Aldrin	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0

		Type	Primary	Dup		Primary	Dup		Primary	Dup		Primary	Dup	
		Sample	HAW-TP02/1001/0.0-0.1	HAW-TP02/1801/0.0-0.1	RPD	HAW-TP10/1001/0.0-0.1	HAW-TP10/1801/0.0-0.1	RPD	GA20-BH-HAW-05/2001/0.0-0.1	GA20-BH-HAW-05/2801/0.0-0.1	RPD	GA20-BH-HAW-12/2002/0.4-0.5	GA20-BH-HAW-12/2802/0.4-0.5	RPD
		Date Sampled	3/09/2020	3/09/2020		3/09/2020	3/09/2020		4/09/2020	4/09/2020		11/09/2020	11/09/2020	
Aldrin & Dieldrin (Sum of total)	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
b-BHC	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Chlordane (Sum of total)	mg/kg	0.1 : 0.03 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
d-BHC	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
DDD	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
DDT	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
DDT+DDE+DDD (Sum of total)	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Dieldrin	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endosulfan I	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endosulfan II	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endosulfan sulphate	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endrin	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endrin aldehyde	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endrin ketone	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
g-BHC	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Heptachlor	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Heptachlor epoxide	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Methoxychlor	mg/kg	0.05 : 0.03 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Organochlorine Pesticides	mg/kg	0.1 : 0.03 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Other OCPs	mg/kg	0.1 : 0.03 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Toxaphene	mg/kg	1	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
PAH														
Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	0.7	33	<0.5	<0.5	0	1.1	0.8	32
Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	0.8	46	<0.5	<0.5	0	1.8	1.2	40
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5	<0.5	<0.5	0	<0.5	1.1	75	<0.5	<0.5	0	2.3	1.6	36
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5	0.6	0.6	0	0.6	1.3	74	0.6	0.6	0	2.5	1.9	27
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5	1.2	1.2	0	1.2	1.6	29	1.2	1.2	0	2.8	2.1	29
Benzo(b)&(j)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	0.8	46	<0.5	<0.5	0	1	1.1	10
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	0.6	18	<0.5	<0.5	0	1	0.9	11
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	0.6	18	<0.5	<0.5	0	1.3	1.2	8
Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	0.8	46	<0.5	<0.5	0	1.3	0.8	48
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	0.5	1.3	89	0.6	<0.5	18	2.1	2	5
Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	0.5	0	<0.5	<0.5	0	1.1	0.8	32
Naphthalene	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Naphthalene	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	0.6	18	<0.5	<0.5	0	<0.5	0.7	33
Pyrene	mg/kg	0.5	<0.5	<0.5	0	0.6	1.5	86	<0.5	<0.5	0	2.4	2.2	9
PAH (Sum of total)	mg/kg	0.5	<0.5	<0.5	0	1.1	8.2	153	0.7	<0.5	33	13.1	11.7	11
Phenolics														
2,4-Dimethylphenol	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
2,4-Dinitrophenol	mg/kg	5	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0
2-Methylphenol	mg/kg	0.2 : 1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0
2-Nitrophenol	mg/kg	1	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
3- & 4- Methylphenol	mg/kg	0.4 : 1 (Interlab)	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0
4,6-Dinitro-2-methylphenol	mg/kg	5	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0
4,6-Dinitro-o-cyclohexylphenol	mg/kg	20 : 5 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0
4-Nitrophenol	mg/kg	5	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0
Phenol	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Non-Halogenated Phenols (Sum of total)	mg/kg	20 : 1 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0
Phenolics-Halogenated														
2,4,5-Trichlorophenol	mg/kg	1 : 0.05 (Interlab)	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
2,4,6-Trichlorophenol	mg/kg	1 : 0.05 (Interlab)	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
2,4-Dichlorophenol	mg/kg	0.5 : 0.03 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
2,6-Dichlorophenol	mg/kg	0.5 : 0.03 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
2-Chlorophenol	mg/kg	0.5 : 0.03 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
4-Chloro-3-methylphenol	mg/kg	1 : 0.03 (Interlab)	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
Pentachlorophenol	mg/kg	1 : 0.2 (Interlab)	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
Tetrachlorophenols (Sum of total)	mg/kg	10	<10	<10	0	<10	<10	0	<10	<10	0	<10	<10	0
Halogenated Phenols (Sum of total)	mg/kg	1 : 0.03 (Interlab)	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
PCB														
Aroclor 1016	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Aroclor 1232	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Aroclor 1242	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Aroclor 1248	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Aroclor 1254	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Aroclor 1260	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Aroclor 1221	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
PCB (Sum of total)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Other														
Cyanide (total)	mg/kg	5 : 1 (Interlab)	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0
Fluoride	mg/kg	100 : 40 (Interlab)	220	180	20	120	110	9	<100	<100	0	<100	<100	0
pH (aqueous extract)	pH_Units	0.1	6.5	7.4	13	7.1	7.9	11	7.3	7.2	1	7.8	8.5	9
Solvents														
Methyl Ethyl Ketone	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0

		Type	Primary	Dup		Primary	Dup		Primary	Dup		Primary	Dup	
		Sample	HAW-TP02/1001/0.0-0.1	HAW-TP02/1801/0.0-0.1	RPD	HAW-TP10/1001/0.0-0.1	HAW-TP10/1801/0.0-0.1	RPD	GA20-BH-HAW-05/2001/0.0-0.1	GA20-BH-HAW-05/2801/0.0-0.1	RPD	GA20-BH-HAW-12/2002/0.4-0.5	GA20-BH-HAW-12/2802/0.4-0.5	RPD
		Date Sampled	3/09/2020	3/09/2020		3/09/2020	3/09/2020		4/09/2020	4/09/2020		11/09/2020	11/09/2020	
Methyl iso-butyl ketone	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Acetone	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
TPH														
TRH C6 - C9 Fraction	mg/kg	20 : 10 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0
TRH C10 - C14 Fraction	mg/kg	20 : 50 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0
TRH C15 - C28 Fraction	mg/kg	50 : 100 (Interlab)	<50	<50	0	52	71	31	<50	<50	0	130	92	34
TRH C29 - C36 Fraction	mg/kg	50 : 100 (Interlab)	<50	<50	0	84	96	13	<50	<50	0	100	73	31
TRH+C10 - C36 (Sum of total)	mg/kg	50	<50	<50	0	136	167	20	<50	<50	0	230	165	33
TRH+C10 - C40 (Sum of total)	mg/kg	100 : 50 (Interlab)	<100	<100	0	160	200	22	<100	<100	0	200	140	35
TRH C6 - C10 Fraction F1	mg/kg	20 : 10 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	20 : 10 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0
TRH >C10 - C16 Fraction F2	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
TRH >C10 - C16 Fraction Less Naphthalene F2	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
TRH >C16 - C34 Fraction F3	mg/kg	100	<100	<100	0	160	200	22	<100	<100	0	200	140	35
TRH >C34 - C40 Fraction F4	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
VOC														
Total Chlorinated Hydrocarbons	mg/kg	0.5 : 0.01 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,1,1,2-Tetrachloroethane	mg/kg	0.5 : 0.01 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,1,2,2-Tetrachloroethane	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,1,1-Trichloroethane	mg/kg	0.5 : 0.01 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,1,2-Trichloroethane	mg/kg	0.5 : 0.04 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,2,3-Trichloropropane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,2-Dibromoethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,1-Dichloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,2-Dichloroethane	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,1-Dichloroethene	mg/kg	0.5 : 0.01 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
cis-1,2-Dichloroethene	mg/kg	0.5 : 0.01 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
trans-1,2-dichloroethene	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,2-Dichloropropane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
1,3-Dichloropropane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
cis-1,3-Dichloropropene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
trans-1,3-dichloropropene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Allyl chloride	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Bromochloromethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Bromodichloromethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Bromoform	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Bromomethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Carbon tetrachloride	mg/kg	0.5 : 0.01 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Chlorodibromomethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Chloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Chloroform	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Chloromethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Dibromomethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Dichlorodifluoromethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Dichloromethane	mg/kg	0.5 : 0.4 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Hexachlorobutadiene	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Iodomethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Total Other Chlorinated Hydrocarbons	mg/kg	0.5 : 0.01 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Trichloroethene	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Tetrachloroethene	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Trichlorofluoromethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Vinyl chloride	mg/kg	0.5 : 0.02 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 50 (5 x EQL)

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Primary GA20-BH-HAW-01/2001/0.0-0.1 17/09/2020	Dup GA20-BH-HAW-01/2801/0.0-0.1 17/09/2020	RPD	Primary HAW-TP02/1001/0.0-0.1 3/09/2020	Split HAW-TP02/1901 3/09/2020	RPD	Primary HAW-TP10/1001/0.0-0.1 3/09/2020	Split HAW-TP10/1901 3/09/2020	RPD	Primary GA20-BH-HAW-12/2802/0.4-0.5 11/09/2020	Split GA20-BH-HAW-12/2902 11/09/2020	RPD	Primary GA20-BH-HAW-01/2801/0.0-0.1 17/09/2020	Split GA20-BH-HAW-01/2901 17/09/2020	RPD
						<0.005								
						<0.005								
						<0.005	<0.0002	0						
						<0.005	<0.0005	0						
						<0.01	<0.0002	0						
						<0.005	<0.0002	0						
						<0.005	0.0016	0						
						<0.005	<0.0002	0						
						<0.005	0.0016	0						
						<0.005								
						<0.01	0.0016	0						
						<0.05	0.0016	0						
						<0.005	<0.001	0						
						<0.005	<0.0002	0						
						<0.005	<0.0002	0						
						<0.005	<0.0002	0						
						<0.005	<0.0002	0						
						<0.005	<0.0002	0						
						<0.005	<0.0005	0						
						<0.005	<0.0002	0						
						<0.005	<0.0002	0						
						<0.005	<0.0002	0						
						<0.005	<0.0002	0						
						<0.005	<0.0002	0						
						<0.005	<0.0002	0						
						<0.005	<0.0005	0						
						<0.01	<0.0005	0						
						<0.005	<0.0005	0						
						<0.005	<0.0005	0						
						<0.005	<0.0005	0						
						<0.005	<0.0005	0						
						<0.005	<0.0005	0						
						<0.005	<0.0002	0						
						<0.01	<0.0002	0						
						<0.005								
<0.5	<0.5	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
6.9	7.9	14	5.6	8	35	11	8	32	49	31	45	7.9	9	13
<0.4	<0.4	0	<0.4	<1	0	<0.4	<1	0	0.7	3	124	<0.4	<1	0
31	30	3	16			22								
<1	<1	0	<1	<0.5	0	<1	<0.5	0	<1	<0.5	0	<1	<0.5	0
7.3	7.1	3	18	16	12	67	34	65	820	205	120	7.1	8	12
18	15	18	62	49	23	130	112	15	1700	1010	51	15	17	13
<0.1	<0.1	0	0.1	0.1	0	0.2	0.2	0	1.3	5	117	<0.1	<0.1	0
<5	<5	0	<5	<2	0	<5	<2	0	7.4	3	85	<5	<2	0
8.3	6.2	29	8.9	11	21	14	12	15	65	44	39	6.2	6	3
<2	<2	0	<2	<5	0	<2	<5	0	<2	<5	0	<2	<5	0
<2	<2	0							<2	<2	0	<2	<2	0
			<0.2	<2	0	<0.2	<2	0						
<10	<10	0	<10	<5	0	41	45	9	820	558	38	<10	<5	0
21	17	21	86	100	15	300	318	6	1200	1450	19	17	23	30
<20	<20	0	<20	<5	0	<20	<5	0	<20	<5	0	<20	<5	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.1	<0.1	0	<0.1	<0.2	0	<0.1	<0.2	0	<0.1	<0.2	0	<0.1	<0.2	0
<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0	<0.1	<0.5	0	<0.1	<0.5	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0	<0.1	<0.5	0	<0.1	<0.5	0
<0.2	<0.2	0	<0.2	<0.5	0	<0.2	<0.5	0	<0.2	<0.5	0	<0.2	<0.5	0
<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0	<0.1	<0.5	0	<0.1	<0.5	0
<0.3	<0.3	0	<0.3	<0.5	0	<0.3	<0.5	0	<0.3	<0.5	0	<0.3	<0.5	0
<0.5	<0.5	0	<0.5	<0.2	0	<0.5	<0.2	0	<0.5	<0.2	0	<0.5	<0.2	0
<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0

Primary GA20-BH-HAW-01/2001/0.0-0.1 17/09/2020	Dup GA20-BH-HAW-01/2801/0.0-0.1 17/09/2020	RPD	Primary HAW-TP02/1001/0.0-0.1 3/09/2020	Split HAW-TP02/1901 3/09/2020	RPD	Primary HAW-TP10/1001/0.0-0.1 3/09/2020	Split HAW-TP10/1901 3/09/2020	RPD	Primary GA20-BH-HAW-12/2802/0.4-0.5 11/09/2020	Split GA20-BH-HAW-12/2902 11/09/2020	RPD	Primary GA20-BH-HAW-01/2801/0.0-0.1 17/09/2020	Split GA20-BH-HAW-01/2901 17/09/2020	RPD
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.1	<0.1	0	<0.1	<0.03	0	<0.1	<0.03	0	<0.1	<0.03	0	<0.1	<0.03	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05			<0.05								
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.05	<0.05	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0	<0.05	<0.03	0
<0.1	<0.1	0	<0.1	<0.03	0	<0.1	<0.03	0	<0.1	<0.03	0	<0.1	<0.03	0
<0.1	<0.1	0	<0.1	<0.03	0	<0.1	<0.03	0	<0.1	<0.03	0	<0.1	<0.03	0
<1	<1	0	<1			<1								
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	0.5	0	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	1.3	89	0.8	1.7	72	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	1.6	105	1.2	2.2	59	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	2.1	123	1.6	2.9	58	<0.5	<0.5	0
0.6	0.6	0	0.6	0.6	0	0.6	2.3	117	1.9	3.1	48	0.6	0.6	0
1.2	1.2	0	1.2	1.2	0	1.2	2.6	74	2.1	3.4	47	1.2	1.2	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	1	67	0.9	1.4	43	<0.5	<0.5	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	1.2	82	0.8	1.6	67	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	0.5	2.3	129	2	2.8	33	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	0.8	46	0.8	1.2	40	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	<0.5	1.2	82	0.7	1.2	53	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	0.6	2.4	120	2.2	2.8	24	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<0.5	0	1.1	14.3	171	11.7	18.8	47	<0.5	<0.5	0
<0.5	<0.5	0	<0.5	<1	0	<0.5	<1	0	<0.5	<1	0	<0.5	<1	0
<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0
<0.2	<0.2	0	<0.2	<1	0	<0.2	<1	0	<0.2	<1	0	<0.2	<1	0
<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
<0.4	<0.4	0	<0.4	<1	0	<0.4	<1	0	<0.4	<1	0	<0.4	<1	0
<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0
<20	<20	0	<20	<5	0	<20	<5	0	<20	<5	0	<20	<5	0
<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0
<0.5	<0.5	0	<0.5	<1	0	<0.5	<1	0	<0.5	<1	0	<0.5	<1	0
<20	<20	0	<20	<1	0	<20	<1	0	<20	<1	0	<20	<1	0
<1	<1	0	<1	<0.05	0	<1	<0.05	0	<1	<0.05	0	<1	<0.05	0
<1	<1	0	<1	<0.05	0	<1	<0.05	0	<1	<0.05	0	<1	<0.05	0
<0.5	<0.5	0	<0.5	<0.03	0	<0.5	<0.03	0	<0.5	<0.03	0	<0.5	<0.03	0
<0.5	<0.5	0	<0.5	<0.03	0	<0.5	<0.03	0	<0.5	<0.03	0	<0.5	<0.03	0
<0.5	<0.5	0	<0.5	<0.03	0	<0.5	<0.03	0	<0.5	<0.03	0	<0.5	<0.03	0
<1	<1	0	<1	<0.03	0	<1	<0.03	0	<1	<0.03	0	<1	<0.03	0
<1	<1	0	<1	<0.2	0	<1	<0.2	0	<1	<0.2	0	<1	<0.2	0
<10	<10	0	<10			<10								
<1	<1	0	<1	<0.03	0	<1	<0.03	0	<1	<0.03	0	<1	<0.03	0
<0.1	<0.1	0	<0.1			<0.1								
<0.1	<0.1	0	<0.1			<0.1								
<0.1	<0.1	0	<0.1			<0.1								
<0.1	<0.1	0	<0.1			<0.1								
<0.1	<0.1	0	<0.1			<0.1								
<0.1	<0.1	0	<0.1			<0.1								
<0.1	<0.1	0	<0.1			<0.1								
<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
<5	<5	0	<5	<1	0	<5	<1	0	<5	2	0	<5	<1	0
210	400	62	220	160	32	120	100	18	<100	320	105	400	390	3
6.8	6.7	1	6.5			7.1								
<0.5	<0.5	0	<0.5			<0.5								

Primary GA20-BH-HAW-01/2001/0.0-0.1 17/09/2020	Dup GA20-BH-HAW-01/2801/0.0-0.1 17/09/2020	RPD	Primary HAW-TP02/1001/0.0-0.1 3/09/2020	Split HAW-TP02/1901 3/09/2020	RPD	Primary HAW-TP10/1001/0.0-0.1 3/09/2020	Split HAW-TP10/1901 3/09/2020	RPD	Primary GA20-BH-HAW-12/2802/0.4-0.5 11/09/2020	Split GA20-BH-HAW-12/2902 11/09/2020	RPD	Primary GA20-BH-HAW-01/2801/0.0-0.1 17/09/2020	Split GA20-BH-HAW-01/2901 17/09/2020	RPD
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<20	<20	0	<20	<10	0	<20	<10	0	<20	<10	0	<20	<10	0
<20	<20	0	<20	<50	0	<20	<50	0	<20	<50	0	<20	<50	0
<50	<50	0	<50	<100	0	52	<100	0	92	100	8	<50	<100	0
<50	<50	0	<50	<100	0	84	<100	0	73	<100	0	<50	<100	0
<50	<50	0	<50	<50	0	136	<50	92	165	100	49	<50	<50	0
<100	<100	0	<100	<50	0	160	110	37	140	170	19	<100	<50	0
<20	<20	0	<20	<10	0	<20	<10	0	<20	<10	0	<20	<10	0
<20	<20	0	<20	<10	0	<20	<10	0	<20	<10	0	<20	<10	0
<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
<100	<100	0	<100	<100	0	160	110	37	140	170	19	<100	<100	0
<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
<0.5	<0.5	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0
<0.5	<0.5	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.5	<0.5	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0
<0.5	<0.5	0	<0.5	<0.04	0	<0.5	<0.04	0	<0.5	<0.04	0	<0.5	<0.04	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.5	<0.5	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0
<0.5	<0.5	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.4	0	<0.5	<0.4	0	<0.5	<0.4	0	<0.5	<0.4	0
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0	<0.5	<0.01	0
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0
<0.5	<0.5	0	<0.5			<0.5								
<0.5	<0.5	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0	<0.5	<0.02	0

		Type	Primary	Dup		Primary	Split	
		Sample	GA20-BH10/50011020	GA20-BH10/58011020	RPD	GA20-BH10/58011020	GA20-BH10/59011020	RPD
		Date Sampled	1/10/2020	1/10/2020		1/10/2020	1/10/2020	
ChemName	**Units**	**EQL**						
Amino Aliphatics								
N-Nitrosodi-n-butylamine	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
N-Nitrosodi-n-propylamine	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Amino Aromatics								
1-Naphthylamine	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
2-Naphthylamine	mg/l	0.005	<0.005	<0.005	0			
Diphenylamine	mg/l	0.005	<0.005	<0.005	0			
Anilines								
2-Nitroaniline	mg/l	0.005 : 0.004 (Interlab)	<0.005	<0.005	0	<0.005	<0.004	0
Aniline	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
E-Nitrobenzenes								
Nitrobenzene	mg/l	0.05 : 0.002 (Interlab)	<0.05	<0.05	0	<0.05	<0.002	0
Pentachloronitrobenzene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
2,4-Dinitrotoluene	mg/l	0.005 : 0.004 (Interlab)	<0.005	<0.005	0	<0.005	<0.004	0
2,6-Dinitrotoluene	mg/l	0.005 : 0.004 (Interlab)	<0.005	<0.005	0	<0.005	<0.004	0
Halogenated Benzenes								
1,2,3,4-Tetrachlorobenzene	mg/l	0.005	<0.005	<0.005	0			
1,2,3,5-Tetrachlorobenzene	mg/l	0.005	<0.005	<0.005	0			
1,2,3-Trichlorobenzene	mg/l	0.005	<0.005	<0.005	0	<0.005	<0.005	0
1,2,4,5-Tetrachlorobenzene	mg/l	0.005	<0.005	<0.005	0			
1,2,4-Trichlorobenzene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
1,2-Dichlorobenzene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
1,2-Dichlorobenzene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.002	0
1,3,5-Trichlorobenzene	mg/l	0.005	<0.005	<0.005	0			
1,3-Dichlorobenzene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
1,3-Dichlorobenzene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.002	0
1,4-Dichlorobenzene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
1,4-Dichlorobenzene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.002	0
4-Chlorotoluene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Bromobenzene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Chlorobenzene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Hexachlorobenzene	mg/l	0.005 : 0.004 (Interlab)	<0.005	<0.005	0	<0.005	<0.004	0
Pentachlorobenzene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Metals								
Arsenic (Filtered)	mg/l	0.001	0.001	0.001	0	0.001	0.001	0
Cadmium (Filtered)	mg/l	0.0002 : 0.0001 (Interlab)	<0.0002	<0.0002	0	<0.0002	<0.0001	0
Chromium (Filtered)	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Copper (Filtered)	mg/l	0.001	0.17	0.012	174	0.012	0.006	67
Lead (Filtered)	mg/l	0.001	0.006	0.002	100	0.002	<0.001	67
Mercury (Filtered)	mg/l	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Nickel (Filtered)	mg/l	0.001	0.077	0.048	46	0.048	0.038	23
Zinc (Filtered)	mg/l	0.005	0.32	0.065	132	0.065	0.032	68
Herbicides								
Pronamide	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Trifluralin	mg/l	0.005	<0.005	<0.005	0			
MAH								
1,2,4-trimethylbenzene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,3,5-Trimethylbenzene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Benzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Toluene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.002	0
Isopropylbenzene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Styrene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Ethylbenzene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.002	0
Xylenes (m & p)	mg/l	0.002	<0.002	<0.002	0	<0.002	<0.002	0
Xylene (o)	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.002	0
Xylenes (Sum of total)	mg/l	0.003 : 0.002 (Interlab)	<0.003	<0.003	0	<0.003	<0.002	0
Total MAHs	mg/l	0.003	<0.003	<0.003	0			
OCP								
p,p-DDE	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
a-BHC	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Aldrin	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
b-BHC	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
d-BHC	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
DDD	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
DDT	mg/l	0.005 : 0.004 (Interlab)	<0.005	<0.005	0	<0.005	<0.004	0
Dieldrin	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Endosulfan I	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Endosulfan II	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Endosulfan sulphate	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Endrin	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Endrin aldehyde	mg/l	0.005	<0.005	<0.005	0			
Endrin ketone	mg/l	0.005	<0.005	<0.005	0			
g-BHC	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Heptachlor	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Heptachlor epoxide	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Methoxychlor	mg/l	0.005	<0.005	<0.005	0			
PAH								
Acenaphthene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Acenaphthylene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Anthracene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Benz(a)anthracene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Benzo(a)pyrene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	0.0005	0
Benzo(b)&(j)fluoranthene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Benzo(g,h,i)perylene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Benzo(k)fluoranthene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Chrysene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Dibenz(a,h)anthracene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Fluoranthene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	0.0011	10
Fluorene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Indeno(1,2,3-c,d)pyrene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Naphthalene	mg/l	0.01 : 0.005 (Interlab)	<0.01	<0.01	0	<0.01	<0.001	0
Naphthalene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Phenanthrene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	<0.001	0
Pyrene	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	0.0012	18
PAH (Sum of total)	mg/l	0.001 : 0.002 (Interlab)	<0.001	<0.001	0	<0.001	0.0028	95
1-Chloronaphthalene	mg/l	0.005	<0.005	<0.005	0			
2-Chloronaphthalene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
2-Methylnaphthalene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
3-Methylcholanthrene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
7,12-Dimethylbenz(a)anthracene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Phenolics								
2,4-Dimethylphenol	mg/l	0.003 : 0.002 (Interlab)	<0.003	<0.003	0	<0.003	<0.002	0
2,4-Dinitrophenol	mg/l	0.03	<0.03	<0.03	0			
2-Methylphenol	mg/l	0.003 : 0.002 (Interlab)	<0.003	<0.003	0	<0.003	<0.002	0
2-Nitrophenol	mg/l	0.01 : 0.002 (Interlab)	<0.01	<0.01	0	<0.01	<0.002	0
3- & 4- Methylphenol	mg/l	0.006 : 0.004 (Interlab)	<0.006	<0.006	0	<0.006	<0.004	0
4,6-Dinitro-2-methylphenol	mg/l	0.03	<0.03	<0.03	0			
4-Nitrophenol	mg/l	0.03	<0.03	<0.03	0			
Phenol	mg/l	0.003 : 0.002 (Interlab)	<0.003	<0.003	0	<0.003	<0.002	0
Phenolics-Halogenated								
2,3,4,6-Tetrachlorophenol	mg/l	0.01	<0.01	<0.01	0			
2,4,5-Trichlorophenol	mg/l	0.01 : 0.002 (Interlab)	<0.01	<0.01	0	<0.01	<0.002	0
2,4,6-Trichlorophenol	mg/l	0.01 : 0.002 (Interlab)	<0.01	<0.01	0	<0.01	<0.002	0
2,4-Dichlorophenol	mg/l	0.003 : 0.002 (Interlab)	<0.003	<0.003	0	<0.003	<0.002	0
2,6-Dichlorophenol	mg/l	0.003 : 0.002 (Interlab)	<0.003	<0.003	0	<0.003	<0.002	0
2-Chlorophenol	mg/l	0.003 : 0.002 (Interlab)	<0.003	<0.003	0	<0.003	<0.002	0
4-Chloro-3-methylphenol	mg/l	0.01 : 0.002 (Interlab)	<0.01	<0.01	0	<0.01	<0.002	0
Pentachlorophenol	mg/l	0.01 : 0.004 (Interlab)	<0.01	<0.01	0	<0.01	<0.004	0

		Type	Primary	Dup		Primary	Split	
		Sample	GA20-BH10/50011020	GA20-BH10/58011020	RPD	GA20-BH10/58011020	GA20-BH10/59011020	RPD
		Date Sampled	1/10/2020	1/10/2020		1/10/2020	1/10/2020	
ChemName	**Units**	**EQL**						
Phthalates								
Bis(2-ethylhexyl) phthalate	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
Butylbenzyl phthalate	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Diethyl phthalate	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Dimethyl phthalate	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Di-n-butyl phthalate	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Di-n-octyl phthalate	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Other								
pH (Lab)	pH_Units	0.1 : 0.01 (Interlab)	8	7.9	1	7.9	6.89	14
Sulphate (as SO4)	mg/l	5	110	110	0			
Nitrate (as N)	mg/l	0.02 : 0.01 (Interlab)	0.11	0.11	0	0.11	0.13	17
Solvents								
Methyl Ethyl Ketone	mg/l	0.001 : 0.05 (Interlab)	<0.001	<0.001	0	<0.001	<0.05	0
Methyl iso-butyl ketone	mg/l	0.001 : 0.05 (Interlab)	<0.001	<0.001	0	<0.001	<0.05	0
Acetone	mg/l	0.001	0.001	0.001	0			
SVOC								
2-Picoline	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
3,3-Dichlorobenzidine	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
4-(Dimethylamino) azobenzene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
4-Aminobiphenyl	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
4-Bromophenyl phenyl ether	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
4-Chlorophenyl phenyl ether	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Acetophenone	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Bis(2-chloroethoxy) methane	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Bis(2-chloroisopropyl) ether	mg/l	0.005	<0.005	<0.005	0			
Dibenzofuran	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Hexachlorocyclopentadiene	mg/l	0.005 : 0.01 (Interlab)	<0.005	<0.005	0	<0.005	<0.01	0
N-Nitrosopiperidine	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
TPH								
TRH C6 - C9 Fraction	mg/l	0.02	<0.02	<0.02	0	<0.02	<0.02	0
TRH C10 - C14 Fraction	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05	0
TRH C15 - C28 Fraction	mg/l	0.1	<0.1	<0.1	0	<0.1	0.1	0
TRH C29 - C36 Fraction	mg/l	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
TRH+C10 - C36 (Sum of total)	mg/l	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.1	0.1	0
TRH+C10 - C40 (Sum of total)	mg/l	0.1	<0.1	<0.1	0	<0.1	0.12	18
TRH C6 - C10 Fraction F1	mg/l	0.02	<0.02	<0.02	0	<0.02	<0.02	0
TRH C6 - C10 Fraction Less BTEX F1	mg/l	0.02	<0.02	<0.02	0	<0.02	<0.02	0
TRH >C10 - C16 Fraction F2	mg/l	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
TRH >C10 - C16 Fraction Less Naphthalene F2	mg/l	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0
TRH >C16 - C34 Fraction F3	mg/l	0.1	<0.1	<0.1	0	<0.1	0.12	18
TRH >C34 - C40 Fraction F4	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
VOC								
Total Chlorinated Hydrocarbons	µg/l	5	9	9	0			
1,1,1,2-Tetrachloroethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,1,2,2-Tetrachloroethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,1,1-Trichloroethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,1,2-Trichloroethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,2,3-Trichloropropane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,2-Dibromoethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,1-Dichloroethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,2-Dichloroethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,1-Dichloroethene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
cis-1,2-Dichloroethene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
trans-1,2-dichloroethene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,2-Dichloropropane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
1,3-Dichloropropane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
cis-1,3-Dichloropropene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
trans-1,3-dichloropropene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Allyl chloride	mg/l	0.001	<0.001	<0.001	0			
Benzyl chloride	mg/l	0.005	<0.005	<0.005	0			
Bromochloromethane	mg/l	0.001	<0.001	<0.001	0			
Bromodichloromethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Bromoform	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Bromomethane	mg/l	0.001 : 0.05 (Interlab)	<0.001	<0.001	0	<0.001	<0.05	0
Carbon disulfide	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Carbon tetrachloride	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Chlorodibromomethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Chloroethane	mg/l	0.001 : 0.05 (Interlab)	<0.001	<0.001	0	<0.001	<0.05	0
Chloroform	mg/l	0.005	0.009	0.009	0	0.009	0.008	12
Chloromethane	mg/l	0.001 : 0.05 (Interlab)	<0.001	<0.001	0	<0.001	<0.05	0
Dibenz(a.j)acridine	mg/l	0.005	<0.005	<0.005	0			
Dibromomethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Dichlorodifluoromethane	mg/l	0.001 : 0.05 (Interlab)	<0.001	<0.001	0	<0.001	<0.05	0
Dichloromethane	mg/l	0.001	<0.001	<0.001	0			
Hexachlorobutadiene	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Hexachloroethane	mg/l	0.005 : 0.002 (Interlab)	<0.005	<0.005	0	<0.005	<0.002	0
Iodomethane	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Total Other Chlorinated Hydrocarbons	mg/l	0.005	0.009	0.009	0			
Trichloroethene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Tetrachloroethene	mg/l	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.001	<0.005	0
Trichlorofluoromethane	mg/l	0.001 : 0.05 (Interlab)	<0.001	<0.001	0	<0.001	<0.05	0
Vinyl chloride	mg/l	0.001 : 0.05 (Interlab)	<0.001	<0.001	0	<0.001	<0.05	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 50 (5 x EQL)

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

APPENDIX H

Calibration Certificates

Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **18L101818**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. D.O		0 ppm		347911	0 ppm
2. Conductivity		2760uS		350510	2760uS
3. pH7		pH 7.00		330737	pH 7.00
4. pH4		pH 4.00		351412	pH 4.00
5. ORP mV		236.86		343851 / 343852	236.86
6. Temp °C		18.7			18.7

Calibrated by: **Carine Chan**

Calibration date: **28-Sep-20**

Next calibration due: **27-Mar-21**

Oil / Water Interface Meter

Instrument **Geotech Interface Meter (30M)**
Serial No. **5320**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
	above 7.9v	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: **Ann Nguyen**

Calibration date: **24-Sep-20**

Next calibration due: **23-Mar-21**

APPENDIX I

ProUCL

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for BaP TEQ in Fill											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.113/10/2020 12:49:22								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	BaP TEQ											
11												
12	General Statistics											
13	Total Number of Observations					41	Number of Distinct Observations					11
14	Number of Detects					12	Number of Non-Detects					29
15	Number of Distinct Detects					10	Number of Distinct Non-Detects					1
16	Minimum Detect					0.8	Minimum Non-Detect					0.5
17	Maximum Detect					9.6	Maximum Non-Detect					0.5
18	Variance Detects					6.536	Percent Non-Detects					70.73%
19	Mean Detects					2.7	SD Detects					2.557
20	Median Detects					2.1	CV Detects					0.947
21	Skewness Detects					2.184	Kurtosis Detects					4.816
22	Mean of Logged Detects					0.702	SD of Logged Detects					0.748
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.71	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.859	Detected Data Not Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.318	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.243	Detected Data Not Normal at 5% Significance Level					
29	Detected Data Not Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	KM Mean					1.144	KM Standard Error of Mean					0.271
33	KM SD					1.66	95% KM (BCA) UCL					1.595
34	95% KM (t) UCL					1.6	95% KM (Percentile Bootstrap) UCL					1.598
35	95% KM (z) UCL					1.589	95% KM Bootstrap t UCL					2.097
36	90% KM Chebyshev UCL					1.956	95% KM Chebyshev UCL					2.324
37	97.5% KM Chebyshev UCL					2.835	99% KM Chebyshev UCL					3.838
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					0.664	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.743	Detected data appear Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.217	Kolmogorov-Smirnov GOF					
43	5% K-S Critical Value					0.249	Detected data appear Gamma Distributed at 5% Significance Level					
44	Detected data appear Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					1.864	k star (bias corrected MLE)					1.454
48	Theta hat (MLE)					1.448	Theta star (bias corrected MLE)					1.857
49	nu hat (MLE)					44.74	nu star (bias corrected)					34.89
50	Mean (detects)					2.7						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01					Mean	0.797
59					Maximum	9.6					Median	0.01
60					SD	1.826					CV	2.29
61					k hat (MLE)	0.251					k star (bias corrected MLE)	0.249
62					Theta hat (MLE)	3.174					Theta star (bias corrected MLE)	3.201
63					nu hat (MLE)	20.6					nu star (bias corrected)	20.42
64					Adjusted Level of Significance (β)	0.0441						
65					Approximate Chi Square Value (20.42, α)	11.16					Adjusted Chi Square Value (20.42, β)	10.91
66					95% Gamma Approximate UCL (use when n>=50)	1.459					95% Gamma Adjusted UCL (use when n<50)	1.492
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	1.144					SD (KM)	1.66
70					Variance (KM)	2.756					SE of Mean (KM)	0.271
71					k hat (KM)	0.475					k star (KM)	0.456
72					nu hat (KM)	38.94					nu star (KM)	37.42
73					theta hat (KM)	2.409					theta star (KM)	2.507
74					80% gamma percentile (KM)	1.869					90% gamma percentile (KM)	3.152
75					95% gamma percentile (KM)	4.539					99% gamma percentile (KM)	7.979
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (37.42, α)	24.42					Adjusted Chi Square Value (37.42, β)	24.03
79					95% Gamma Approximate KM-UCL (use when n>=50)	1.753					95% Gamma Adjusted KM-UCL (use when n<50)	1.781
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Test Statistic	0.923	**Shapiro Wilk GOF Test**					
83					5% Shapiro Wilk Critical Value	0.859	Detected Data appear Lognormal at 5% Significance Level					
84					Lilliefors Test Statistic	0.164	**Lilliefors GOF Test**					
85					5% Lilliefors Critical Value	0.243	Detected Data appear Lognormal at 5% Significance Level					
86	**Detected Data appear Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	0.939					Mean in Log Scale	-1.236
90					SD in Original Scale	1.771					SD in Log Scale	1.619
91					95% t UCL (assumes normality of ROS data)	1.405					95% Percentile Bootstrap UCL	1.434
92					95% BCA Bootstrap UCL	1.627					95% Bootstrap t UCL	1.879
93					95% H-UCL (Log ROS)	2.394						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	-0.285					KM Geo Mean	0.752
97					KM SD (logged)	0.744					95% Critical H Value (KM-Log)	2.094
98					KM Standard Error of Mean (logged)	0.121					95% H-UCL (KM -Log)	1.268
99					KM SD (logged)	0.744					95% Critical H Value (KM-Log)	2.094
100					KM Standard Error of Mean (logged)	0.121						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**						**DL/2 Log-Transformed**					
104					Mean in Original Scale	0.967					Mean in Log Scale	-0.775
105					SD in Original Scale	1.752					SD in Log Scale	1.039
106					95% t UCL (Assumes normality)	1.428					95% H-Stat UCL	1.171
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Detected Data appear Gamma Distributed at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						**Suggested UCL to Use**						
113					95% KM Adjusted Gamma UCL	1.781				95% GROS Adjusted Gamma UCL		1.492
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for arsenic in fill											
2												
3			User Selected Options									
4			Date/Time of Computation	ProUCL 5.101/10/2020 15:44:39								
5			From File	WorkSheet.xls								
6			Full Precision	OFF								
7			Confidence Coefficient	95%								
8			Number of Bootstrap Operations	2000								
9												
10	As											
11												
12	General Statistics											
13					Total Number of Observations	41	Number of Distinct Observations	32				
14					Number of Detects	38	Number of Non-Detects	3				
15					Number of Distinct Detects	31	Number of Distinct Non-Detects	1				
16					Minimum Detect	2.2	Minimum Non-Detect	2				
17					Maximum Detect	45	Maximum Non-Detect	2				
18					Variance Detects	89.43	Percent Non-Detects	7.317%				
19					Mean Detects	10.66	SD Detects	9.457				
20					Median Detects	7.85	CV Detects	0.887				
21					Skewness Detects	2.086	Kurtosis Detects	4.355				
22					Mean of Logged Detects	2.088	SD of Logged Detects	0.721				
23												
24	Normal GOF Test on Detects Only											
25					Shapiro Wilk Test Statistic	0.743	Shapiro Wilk GOF Test					
26					5% Shapiro Wilk Critical Value	0.938	Detected Data Not Normal at 5% Significance Level					
27					Lilliefors Test Statistic	0.249	Lilliefors GOF Test					
28					5% Lilliefors Critical Value	0.142	Detected Data Not Normal at 5% Significance Level					
29	Detected Data Not Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32					KM Mean	10.03	KM Standard Error of Mean	1.466				
33					KM SD	9.262	95% KM (BCA) UCL	12.8				
34					95% KM (t) UCL	12.5	95% KM (Percentile Bootstrap) UCL	12.56				
35					95% KM (z) UCL	12.44	95% KM Bootstrap t UCL	13.24				
36					90% KM Chebyshev UCL	14.43	95% KM Chebyshev UCL	16.42				
37					97.5% KM Chebyshev UCL	19.18	99% KM Chebyshev UCL	24.62				
38												
39	Gamma GOF Tests on Detected Observations Only											
40					A-D Test Statistic	1.195	Anderson-Darling GOF Test					
41					5% A-D Critical Value	0.76	Detected Data Not Gamma Distributed at 5% Significance Level					
42					K-S Test Statistic	0.151	Kolmogorov-Smirnov GOF					
43					5% K-S Critical Value	0.145	Detected Data Not Gamma Distributed at 5% Significance Level					
44	Detected Data Not Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47					k hat (MLE)	1.943	k star (bias corrected MLE)	1.807				
48					Theta hat (MLE)	5.488	Theta star (bias corrected MLE)	5.901				
49					nu hat (MLE)	147.7	nu star (bias corrected)	137.3				
50					Mean (detects)	10.66						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01				Mean		9.884
59					Maximum	45				Median		7.5
60					SD	9.519				CV		0.963
61					k hat (MLE)	0.85				k star (bias corrected MLE)		0.804
62					Theta hat (MLE)	11.63				Theta star (bias corrected MLE)		12.29
63					nu hat (MLE)	69.7				nu star (bias corrected)		65.94
64					Adjusted Level of Significance (β)	0.0441						
65					Approximate Chi Square Value (65.94, α)	48.25				Adjusted Chi Square Value (65.94, β)		47.7
66					95% Gamma Approximate UCL (use when n>=50)	13.51				95% Gamma Adjusted UCL (use when n<50)		13.66
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	10.03				SD (KM)		9.262
70					Variance (KM)	85.79				SE of Mean (KM)		1.466
71					k hat (KM)	1.172				k star (KM)		1.103
72					nu hat (KM)	96.14				nu star (KM)		90.44
73					theta hat (KM)	8.554				theta star (KM)		9.093
74					80% gamma percentile (KM)	16.01				90% gamma percentile (KM)		22.54
75					95% gamma percentile (KM)	29.03				99% gamma percentile (KM)		43.98
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (90.44, α)	69.51				Adjusted Chi Square Value (90.44, β)		68.84
79					95% Gamma Approximate KM-UCL (use when n>=50)	13.05				95% Gamma Adjusted KM-UCL (use when n<50)		13.18
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Test Statistic	0.959	**Shapiro Wilk GOF Test**					
83					5% Shapiro Wilk Critical Value	0.938	Detected Data appear Lognormal at 5% Significance Level					
84					Lilliefors Test Statistic	0.0967	**Lilliefors GOF Test**					
85					5% Lilliefors Critical Value	0.142	Detected Data appear Lognormal at 5% Significance Level					
86	**Detected Data appear Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	9.993				Mean in Log Scale		1.964
90					SD in Original Scale	9.411				SD in Log Scale		0.826
91					95% t UCL (assumes normality of ROS data)	12.47				95% Percentile Bootstrap UCL		12.49
92					95% BCA Bootstrap UCL	12.68				95% Bootstrap t UCL		13.29
93					95% H-UCL (Log ROS)	13.32						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	1.986				KM Geo Mean		7.285
97					KM SD (logged)	0.775				95% Critical H Value (KM-Log)		2.123
98					KM Standard Error of Mean (logged)	0.123				95% H-UCL (KM -Log)		12.76
99					KM SD (logged)	0.775				95% Critical H Value (KM-Log)		2.123
100					KM Standard Error of Mean (logged)	0.123						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**						**DL/2 Log-Transformed**					
104					Mean in Original Scale	9.956				Mean in Log Scale		1.935
105					SD in Original Scale	9.445				SD in Log Scale		0.885
106					95% t UCL (Assumes normality)	12.44				95% H-Stat UCL		14
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Detected Data appear Lognormal Distributed at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						**Suggested UCL to Use**						
113					KM H-UCL	12.76						
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for BaP in fill											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:50:42								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	BaP											
11												
12	General Statistics											
13	Total Number of Observations					41	Number of Distinct Observations					10
14	Number of Detects					12	Number of Non-Detects					29
15	Number of Distinct Detects					9	Number of Distinct Non-Detects					1
16	Minimum Detect					0.6	Minimum Non-Detect					0.5
17	Maximum Detect					6.7	Maximum Non-Detect					0.5
18	Variance Detects					3.121	Percent Non-Detects					70.73%
19	Mean Detects					1.967	SD Detects					1.767
20	Median Detects					1.55	CV Detects					0.898
21	Skewness Detects					2.121	Kurtosis Detects					4.594
22	Mean of Logged Detects					0.406	SD of Logged Detects					0.726
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.73	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.859	Detected Data Not Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.303	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.243	Detected Data Not Normal at 5% Significance Level					
29	Detected Data Not Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	KM Mean					0.929	KM Standard Error of Mean					0.185
33	KM SD					1.133	95% KM (BCA) UCL					1.276
34	95% KM (t) UCL					1.24	95% KM (Percentile Bootstrap) UCL					1.249
35	95% KM (z) UCL					1.233	95% KM Bootstrap t UCL					1.625
36	90% KM Chebyshev UCL					1.483	95% KM Chebyshev UCL					1.734
37	97.5% KM Chebyshev UCL					2.083	99% KM Chebyshev UCL					2.767
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					0.586	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.742	Detected data appear Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.204	Kolmogorov-Smirnov GOF					
43	5% K-S Critical Value					0.249	Detected data appear Gamma Distributed at 5% Significance Level					
44	Detected data appear Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					2.001	k star (bias corrected MLE)					1.556
48	Theta hat (MLE)					0.983	Theta star (bias corrected MLE)					1.264
49	nu hat (MLE)					48.03	nu star (bias corrected)					37.35
50	Mean (detects)					1.967						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01					Mean	0.583
59					Maximum	6.7					Median	0.01
60					SD	1.293					CV	2.218
61					k hat (MLE)	0.27					k star (bias corrected MLE)	0.266
62					Theta hat (MLE)	2.158					Theta star (bias corrected MLE)	2.187
63					nu hat (MLE)	22.14					nu star (bias corrected)	21.85
64					Adjusted Level of Significance (β)	0.0441						
65					Approximate Chi Square Value (21.85, α)	12.23					Adjusted Chi Square Value (21.85, β)	11.96
66					95% Gamma Approximate UCL (use when n>=50)	1.041					95% Gamma Adjusted UCL (use when n<50)	1.064
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	0.929					SD (KM)	1.133
70					Variance (KM)	1.283					SE of Mean (KM)	0.185
71					k hat (KM)	0.673					k star (KM)	0.64
72					nu hat (KM)	55.21					nu star (KM)	52.5
73					theta hat (KM)	1.38					theta star (KM)	1.451
74					80% gamma percentile (KM)	1.531					90% gamma percentile (KM)	2.381
75					95% gamma percentile (KM)	3.266					99% gamma percentile (KM)	5.395
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (52.50, α)	36.86					Adjusted Chi Square Value (52.50, β)	36.38
79					95% Gamma Approximate KM-UCL (use when n>=50)	1.324					95% Gamma Adjusted KM-UCL (use when n<50)	1.341
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk GOF Test**					
83					5% Shapiro Wilk Critical Value	0.859	Detected Data appear Lognormal at 5% Significance Level					
84					Lilliefors Test Statistic	0.155	**Lilliefors GOF Test**					
85					5% Lilliefors Critical Value	0.243	Detected Data appear Lognormal at 5% Significance Level					
86	**Detected Data appear Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	0.692					Mean in Log Scale	-1.477
90					SD in Original Scale	1.249					SD in Log Scale	1.574
91					95% t UCL (assumes normality of ROS data)	1.021					95% Percentile Bootstrap UCL	1.021
92					95% BCA Bootstrap UCL	1.14					95% Bootstrap t UCL	1.327
93					95% H-UCL (Log ROS)	1.685						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	-0.371					KM Geo Mean	0.69
97					KM SD (logged)	0.626					95% Critical H Value (KM-Log)	1.992
98					KM Standard Error of Mean (logged)	0.102					95% H-UCL (KM -Log)	1.022
99					KM SD (logged)	0.626					95% Critical H Value (KM-Log)	1.992
100					KM Standard Error of Mean (logged)	0.102						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**						**DL/2 Log-Transformed**					
104					Mean in Original Scale	0.752					Mean in Log Scale	-0.862
105					SD in Original Scale	1.218					SD in Log Scale	0.909
106					95% t UCL (Assumes normality)	1.073					95% H-Stat UCL	0.883
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Detected Data appear Gamma Distributed at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						Suggested UCL to Use						
113					95% KM Adjusted Gamma UCL	1.341				95% GROS Adjusted Gamma UCL		1.064
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for copper in fill											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:45:40								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	Cu											
11												
12	General Statistics											
13	Total Number of Observations					41	Number of Distinct Observations					26
14	Number of Detects					38	Number of Non-Detects					3
15	Number of Distinct Detects					26	Number of Distinct Non-Detects					1
16	Minimum Detect					5	Minimum Non-Detect					5
17	Maximum Detect					22000	Maximum Non-Detect					5
18	Variance Detects					12713175	Percent Non-Detects					7.317%
19	Mean Detects					599.2	SD Detects					3566
20	Median Detects					14.5	CV Detects					5.951
21	Skewness Detects					6.164	Kurtosis Detects					38
22	Mean of Logged Detects					2.936	SD of Logged Detects					1.368
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.169	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.938	Detected Data Not Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.531	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.142	Detected Data Not Normal at 5% Significance Level					
29	Detected Data Not Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	KM Mean					555.7	KM Standard Error of Mean					536.6
33	KM SD					3391	95% KM (BCA) UCL					1628
34	95% KM (t) UCL					1459	95% KM (Percentile Bootstrap) UCL					1627
35	95% KM (z) UCL					1438	95% KM Bootstrap t UCL					128520
36	90% KM Chebyshev UCL					2166	95% KM Chebyshev UCL					2895
37	97.5% KM Chebyshev UCL					3907	99% KM Chebyshev UCL					5895
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					11.69	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.903	Detected Data Not Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.457	Kolmogorov-Smirnov GOF					
43	5% K-S Critical Value					0.159	Detected Data Not Gamma Distributed at 5% Significance Level					
44	Detected Data Not Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					0.211	k star (bias corrected MLE)					0.212
48	Theta hat (MLE)					2841	Theta star (bias corrected MLE)					2829
49	nu hat (MLE)					16.03	nu star (bias corrected)					16.1
50	Mean (detects)					599.2						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01				Mean		555.3
59					Maximum	22000				Median		14
60					SD	3433				CV		6.182
61					k hat (MLE)	0.189				k star (bias corrected MLE)		0.191
62					Theta hat (MLE)	2943				Theta star (bias corrected MLE)		2905
63					nu hat (MLE)	15.47				nu star (bias corrected)		15.67
64					Adjusted Level of Significance (β)	0.0441						
65					Approximate Chi Square Value (15.67, α)	7.732				Adjusted Chi Square Value (15.67, β)		7.528
66					95% Gamma Approximate UCL (use when n>=50)	1126				95% Gamma Adjusted UCL (use when n<50)		1156
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	555.7				SD (KM)		3391
70					Variance (KM)	11496809				SE of Mean (KM)		536.6
71					k hat (KM)	0.0269				k star (KM)		0.0412
72					nu hat (KM)	2.203				nu star (KM)		3.375
73					theta hat (KM)	20689				theta star (KM)		13503
74					80% gamma percentile (KM)	34.71				90% gamma percentile (KM)		633.4
75					95% gamma percentile (KM)	2709				99% gamma percentile (KM)		13003
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (3.37, α)	0.492				Adjusted Chi Square Value (3.37, β)		0.456
79					95% Gamma Approximate KM-UCL (use when n>=50)	3815				95% Gamma Adjusted KM-UCL (use when n<50)		4110
80	95% Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50)											
81												
82	**Lognormal GOF Test on Detected Observations Only**											
83					Shapiro Wilk Test Statistic	0.622				**Shapiro Wilk GOF Test**		
84					5% Shapiro Wilk Critical Value	0.938				Detected Data Not Lognormal at 5% Significance Level		
85					Lilliefors Test Statistic	0.25				**Lilliefors GOF Test**		
86					5% Lilliefors Critical Value	0.142				Detected Data Not Lognormal at 5% Significance Level		
87	**Detected Data Not Lognormal at 5% Significance Level**											
88												
89	**Lognormal ROS Statistics Using Imputed Non-Detects**											
90					Mean in Original Scale	555.5				Mean in Log Scale		2.751
91					SD in Original Scale	3433				SD in Log Scale		1.475
92					95% t UCL (assumes normality of ROS data)	1458				95% Percentile Bootstrap UCL		1628
93					95% BCA Bootstrap UCL	2697				95% Bootstrap t UCL		120148
94					95% H-UCL (Log ROS)	92.01						
95												
96	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
97					KM Mean (logged)	2.839				KM Geo Mean		17.09
98					KM SD (logged)	1.344				95% Critical H Value (KM-Log)		2.757
99					KM Standard Error of Mean (logged)	0.213				95% H-UCL (KM -Log)		75.81
100					KM SD (logged)	1.344				95% Critical H Value (KM-Log)		2.757
101					KM Standard Error of Mean (logged)	0.213						
102												
103	**DL/2 Statistics**											
104	**DL/2 Normal**						**DL/2 Log-Transformed**					
105					Mean in Original Scale	555.5				Mean in Log Scale		2.788
106					SD in Original Scale	3433				SD in Log Scale		1.419
107					95% t UCL (Assumes normality)	1458				95% H-Stat UCL		84.3
108	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
109												
110	**Nonparametric Distribution Free UCL Statistics**											

	A	B	C	D	E	F	G	H	I	J	K	L
111	**Data do not follow a Discernible Distribution at 5% Significance Level**											
112												
113	**Suggested UCL to Use**											
114					95% KM (Chebyshev) UCL	2895						
115												
116	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
117	Recommendations are based upon data size, data distribution, and skewness.											
118	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
119	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
120												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for fluoride in fill											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:53:36								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	Fluoride											
11												
12	General Statistics											
13	Total Number of Observations					41	Number of Distinct Observations					19
14	Number of Detects					27	Number of Non-Detects					14
15	Number of Distinct Detects					18	Number of Distinct Non-Detects					1
16	Minimum Detect					110	Minimum Non-Detect					100
17	Maximum Detect					460	Maximum Non-Detect					100
18	Variance Detects					11699	Percent Non-Detects					34.15%
19	Mean Detects					240.7	SD Detects					108.2
20	Median Detects					200	CV Detects					0.449
21	Skewness Detects					0.716	Kurtosis Detects					-0.71
22	Mean of Logged Detects					5.389	SD of Logged Detects					0.442
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.897	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.923	Detected Data Not Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.169	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.167	Detected Data Not Normal at 5% Significance Level					
29	Detected Data Not Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	KM Mean					192.7	KM Standard Error of Mean					17.34
33	KM SD					109	95% KM (BCA) UCL					219.8
34	95% KM (t) UCL					221.9	95% KM (Percentile Bootstrap) UCL					220.7
35	95% KM (z) UCL					221.2	95% KM Bootstrap t UCL					224.5
36	90% KM Chebyshev UCL					244.7	95% KM Chebyshev UCL					268.3
37	97.5% KM Chebyshev UCL					301	99% KM Chebyshev UCL					365.2
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					0.562	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.747	Detected data appear Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.132	Kolmogorov-Smirnov GOF					
43	5% K-S Critical Value					0.169	Detected data appear Gamma Distributed at 5% Significance Level					
44	Detected data appear Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					5.45	k star (bias corrected MLE)					4.869
48	Theta hat (MLE)					44.18	Theta star (bias corrected MLE)					49.45
49	nu hat (MLE)					294.3	nu star (bias corrected)					262.9
50	Mean (detects)					240.7						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01				Mean		171.8
59					Maximum	460				Median		150
60					SD	131.7				CV		0.767
61					k hat (MLE)	0.625				k star (bias corrected MLE)		0.595
62					Theta hat (MLE)	275				Theta star (bias corrected MLE)		288.6
63					nu hat (MLE)	51.24				nu star (bias corrected)		48.83
64					Adjusted Level of Significance (β)	0.0441						
65					Approximate Chi Square Value (48.83, α)	33.78				Adjusted Chi Square Value (48.83, β)		33.33
66					95% Gamma Approximate UCL (use when n>=50)	248.3				95% Gamma Adjusted UCL (use when n<50)		251.7
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	192.7				SD (KM)		109
70					Variance (KM)	11873				SE of Mean (KM)		17.34
71					k hat (KM)	3.127				k star (KM)		2.914
72					nu hat (KM)	256.4				nu star (KM)		239
73					theta hat (KM)	61.62				theta star (KM)		66.11
74					80% gamma percentile (KM)	275.8				90% gamma percentile (KM)		344
75					95% gamma percentile (KM)	407.8				99% gamma percentile (KM)		546.1
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (238.98, α)	204.2				Adjusted Chi Square Value (238.98, β)		203
79					95% Gamma Approximate KM-UCL (use when n>=50)	225.5				95% Gamma Adjusted KM-UCL (use when n<50)		226.8
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk GOF Test**					
83					5% Shapiro Wilk Critical Value	0.923	Detected Data appear Lognormal at 5% Significance Level					
84					Lilliefors Test Statistic	0.108	**Lilliefors GOF Test**					
85					5% Lilliefors Critical Value	0.167	Detected Data appear Lognormal at 5% Significance Level					
86	**Detected Data appear Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	184.8				Mean in Log Scale		5.017
90					SD in Original Scale	118.1				SD in Log Scale		0.659
91					95% t UCL (assumes normality of ROS data)	215.8				95% Percentile Bootstrap UCL		215.6
92					95% BCA Bootstrap UCL	219				95% Bootstrap t UCL		218.7
93					95% H-UCL (Log ROS)	231.4						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	5.121				KM Geo Mean		167.6
97					KM SD (logged)	0.512				95% Critical H Value (KM-Log)		1.905
98					KM Standard Error of Mean (logged)	0.0815				95% H-UCL (KM -Log)		222.9
99					KM SD (logged)	0.512				95% Critical H Value (KM-Log)		1.905
100					KM Standard Error of Mean (logged)	0.0815						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**						**DL/2 Log-Transformed**					
104					Mean in Original Scale	175.6				Mean in Log Scale		4.885
105					SD in Original Scale	126.5				SD in Log Scale		0.794
106					95% t UCL (Assumes normality)	208.9				95% H-Stat UCL		237.1
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Detected Data appear Gamma Distributed at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						Suggested UCL to Use						
113					95% KM Adjusted Gamma UCL	226.8				95% GROS Adjusted Gamma UCL		251.7
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for mercury in fill											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:47:14								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	Hg											
11												
12	General Statistics											
13	Total Number of Observations					41	Number of Distinct Observations					6
14	Number of Detects					9	Number of Non-Detects					32
15	Number of Distinct Detects					6	Number of Distinct Non-Detects					1
16	Minimum Detect					0.1	Minimum Non-Detect					0.1
17	Maximum Detect					5.1	Maximum Non-Detect					0.1
18	Variance Detects					2.655	Percent Non-Detects					78.05%
19	Mean Detects					0.956	SD Detects					1.63
20	Median Detects					0.3	CV Detects					1.705
21	Skewness Detects					2.564	Kurtosis Detects					6.722
22	Mean of Logged Detects					-0.897	SD of Logged Detects					1.232
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.576	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.829	Detected Data Not Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.388	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.274	Detected Data Not Normal at 5% Significance Level					
29	Detected Data Not Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	KM Mean					0.288	KM Standard Error of Mean					0.133
33	KM SD					0.802	95% KM (BCA) UCL					0.527
34	95% KM (t) UCL					0.512	95% KM (Percentile Bootstrap) UCL					0.507
35	95% KM (z) UCL					0.506	95% KM Bootstrap t UCL					2.102
36	90% KM Chebyshev UCL					0.686	95% KM Chebyshev UCL					0.867
37	97.5% KM Chebyshev UCL					1.118	99% KM Chebyshev UCL					1.61
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					1.073	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.755	Detected Data Not Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.321	Kolmogorov-Smirnov GOF					
43	5% K-S Critical Value					0.29	Detected Data Not Gamma Distributed at 5% Significance Level					
44	Detected Data Not Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					0.709	k star (bias corrected MLE)					0.546
48	Theta hat (MLE)					1.349	Theta star (bias corrected MLE)					1.749
49	nu hat (MLE)					12.75	nu star (bias corrected)					9.836
50	Mean (detects)					0.956						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01				Mean		0.218
59					Maximum	5.1				Median		0.01
60					SD	0.829				CV		3.813
61					k hat (MLE)	0.304				k star (bias corrected MLE)		0.298
62					Theta hat (MLE)	0.716				Theta star (bias corrected MLE)		0.731
63					nu hat (MLE)	24.9				nu star (bias corrected)		24.42
64					Adjusted Level of Significance (β)	0.0441						
65					Approximate Chi Square Value (24.42, α)	14.17				Adjusted Chi Square Value (24.42, β)		13.88
66					95% Gamma Approximate UCL (use when n>=50)	0.375				95% Gamma Adjusted UCL (use when n<50)		0.383
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	0.288				SD (KM)		0.802
70					Variance (KM)	0.644				SE of Mean (KM)		0.133
71					k hat (KM)	0.129				k star (KM)		0.136
72					nu hat (KM)	10.55				nu star (KM)		11.12
73					theta hat (KM)	2.236				theta star (KM)		2.123
74					80% gamma percentile (KM)	0.286				90% gamma percentile (KM)		0.839
75					95% gamma percentile (KM)	1.613				99% gamma percentile (KM)		3.909
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (11.12, α)	4.651				Adjusted Chi Square Value (11.12, β)		4.498
79					95% Gamma Approximate KM-UCL (use when n>=50)	0.688				95% Gamma Adjusted KM-UCL (use when n<50)		0.711
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Test Statistic	0.858				**Shapiro Wilk GOF Test**		
83					5% Shapiro Wilk Critical Value	0.829				Detected Data appear Lognormal at 5% Significance Level		
84					Lilliefors Test Statistic	0.265				**Lilliefors GOF Test**		
85					5% Lilliefors Critical Value	0.274				Detected Data appear Lognormal at 5% Significance Level		
86	**Detected Data appear Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	0.218				Mean in Log Scale		-4.937
90					SD in Original Scale	0.83				SD in Log Scale		2.95
91					95% t UCL (assumes normality of ROS data)	0.436				95% Percentile Bootstrap UCL		0.457
92					95% BCA Bootstrap UCL	0.644				95% Bootstrap t UCL		1.74
93					95% H-UCL (Log ROS)	5.851						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	-1.994				KM Geo Mean		0.136
97					KM SD (logged)	0.797				95% Critical H Value (KM-Log)		2.143
98					KM Standard Error of Mean (logged)	0.132				95% H-UCL (KM -Log)		0.245
99					KM SD (logged)	0.797				95% Critical H Value (KM-Log)		2.143
100					KM Standard Error of Mean (logged)	0.132						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**						**DL/2 Log-Transformed**					
104					Mean in Original Scale	0.249				Mean in Log Scale		-2.535
105					SD in Original Scale	0.822				SD in Log Scale		1.038
106					95% t UCL (Assumes normality)	0.465				95% H-Stat UCL		0.201
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Detected Data appear Lognormal Distributed at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						**Suggested UCL to Use**						
113					KM H-UCL	0.245						
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for nickel in fill											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:48:03								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	Ni											
11												
12	General Statistics											
13	Total Number of Observations					41	Number of Distinct Observations					28
14	Number of Detects					33	Number of Non-Detects					8
15	Number of Distinct Detects					27	Number of Distinct Non-Detects					1
16	Minimum Detect					5.8	Minimum Non-Detect					5
17	Maximum Detect					72	Maximum Non-Detect					5
18	Variance Detects					186.2	Percent Non-Detects					19.51%
19	Mean Detects					17.62	SD Detects					13.64
20	Median Detects					12	CV Detects					0.774
21	Skewness Detects					2.243	Kurtosis Detects					6.796
22	Mean of Logged Detects					2.652	SD of Logged Detects					0.638
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.765	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.931	Detected Data Not Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.211	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.152	Detected Data Not Normal at 5% Significance Level					
29	Detected Data Not Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	KM Mean					15.16	KM Standard Error of Mean					2.07
33	KM SD					13.05	95% KM (BCA) UCL					18.67
34	95% KM (t) UCL					18.64	95% KM (Percentile Bootstrap) UCL					18.68
35	95% KM (z) UCL					18.56	95% KM Bootstrap t UCL					19.85
36	90% KM Chebyshev UCL					21.37	95% KM Chebyshev UCL					24.18
37	97.5% KM Chebyshev UCL					28.08	99% KM Chebyshev UCL					35.75
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					1.036	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.756	Detected Data Not Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.181	Kolmogorov-Smirnov GOF					
43	5% K-S Critical Value					0.155	Detected Data Not Gamma Distributed at 5% Significance Level					
44	Detected Data Not Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					2.462	k star (bias corrected MLE)					2.259
48	Theta hat (MLE)					7.157	Theta star (bias corrected MLE)					7.802
49	nu hat (MLE)					162.5	nu star (bias corrected)					149.1
50	Mean (detects)					17.62						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01				Mean		14.19
59					Maximum	72				Median		11
60					SD	14.1				CV		0.994
61					k hat (MLE)	0.468				k star (bias corrected MLE)		0.45
62					Theta hat (MLE)	30.31				Theta star (bias corrected MLE)		31.53
63					nu hat (MLE)	38.37				nu star (bias corrected)		36.9
64					Adjusted Level of Significance (β)	0.0441						
65					Approximate Chi Square Value (36.90, α)	23.99				Adjusted Chi Square Value (36.90, β)		23.61
66					95% Gamma Approximate UCL (use when n>=50)	21.82				95% Gamma Adjusted UCL (use when n<50)		22.17
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	15.16				SD (KM)		13.05
70					Variance (KM)	170.3				SE of Mean (KM)		2.07
71					k hat (KM)	1.349				k star (KM)		1.267
72					nu hat (KM)	110.6				nu star (KM)		103.9
73					theta hat (KM)	11.24				theta star (KM)		11.97
74					80% gamma percentile (KM)	23.87				90% gamma percentile (KM)		32.92
75					95% gamma percentile (KM)	41.82				99% gamma percentile (KM)		62.12
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (103.87, α)	81.35				Adjusted Chi Square Value (103.87, β)		80.63
79					95% Gamma Approximate KM-UCL (use when n>=50)	19.35				95% Gamma Adjusted KM-UCL (use when n<50)		19.53
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Test Statistic	0.938				**Shapiro Wilk GOF Test**		
83					5% Shapiro Wilk Critical Value	0.931				Detected Data appear Lognormal at 5% Significance Level		
84					Lilliefors Test Statistic	0.149				**Lilliefors GOF Test**		
85					5% Lilliefors Critical Value	0.152				Detected Data appear Lognormal at 5% Significance Level		
86	**Detected Data appear Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	14.84				Mean in Log Scale		2.362
90					SD in Original Scale	13.49				SD in Log Scale		0.836
91					95% t UCL (assumes normality of ROS data)	18.38				95% Percentile Bootstrap UCL		18.28
92					95% BCA Bootstrap UCL	19.1				95% Bootstrap t UCL		19.47
93					95% H-UCL (Log ROS)	20.1						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	2.449				KM Geo Mean		11.58
97					KM SD (logged)	0.699				95% Critical H Value (KM-Log)		2.054
98					KM Standard Error of Mean (logged)	0.111				95% H-UCL (KM -Log)		18.54
99					KM SD (logged)	0.699				95% Critical H Value (KM-Log)		2.054
100					KM Standard Error of Mean (logged)	0.111						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**						**DL/2 Log-Transformed**					
104					Mean in Original Scale	14.67				Mean in Log Scale		2.314
105					SD in Original Scale	13.63				SD in Log Scale		0.9
106					95% t UCL (Assumes normality)	18.25				95% H-Stat UCL		20.88
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Detected Data appear Lognormal Distributed at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						Suggested UCL to Use						
113					KM H-UCL	18.54						
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for nickel in natural soil											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:55:26								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	Ni											
11												
12	General Statistics											
13	Total Number of Observations					23	Number of Distinct Observations					14
14	Number of Detects					16	Number of Non-Detects					7
15	Number of Distinct Detects					13	Number of Distinct Non-Detects					1
16	Minimum Detect					9.5	Minimum Non-Detect					5
17	Maximum Detect					91	Maximum Non-Detect					5
18	Variance Detects					386	Percent Non-Detects					30.43%
19	Mean Detects					21.45	SD Detects					19.65
20	Median Detects					17	CV Detects					0.916
21	Skewness Detects					3.285	Kurtosis Detects					12.01
22	Mean of Logged Detects					2.855	SD of Logged Detects					0.593
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.565	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.887	Detected Data Not Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.326	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.213	Detected Data Not Normal at 5% Significance Level					
29	Detected Data Not Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	KM Mean					16.44	KM Standard Error of Mean					3.786
33	KM SD					17.58	95% KM (BCA) UCL					24.11
34	95% KM (t) UCL					22.94	95% KM (Percentile Bootstrap) UCL					22.89
35	95% KM (z) UCL					22.67	95% KM Bootstrap t UCL					29.27
36	90% KM Chebyshev UCL					27.8	95% KM Chebyshev UCL					32.95
37	97.5% KM Chebyshev UCL					40.09	99% KM Chebyshev UCL					54.11
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					1.164	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.747	Detected Data Not Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.216	Kolmogorov-Smirnov GOF					
43	5% K-S Critical Value					0.217	Detected data appear Gamma Distributed at 5% Significance Level					
44	Detected data follow Appr. Gamma Distribution at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					2.529	k star (bias corrected MLE)					2.096
48	Theta hat (MLE)					8.483	Theta star (bias corrected MLE)					10.23
49	nu hat (MLE)					80.92	nu star (bias corrected)					67.08
50	Mean (detects)					21.45						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01				Mean		14.92
59					Maximum	91				Median		11
60					SD	19.1				CV		1.28
61					k hat (MLE)	0.322				k star (bias corrected MLE)		0.309
62					Theta hat (MLE)	46.38				Theta star (bias corrected MLE)		48.33
63					nu hat (MLE)	14.8				nu star (bias corrected)		14.21
64					Adjusted Level of Significance (β)	0.0389						
65					Approximate Chi Square Value (14.21, α)	6.712				Adjusted Chi Square Value (14.21, β)		6.341
66					95% Gamma Approximate UCL (use when n>=50)	31.59				95% Gamma Adjusted UCL (use when n<50)		33.44
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	16.44				SD (KM)		17.58
70					Variance (KM)	309.1				SE of Mean (KM)		3.786
71					k hat (KM)	0.875				k star (KM)		0.79
72					nu hat (KM)	40.24				nu star (KM)		36.33
73					theta hat (KM)	18.8				theta star (KM)		20.82
74					80% gamma percentile (KM)	26.89				90% gamma percentile (KM)		40.11
75					95% gamma percentile (KM)	53.59				99% gamma percentile (KM)		85.46
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (36.33, α)	23.53				Adjusted Chi Square Value (36.33, β)		22.79
79					95% Gamma Approximate KM-UCL (use when n>=50)	25.38				95% Gamma Adjusted KM-UCL (use when n<50)		26.22
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Test Statistic	0.84	**Shapiro Wilk GOF Test**					
83					5% Shapiro Wilk Critical Value	0.887	Detected Data Not Lognormal at 5% Significance Level					
84					Lilliefors Test Statistic	0.166	**Lilliefors GOF Test**					
85					5% Lilliefors Critical Value	0.213	Detected Data appear Lognormal at 5% Significance Level					
86	**Detected Data appear Approximate Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	16.29				Mean in Log Scale		2.428
90					SD in Original Scale	18.09				SD in Log Scale		0.844
91					95% t UCL (assumes normality of ROS data)	22.77				95% Percentile Bootstrap UCL		23.03
92					95% BCA Bootstrap UCL	26.06				95% Bootstrap t UCL		28.51
93					95% H-UCL (Log ROS)	24.61						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	2.476				KM Geo Mean		11.89
97					KM SD (logged)	0.747				95% Critical H Value (KM-Log)		2.218
98					KM Standard Error of Mean (logged)	0.161				95% H-UCL (KM -Log)		22.39
99					KM SD (logged)	0.747				95% Critical H Value (KM-Log)		2.218
100					KM Standard Error of Mean (logged)	0.161						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**						**DL/2 Log-Transformed**					
104					Mean in Original Scale	15.68				Mean in Log Scale		2.265
105					SD in Original Scale	18.51				SD in Log Scale		1.035
106					95% t UCL (Assumes normality)	22.31				95% H-Stat UCL		29.05
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Detected Data appear Approximate Gamma Distributed at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						Suggested UCL to Use						
113					95% KM Adjusted Gamma UCL	26.22				95% GROS Adjusted Gamma UCL		33.44
114												
115				When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test								
116				When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL								
117												
118				Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
119				Recommendations are based upon data size, data distribution, and skewness.								
120				These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).								
121				However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
122												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for PAH in fill											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:51:50								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	PAH											
11												
12	General Statistics											
13	Total Number of Observations					41	Number of Distinct Observations					18
14	Number of Detects					17	Number of Non-Detects					24
15	Number of Distinct Detects					17	Number of Distinct Non-Detects					1
16	Minimum Detect					0.6	Minimum Non-Detect					0.5
17	Maximum Detect					85.3	Maximum Non-Detect					0.5
18	Variance Detects					415.1	Percent Non-Detects					58.54%
19	Mean Detects					14.43	SD Detects					20.37
20	Median Detects					7.5	CV Detects					1.412
21	Skewness Detects					2.91	Kurtosis Detects					9.826
22	Mean of Logged Detects					1.863	SD of Logged Detects					1.423
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.652	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.892	Detected Data Not Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.249	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.207	Detected Data Not Normal at 5% Significance Level					
29	Detected Data Not Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	KM Mean					6.276	KM Standard Error of Mean					2.328
33	KM SD					14.46	95% KM (BCA) UCL					10.76
34	95% KM (t) UCL					10.2	95% KM (Percentile Bootstrap) UCL					10.44
35	95% KM (z) UCL					10.1	95% KM Bootstrap t UCL					14.66
36	90% KM Chebyshev UCL					13.26	95% KM Chebyshev UCL					16.42
37	97.5% KM Chebyshev UCL					20.81	99% KM Chebyshev UCL					29.44
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					0.286	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.777	Detected data appear Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.115	Kolmogorov-Smirnov GOF					
43	5% K-S Critical Value					0.217	Detected data appear Gamma Distributed at 5% Significance Level					
44	Detected data appear Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					0.743	k star (bias corrected MLE)					0.651
48	Theta hat (MLE)					19.41	Theta star (bias corrected MLE)					22.15
49	nu hat (MLE)					25.27	nu star (bias corrected)					22.14
50	Mean (detects)					14.43						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01				Mean		5.989
59					Maximum	85.3				Median		0.01
60					SD	14.76				CV		2.464
61					k hat (MLE)	0.198				k star (bias corrected MLE)		0.2
62					Theta hat (MLE)	30.18				Theta star (bias corrected MLE)		29.92
63					nu hat (MLE)	16.27				nu star (bias corrected)		16.41
64					Adjusted Level of Significance (β)	0.0441						
65					Approximate Chi Square Value (16.41, α)	8.255				Adjusted Chi Square Value (16.41, β)		8.043
66					95% Gamma Approximate UCL (use when n>=50)	11.91				95% Gamma Adjusted UCL (use when n<50)		12.22
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	6.276				SD (KM)		14.46
70					Variance (KM)	209.1				SE of Mean (KM)		2.328
71					k hat (KM)	0.188				k star (KM)		0.191
72					nu hat (KM)	15.45				nu star (KM)		15.65
73					theta hat (KM)	33.31				theta star (KM)		32.88
74					80% gamma percentile (KM)	8.061				90% gamma percentile (KM)		18.97
75					95% gamma percentile (KM)	32.73				99% gamma percentile (KM)		70.9
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (15.65, α)	7.716				Adjusted Chi Square Value (15.65, β)		7.512
79					95% Gamma Approximate KM-UCL (use when n>=50)	12.73				95% Gamma Adjusted KM-UCL (use when n<50)		13.07
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Test Statistic	0.96				**Shapiro Wilk GOF Test**		
83					5% Shapiro Wilk Critical Value	0.892				Detected Data appear Lognormal at 5% Significance Level		
84					Lilliefors Test Statistic	0.124				**Lilliefors GOF Test**		
85					5% Lilliefors Critical Value	0.207				Detected Data appear Lognormal at 5% Significance Level		
86	**Detected Data appear Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	6.11				Mean in Log Scale		-0.615
90					SD in Original Scale	14.71				SD in Log Scale		2.595
91					95% t UCL (assumes normality of ROS data)	9.978				95% Percentile Bootstrap UCL		10.53
92					95% BCA Bootstrap UCL	12.14				95% Bootstrap t UCL		14.42
93					95% H-UCL (Log ROS)	99.76						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	0.367				KM Geo Mean		1.443
97					KM SD (logged)	1.541				95% Critical H Value (KM-Log)		3.01
98					KM Standard Error of Mean (logged)	0.248				95% H-UCL (KM -Log)		9.859
99					KM SD (logged)	1.541				95% Critical H Value (KM-Log)		3.01
100					KM Standard Error of Mean (logged)	0.248						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**						**DL/2 Log-Transformed**					
104					Mean in Original Scale	6.129				Mean in Log Scale		-0.0391
105					SD in Original Scale	14.7				SD in Log Scale		1.854
106					95% t UCL (Assumes normality)	9.995				95% H-Stat UCL		14.67
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Detected Data appear Gamma Distributed at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						Suggested UCL to Use						
113	Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1)					13.07						
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for lead in fill**											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:46:33								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	**Pb**											
12												
13	**General Statistics**											
14	Total Number of Observations					41	Number of Distinct Observations					34
15							Number of Missing Observations					0
16	Minimum					7.3	Mean					111.9
17	Maximum					1400	Median					39
18	SD					256.2	Std. Error of Mean					40.02
19	Coefficient of Variation					2.289	Skewness					4.272
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic					0.4	**Shapiro Wilk GOF Test**					
23	5% Shapiro Wilk Critical Value					0.941	Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.348	**Lilliefors GOF Test**					
25	5% Lilliefors Critical Value					0.137	Data Not Normal at 5% Significance Level					
26	**Data Not Normal at 5% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL					179.3	95% Adjusted-CLT UCL (Chen-1995)					206.3
31							95% Modified-t UCL (Johnson-1978)					183.8
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic					3.623	**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value					0.796	Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.241	**Kolmogorov-Smirnov Gamma GOF Test**					
37	5% K-S Critical Value					0.144	Data Not Gamma Distributed at 5% Significance Level					
38	**Data Not Gamma Distributed at 5% Significance Level**											
39												
40	**Gamma Statistics**											
41	k hat (MLE)					0.682	k star (bias corrected MLE)					0.648
42	Theta hat (MLE)					164.2	Theta star (bias corrected MLE)					172.8
43	nu hat (MLE)					55.89	nu star (bias corrected)					53.13
44	MLE Mean (bias corrected)					111.9	MLE Sd (bias corrected)					139.1
45							Approximate Chi Square Value (0.05)					37.38
46	Adjusted Level of Significance					0.0441	Adjusted Chi Square Value					36.9
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL (use when n>=50))					159.1	95% Adjusted Gamma UCL (use when n<50)					161.2
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic					0.924	**Shapiro Wilk Lognormal GOF Test**					
53	5% Shapiro Wilk Critical Value					0.941	Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic					0.129	**Lilliefors Lognormal GOF Test**					
55	5% Lilliefors Critical Value					0.137	Data appear Lognormal at 5% Significance Level					

	A	B	C	D	E	F	G	H	I	J	K	L
56	Data appear Approximate Lognormal at 5% Significance Level											
57												
58	Lognormal Statistics											
59					Minimum of Logged Data	1.988				Mean of logged Data		3.828
60					Maximum of Logged Data	7.244				SD of logged Data		1.121
61												
62	Assuming Lognormal Distribution											
63					95% H-UCL	133.8				90% Chebyshev (MVUE) UCL		137
64					95% Chebyshev (MVUE) UCL	161				97.5% Chebyshev (MVUE) UCL		194.3
65					99% Chebyshev (MVUE) UCL	259.8						
66												
67	Nonparametric Distribution Free UCL Statistics											
68	Data appear to follow a Discernible Distribution at 5% Significance Level											
69												
70	Nonparametric Distribution Free UCLs											
71					95% CLT UCL	177.8				95% Jackknife UCL		179.3
72					95% Standard Bootstrap UCL	174.4				95% Bootstrap-t UCL		384.6
73					95% Hall's Bootstrap UCL	472.2				95% Percentile Bootstrap UCL		179
74					95% BCA Bootstrap UCL	221.6						
75					90% Chebyshev(Mean, Sd) UCL	232				95% Chebyshev(Mean, Sd) UCL		286.4
76					97.5% Chebyshev(Mean, Sd) UCL	361.8				99% Chebyshev(Mean, Sd) UCL		510.1
77												
78	Suggested UCL to Use											
79					95% H-UCL	133.8						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86	ProUCL computes and outputs H-statistic based UCLs for historical reasons only.											
87	H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.											
88	It is therefore recommended to avoid the use of H-statistic based 95% UCLs.											
89	Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.											
90												

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for soil pH in fill**											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:54:37								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	**pH**											
12												
13	**General Statistics**											
14	Total Number of Observations					41	Number of Distinct Observations					23
15							Number of Missing Observations					0
16	Minimum					5.9	Mean					7.339
17	Maximum					11	Median					7.3
18	SD					0.924	Std. Error of Mean					0.144
19	Coefficient of Variation					0.126	Skewness					1.524
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic					0.906	**Shapiro Wilk GOF Test**					
23	5% Shapiro Wilk Critical Value					0.941	Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.12	**Lilliefors GOF Test**					
25	5% Lilliefors Critical Value					0.137	Data appear Normal at 5% Significance Level					
26	**Data appear Approximate Normal at 5% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL					7.582	95% Adjusted-CLT UCL (Chen-1995)					7.613
31							95% Modified-t UCL (Johnson-1978)					7.588
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic					0.432	**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value					0.746	Detected data appear Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.101	**Kolmogorov-Smirnov Gamma GOF Test**					
37	5% K-S Critical Value					0.137	Detected data appear Gamma Distributed at 5% Significance Level					
38	**Detected data appear Gamma Distributed at 5% Significance Level**											
39												
40	**Gamma Statistics**											
41	k hat (MLE)					70.41	k star (bias corrected MLE)					65.28
42	Theta hat (MLE)					0.104	Theta star (bias corrected MLE)					0.112
43	nu hat (MLE)					5774	nu star (bias corrected)					5353
44	MLE Mean (bias corrected)					7.339	MLE Sd (bias corrected)					0.908
45							Approximate Chi Square Value (0.05)					5184
46	Adjusted Level of Significance					0.0441	Adjusted Chi Square Value					5178
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL (use when n>=50))					7.578	95% Adjusted Gamma UCL (use when n<50)					7.587
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic					0.954	**Shapiro Wilk Lognormal GOF Test**					
53	5% Shapiro Wilk Critical Value					0.941	Data appear Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic					0.0933	**Lilliefors Lognormal GOF Test**					
55	5% Lilliefors Critical Value					0.137	Data appear Lognormal at 5% Significance Level					

	A	B	C	D	E	F	G	H	I	J	K	L
56	Data appear Lognormal at 5% Significance Level											
57												
58	Lognormal Statistics											
59					Minimum of Logged Data	1.775				Mean of logged Data		1.986
60					Maximum of Logged Data	2.398				SD of logged Data		0.119
61												
62	Assuming Lognormal Distribution											
63					95% H-UCL	7.576				90% Chebyshev (MVUE) UCL		7.747
64					95% Chebyshev (MVUE) UCL	7.932				97.5% Chebyshev (MVUE) UCL		8.189
65					99% Chebyshev (MVUE) UCL	8.695						
66												
67	Nonparametric Distribution Free UCL Statistics											
68	Data appear to follow a Discernible Distribution at 5% Significance Level											
69												
70	Nonparametric Distribution Free UCLs											
71					95% CLT UCL	7.576				95% Jackknife UCL		7.582
72					95% Standard Bootstrap UCL	7.574				95% Bootstrap-t UCL		7.619
73					95% Hall's Bootstrap UCL	7.656				95% Percentile Bootstrap UCL		7.58
74					95% BCA Bootstrap UCL	7.627						
75					90% Chebyshev(Mean, Sd) UCL	7.772				95% Chebyshev(Mean, Sd) UCL		7.968
76					97.5% Chebyshev(Mean, Sd) UCL	8.24				99% Chebyshev(Mean, Sd) UCL		8.775
77												
78	Suggested UCL to Use											
79					95% Student's-t UCL	7.582						
80												
81	When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test											
82	When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL											
83												
84	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
85	Recommendations are based upon data size, data distribution, and skewness.											
86	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
87	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
88												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for tin in fill											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:49:07								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	Sn											
11												
12	General Statistics											
13	Total Number of Observations					41	Number of Distinct Observations					9
14	Number of Detects					8	Number of Non-Detects					33
15	Number of Distinct Detects					8	Number of Distinct Non-Detects					1
16	Minimum Detect					27	Minimum Non-Detect					10
17	Maximum Detect					730	Maximum Non-Detect					10
18	Variance Detects					57302	Percent Non-Detects					80.49%
19	Mean Detects					249.4	SD Detects					239.4
20	Median Detects					220	CV Detects					0.96
21	Skewness Detects					1.179	Kurtosis Detects					1.353
22	Mean of Logged Detects					4.983	SD of Logged Detects					1.218
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.872	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.818	Detected Data appear Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.176	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.283	Detected Data appear Normal at 5% Significance Level					
29	Detected Data appear Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	KM Mean					56.71	KM Standard Error of Mean					22.88
33	KM SD					137	95% KM (BCA) UCL					100.7
34	95% KM (t) UCL					95.24	95% KM (Percentile Bootstrap) UCL					97.83
35	95% KM (z) UCL					94.34	95% KM Bootstrap t UCL					123.1
36	90% KM Chebyshev UCL					125.4	95% KM Chebyshev UCL					156.4
37	97.5% KM Chebyshev UCL					199.6	99% KM Chebyshev UCL					284.4
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					0.347	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.735	Detected data appear Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.217	Kolmogorov-Smirnov GOF					
43	5% K-S Critical Value					0.301	Detected data appear Gamma Distributed at 5% Significance Level					
44	Detected data appear Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					1.07	k star (bias corrected MLE)					0.752
48	Theta hat (MLE)					233.2	Theta star (bias corrected MLE)					331.7
49	nu hat (MLE)					17.11	nu star (bias corrected)					12.03
50	Mean (detects)					249.4						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01					Mean	48.67
59					Maximum	730					Median	0.01
60					SD	141.6					CV	2.909
61					k hat (MLE)	0.12					k star (bias corrected MLE)	0.127
62					Theta hat (MLE)	406.1					Theta star (bias corrected MLE)	382.2
63					nu hat (MLE)	9.826					nu star (bias corrected)	10.44
64					Adjusted Level of Significance (β)	0.0441						
65					Approximate Chi Square Value (10.44, α)	4.219					Adjusted Chi Square Value (10.44, β)	4.075
66					95% Gamma Approximate UCL (use when n>=50)	120.4					95% Gamma Adjusted UCL (use when n<50)	124.7
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	56.71					SD (KM)	137
70					Variance (KM)	18782					SE of Mean (KM)	22.88
71					k hat (KM)	0.171					k star (KM)	0.175
72					nu hat (KM)	14.04					nu star (KM)	14.35
73					theta hat (KM)	331.2					theta star (KM)	324.1
74					80% gamma percentile (KM)	69.09					90% gamma percentile (KM)	170.7
75					95% gamma percentile (KM)	302					99% gamma percentile (KM)	671.8
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (14.35, α)	6.808					Adjusted Chi Square Value (14.35, β)	6.618
79					95% Gamma Approximate KM-UCL (use when n>=50)	119.5					95% Gamma Adjusted KM-UCL (use when n<50)	122.9
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Test Statistic	0.913	**Shapiro Wilk GOF Test**					
83					5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level					
84					Lilliefors Test Statistic	0.213	**Lilliefors GOF Test**					
85					5% Lilliefors Critical Value	0.283	Detected Data appear Lognormal at 5% Significance Level					
86	**Detected Data appear Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	51.6					Mean in Log Scale	0.747
90					SD in Original Scale	140.6					SD in Log Scale	2.953
91					95% t UCL (assumes normality of ROS data)	88.58					95% Percentile Bootstrap UCL	89.83
92					95% BCA Bootstrap UCL	104					95% Bootstrap t UCL	129.4
93					95% H-UCL (Log ROS)	1744						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	2.826					KM Geo Mean	16.87
97					KM SD (logged)	1.176					95% Critical H Value (KM-Log)	2.551
98					KM Standard Error of Mean (logged)	0.196					95% H-UCL (KM -Log)	54.11
99					KM SD (logged)	1.176					95% Critical H Value (KM-Log)	2.551
100					KM Standard Error of Mean (logged)	0.196						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**						**DL/2 Log-Transformed**					
104					Mean in Original Scale	52.68					Mean in Log Scale	2.268
105					SD in Original Scale	140.1					SD in Log Scale	1.446
106					95% t UCL (Assumes normality)	89.54					95% H-Stat UCL	53.2
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Detected Data appear Normal Distributed at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						Suggested UCL to Use						
113					95% KM (t) UCL	95.24						
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for zinc in fill**											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:49:57								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	**Zn**											
12												
13	**General Statistics**											
14	Total Number of Observations					41	Number of Distinct Observations					33
15							Number of Missing Observations					0
16	Minimum					6.1	Mean					492.3
17	Maximum					14000	Median					73
18	SD					2184	Std. Error of Mean					341
19	Coefficient of Variation					4.436	Skewness					6.22
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic					0.221	**Shapiro Wilk GOF Test**					
23	5% Shapiro Wilk Critical Value					0.941	Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.444	**Lilliefors GOF Test**					
25	5% Lilliefors Critical Value					0.137	Data Not Normal at 5% Significance Level					
26	**Data Not Normal at 5% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL					1067	95% Adjusted-CLT UCL (Chen-1995)					1407
31							95% Modified-t UCL (Johnson-1978)					1122
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic					6.017	**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value					0.842	Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.306	**Kolmogorov-Smirnov Gamma GOF Test**					
37	5% K-S Critical Value					0.148	Data Not Gamma Distributed at 5% Significance Level					
38	**Data Not Gamma Distributed at 5% Significance Level**											
39												
40	**Gamma Statistics**											
41	k hat (MLE)					0.371	k star (bias corrected MLE)					0.36
42	Theta hat (MLE)					1326	Theta star (bias corrected MLE)					1366
43	nu hat (MLE)					30.45	nu star (bias corrected)					29.55
44	MLE Mean (bias corrected)					492.3	MLE Sd (bias corrected)					820.1
45							Approximate Chi Square Value (0.05)					18.14
46	Adjusted Level of Significance					0.0441	Adjusted Chi Square Value					17.81
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL (use when n>=50))					802	95% Adjusted Gamma UCL (use when n<50)					816.8
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic					0.919	**Shapiro Wilk Lognormal GOF Test**					
53	5% Shapiro Wilk Critical Value					0.941	Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic					0.149	**Lilliefors Lognormal GOF Test**					
55	5% Lilliefors Critical Value					0.137	Data Not Lognormal at 5% Significance Level					

	A	B	C	D	E	F	G	H	I	J	K	L
56	Data Not Lognormal at 5% Significance Level											
57												
58	Lognormal Statistics											
59					Minimum of Logged Data	1.808				Mean of logged Data		4.405
60					Maximum of Logged Data	9.547				SD of logged Data		1.407
61												
62	Assuming Lognormal Distribution											
63					95% H-UCL	414.4				90% Chebyshev (MVUE) UCL		388.5
64					95% Chebyshev (MVUE) UCL	469				97.5% Chebyshev (MVUE) UCL		580.8
65					99% Chebyshev (MVUE) UCL	800.3						
66												
67	Nonparametric Distribution Free UCL Statistics											
68	Data do not follow a Discernible Distribution (0.05)											
69												
70	Nonparametric Distribution Free UCLs											
71					95% CLT UCL	1053				95% Jackknife UCL		1067
72					95% Standard Bootstrap UCL	1038				95% Bootstrap-t UCL		7734
73					95% Hall's Bootstrap UCL	3815				95% Percentile Bootstrap UCL		1176
74					95% BCA Bootstrap UCL	1604						
75					90% Chebyshev(Mean, Sd) UCL	1515				95% Chebyshev(Mean, Sd) UCL		1979
76					97.5% Chebyshev(Mean, Sd) UCL	2622				99% Chebyshev(Mean, Sd) UCL		3886
77												
78	Suggested UCL to Use											
79					95% Chebyshev (Mean, Sd) UCL	1979						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for fluoride in natural soil											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.101/10/2020 15:56:22								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	Fluoride											
11												
12	General Statistics											
13	Total Number of Observations					23	Number of Distinct Observations					15
14	Number of Detects					16	Number of Non-Detects					7
15	Number of Distinct Detects					14	Number of Distinct Non-Detects					1
16	Minimum Detect					140	Minimum Non-Detect					100
17	Maximum Detect					910	Maximum Non-Detect					100
18	Variance Detects					45380	Percent Non-Detects					30.43%
19	Mean Detects					430.6	SD Detects					213
20	Median Detects					450	CV Detects					0.495
21	Skewness Detects					0.698	Kurtosis Detects					0.09
22	Mean of Logged Detects					5.945	SD of Logged Detects					0.52
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic					0.941	Shapiro Wilk GOF Test					
26	5% Shapiro Wilk Critical Value					0.887	Detected Data appear Normal at 5% Significance Level					
27	Lilliefors Test Statistic					0.136	Lilliefors GOF Test					
28	5% Lilliefors Critical Value					0.213	Detected Data appear Normal at 5% Significance Level					
29	Detected Data appear Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	KM Mean					330	KM Standard Error of Mean					49.46
33	KM SD					229.7	95% KM (BCA) UCL					416.1
34	95% KM (t) UCL					414.9	95% KM (Percentile Bootstrap) UCL					412.6
35	95% KM (z) UCL					411.3	95% KM Bootstrap t UCL					427.8
36	90% KM Chebyshev UCL					478.4	95% KM Chebyshev UCL					545.6
37	97.5% KM Chebyshev UCL					638.9	99% KM Chebyshev UCL					822.1
38												
39	Gamma GOF Tests on Detected Observations Only											
40	A-D Test Statistic					0.287	Anderson-Darling GOF Test					
41	5% A-D Critical Value					0.742	Detected data appear Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic					0.151	Kolmogorov-Smirnov GOF					
43	5% K-S Critical Value					0.216	Detected data appear Gamma Distributed at 5% Significance Level					
44	Detected data appear Gamma Distributed at 5% Significance Level											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)					4.303	k star (bias corrected MLE)					3.538
48	Theta hat (MLE)					100.1	Theta star (bias corrected MLE)					121.7
49	nu hat (MLE)					137.7	nu star (bias corrected)					113.2
50	Mean (detects)					430.6						
51												
52	Gamma ROS Statistics using Imputed Non-Detects											
53	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
54	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											

	A	B	C	D	E	F	G	H	I	J	K	L
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01				Mean		312.9
59					Maximum	910				Median		260
60					SD	254.3				CV		0.813
61					k hat (MLE)	0.509				k star (bias corrected MLE)		0.472
62					Theta hat (MLE)	614.5				Theta star (bias corrected MLE)		663.3
63					nu hat (MLE)	23.42				nu star (bias corrected)		21.7
64					Adjusted Level of Significance (β)	0.0389						
65					Approximate Chi Square Value (21.70, α)	12.11				Adjusted Chi Square Value (21.70, β)		11.6
66					95% Gamma Approximate UCL (use when n>=50)	560.5				95% Gamma Adjusted UCL (use when n<50)		585.6
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	330				SD (KM)		229.7
70					Variance (KM)	52739				SE of Mean (KM)		49.46
71					k hat (KM)	2.065				k star (KM)		1.825
72					nu hat (KM)	94.98				nu star (KM)		83.93
73					theta hat (KM)	159.8				theta star (KM)		180.9
74					80% gamma percentile (KM)	499.4				90% gamma percentile (KM)		655.9
75					95% gamma percentile (KM)	806				99% gamma percentile (KM)		1141
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (83.93, α)	63.81				Adjusted Chi Square Value (83.93, β)		62.54
79					95% Gamma Approximate KM-UCL (use when n>=50)	434				95% Gamma Adjusted KM-UCL (use when n<50)		442.8
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Test Statistic	0.967				**Shapiro Wilk GOF Test**		
83					5% Shapiro Wilk Critical Value	0.887				Detected Data appear Lognormal at 5% Significance Level		
84					Lilliefors Test Statistic	0.17				**Lilliefors GOF Test**		
85					5% Lilliefors Critical Value	0.213				Detected Data appear Lognormal at 5% Significance Level		
86	**Detected Data appear Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	333.8				Mean in Log Scale		5.559
90					SD in Original Scale	231.7				SD in Log Scale		0.754
91					95% t UCL (assumes normality of ROS data)	416.7				95% Percentile Bootstrap UCL		412.9
92					95% BCA Bootstrap UCL	420.1				95% Bootstrap t UCL		425.3
93					95% H-UCL (Log ROS)	493.4						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	5.537				KM Geo Mean		253.9
97					KM SD (logged)	0.746				95% Critical H Value (KM-Log)		2.217
98					KM Standard Error of Mean (logged)	0.161				95% H-UCL (KM -Log)		477.1
99					KM SD (logged)	0.746				95% Critical H Value (KM-Log)		2.217
100					KM Standard Error of Mean (logged)	0.161						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**						**DL/2 Log-Transformed**					
104					Mean in Original Scale	314.8				Mean in Log Scale		5.326
105					SD in Original Scale	251				SD in Log Scale		1.048
106					95% t UCL (Assumes normality)	404.7				95% H-Stat UCL		635.5
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Detected Data appear Normal Distributed at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
111												
112						Suggested UCL to Use						
113					95% KM (t) UCL	414.9						
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

APPENDIX J

Preliminary Groundwater Vapour Risk Assessment

1.0 PRELIMINARY ASSESSMENT OF GROUNDWATER VAPOUR RISK

The following sections describe how assessment criteria for volatile chemicals were identified. The first stage of the criteria identification involved listing the volatile chemicals from the groundwater dataset. In order to assess potential vapour concentrations from volatile chemicals in groundwater an estimation of groundwater vapour concentrations was undertaken using Henry's Law constants as described below, which then allowed comparison of the converted groundwater vapour concentrations against soil vapour or ambient air screening guidelines.

Based on the proposed re-development at the site the following scenarios were considered:

- Scenario A – Residential land-use, slab-on-grade
- Scenario B – High-density Residential land use, assuming a one level basement with residential occupation on ground floor and upper levels
- Scenario C – High-density Residential land use, assuming a two-level basement with residential occupation above. In this scenario, only the lower basement level is assumed to be partly or fully submerged below ground with the upper basement level at the ground level.

Golder understands that the proposed future onsite basements would not be used for habitable (e.g. residential or hotel) purposes but rather as carparking or storage uses where the daily exposure time inside the basements will be lower. NEPC (2013) and CRC CARE (2011) note that for "*For multistorey buildings where non-residential uses (e.g. car parking or commercial use) exist in a basement or at ground level, then land use category D (commercial/industrial) should be applied".* As such, while residential criteria were adopted for the above Scenario A, commercial criteria were adopted for Scenario B and C. Conservatively, Scenario C was considered via the assessment of Scenario B.

1.1 Approach

Estimation of potential vapour concentrations arising from groundwater was undertaken using the following process:

- ***Stage 1***: In accordance with NEPC (2013) chemicals with a published Henry's Law constant greater than $1x10^{-5}$ atm-m^3/mol were considered as being potentially volatile from groundwater.
- ***Stage 2***: Estimated vapour concentration (overlying groundwater) was derived using the adopted maximum reported chemical concentration in groundwater and dimensionless Henry's Law constant value.
- ***Stage 3***: A theoretical vapour concentration in indoor air (overlying surface or basement building) was estimated by multiplying the estimated subsurface vapour concentration (overlying groundwater) by an attenuation factor of 100 (in units of $mg/m^3_{indoor\ air}$ per $mg/m^3_{groundwater\ vapour\ concentration}$) consisting of:
  - attenuation factor of 10 was applied to represent the migration of soil vapour through the unsaturated soil profile above the groundwater (groundwater depth ranged from 4.3 to 9.0 m below top of well casing (adopted as indicative of depth below local ground level):
  - attenuation factor of 10 was applied to represent the migration of soil vapour through the building slab consistent with the approach adopted in the NEPM (2013) for derivation of interim soil vapour health investigation levels.

The estimated indoor air vapour concentrations were then compared against:

- NEPC (2013) Health Investigation Levels (HIL) – Interim soil vapour health investigation levels for volatile organic chlorinated compounds, Commercial/Industrial HIL-D and Residential HIL-A. As the interim soil vapour HILs were derived to assess soil vapour rather than indoor air to convert these criteria to an estimated indoor air criterion a scaling factor of 0.1 was applied in accordance with NEPC (2013).
- CRC CARE (2011) Target Air Concentration Corresponding to Health Screening Levels (HSL), Commercial/Industrial (HSL-D).

In the absence of other Australian guidelines relevant to soil vapour assessments, the following overseas ambient air (indoor or outdoor) guidelines were adopted in the following hierarchy:

- WHO (2010) Guidelines for Indoor Air Quality – Selected Pollutants.
- WHO (2000) Guidelines for Air Quality. More recent WHO documents, published after the WHO (2000) Air Quality Guidelines, were also considered where more recent screening criteria were available (for example, chloroform WHO (2004) tolerable concentration value).
- US EPA (2020) Regional Screening Levels for Residential and Industrial Air. The 'industrial air' values are considered equivalent to generic Australian commercial/industrial land use scenario.

The adopted US EPA (2020) carcinogenic criteria for dichloromethane is based on excess lifetime cancer risk (ELCR) of $1x10^{-6}$. National standards in Australia on acceptable risk levels for carcinogenic contaminants has not yet been developed, however the following is noted by the NEPM and EPA Victoria:

- The Victorian Environment Protection Authority (EPA Victoria) currently recommends that "*an excess incremental life time cancer risk of 1 x 10^{-5} is to be applied in the risk assessment of carcinogenic substances as long as a single compound is present/ assessed. However, when multiple carcinogenic substances are present, EPA recommends/expects the sum of individual risks should not exceed 1 x 10^{-5}*." (EPA, 2007).
- The National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC, 2013), states: "*When using non-threshold TRV as dose-response criteria, the recommended acceptable incremental lifetime risk of developing cancer arising from exposure to single or multiple carcinogens is 1 in 100,000 (10^{-5}) consistent with enHealth (2012)*."

As such, the acceptable risk level indicated by the NEPM and EPA Victoria of ELCR of $1x10^{-5}$ has been adopted in this vapour risk screening assessment and a factor of 10 has been applied to the US EPA (2020) carcinogenic criteria for dichloromethane to account for this.

1.2 Estimation of Groundwater Vapour

The above Stage 1 to Stage 3 process has been presented in Table A for Scenario A and Table B for Scenario B, which consolidates the volatile chemicals detected in the groundwater data including:

- Acetone;
- Dichloromethane
- Chloroform; and
- Methyl Ethyl Ketone (MEK).

Based on the assessment undertaken, the vapour concentrations estimated using the maximum groundwater results were all below the adopted screening criteria and hence suggests risks would be low and acceptable for Scenarios A, B and C.

1.3 References

CRC CARE (2011). CRC for Contamination Assessment and Remediation of the Environment. Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater. Part 1 Technical Development Document.

enHealth (2012). Environmental Health Risk Assessment. Guidelines for Assessing Human Health Risks from Environmental Hazards. Department of Health, enHealth Committee. Commonwealth of Australia, Canberra.

NEPC (2013). National Environment Protection Council, December 1999, updated 2013. National Environment Protection (Assessment of Site Contamination) Measure.

US EPA (2020). United States Environmental Protection Agency and Oak Ridge National Laboratory, Regional Screening Levels for Chemical Contaminants at Superfund Sites, May 2020. Available at: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

WHO (2010). World Health Organisation. WHO Guidelines for Indoor Air Quality. Selected Pollutants. Europe, World Health Organization, Geneva.

WHO (2004) Concise International Chemical Assessment Document 58 – Chloroform. World Health Organization Geneva.

GOLDER

SUBJECT	TABLE J1 GROUNDWATER VOLATILE ASSESSMENT		
Job No.:	20145767	Made by: JH	Date: 9/10/2020
Reference	Appendix J	Checked: AB	Date: 9/10/2020

Scenario A - Residential
Slab-on-grade

Depth to Groundwater = ranging from approximately 4.2 to 9.0 m below ground level

					SCREENING STAGE 1						SCREENING STAGE 2							SCREENING STAGE 3					
Chemicals	CAS Number	Adopted Max Conc. (mg/L)	Bore ID	Date	Henry's Law Constant				STAGE 1 OUTCOME	Screened In Chemical Conc. (mg/L)	Vapour Conc. Above GW (mg/m3)	Carcinogen	Screening Indoor Air Criteria (mg/m3)	Reference	Vapour Conc. > Criteria	STAGE 2 OUTCOME	Screened In Chemical Conc. (mg/L)	Attenuation Factor GW:IndoorAir (mg/m3:mg/m3)	Vapour Conc. Indoor Air (mg/m3)	Screening Indoor Air Criteria (mg/m3)	Vapour Conc. > Criteria	STAGE 3 OUTCOME	Orders of Magnitude Exceedance
					(atm-m3/mol)	(unitless 25°C)	Reference	>1E-05 (atm-m3/mol)															
Acetone	67-64-1	0.002	various	1/10/2020	3.50E-05	1.43E-03	USEPA (2020)	yes	Screens in	0.002	0.0029	n	32	US EPA (2020)	no								
Dichloromethane	75-09-2	0.002	GA20-BH12	1/10/2020	3.25E-03	1.33E-01	USEPA (2020)	yes	Screens in	0.002	0.27	c	0.63	US EPA (2020)	no								
Chloroform	67-66-3	0.009	GA20-BH03/BH10	1/10/2020	3.67E-03	1.50E-01	USEPA (2020)	yes	Screens in	0.009	1.35	n	0.14	WHO (2004)	yes	Screens in	0.009	0.010	0.0135	0.14	no		
Methyl Ethyl Ketone (MEK)	78-93-3	0.013	GA20-BH05	1/10/2020	5.69E-05	2.33E-03	USEPA (2020)	yes	Screens in	0.013	0.030	c	5.2	US EPA (2020)	no								

NOTES
c = cancer; n = noncancer

US EPA (2010). United States Environment Protection Agency and Oak Ridge National Laboratory, Regional Screening Levels for Chemical Contaminants at Superfund Sites.

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SUBJECT	TABLE J1 GROUNDWATER VOLATILE ASSESSMENT		
Job No.:	20145767	Made by: JH	Date: 9/10/2020
Reference	Appendix J	Checked: AB	Date: 9/10/2020

Scenario A - Residential
Slab-on-grade

Depth to Groundwater = ranging from approximately 4.2 to 9.0 m below ground level

					SCREENING STAGE 1						SCREENING STAGE 2							SCREENING STAGE 3					
Chemicals	CAS Number	Adopted Max Conc. (mg/L)	Bore ID	Date	Henry's Law Constant				STAGE 1 OUTCOME	Screened In Chemical Conc. (mg/L)	Vapour Conc. Above GW (mg/m3)	Carcinogen	Screening Indoor Air Criteria (mg/m3)	Reference	Vapour Conc. > Criteria	STAGE 2 OUTCOME	Screened In Chemical Conc. (mg/L)	Attenuation Factor GW:IndoorAir (mg/m3:mg/m3)	Vapour Conc. Indoor Air (mg/m3)	Screening Indoor Air Criteria (mg/m3)	Vapour Conc. > Criteria	STAGE 3 OUTCOME	Orders of Magnitude Exceedance
					(atm-m3/mol)	(unitless 25°C)	Reference	>1E-05 (atm-m3/mol)															
Acetone	67-64-1	0.002	various	1/10/2020	3.50E-05	1.43E-03	USEPA (2020)	yes	Screens in	0.002	0.0029	n	32	US EPA (2020)	no								
Dichloromethane	75-09-2	0.002	GA20-BH12	1/10/2020	3.25E-03	1.33E-01	USEPA (2020)	yes	Screens in	0.002	0.27	c	0.63	US EPA (2020)	no								
Chloroform	67-66-3	0.009	GA20-BH03/BH10	1/10/2020	3.67E-03	1.50E-01	USEPA (2020)	yes	Screens in	0.009	1.35	n	0.14	WHO (2004)	yes	Screens in	0.009	0.010	0.0135	0.14	no		
Methyl Ethyl Ketone (MEK)	78-93-3	0.013	GA20-BH05	1/10/2020	5.69E-05	2.33E-03	USEPA (2020)	yes	Screens in	0.013	0.030	c	5.2	US EPA (2020)	no								

NOTES
c = cancer; n = noncancer

US EPA (2010). United States Environment Protection Agency and Oak Ridge National Laboratory, Regional Screening Levels for Chemical Contaminants at Superfund Sites.

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