Draft
Phase II Environmental Site Assessment
1871 Merivale Road
Ottawa, Ontario

Prepared For:
Benson Group Inc.
700 Education Boulevard
Cornwall, ON K6H 6B8
Attn: Martin Benson

Source: AEL Site Visit, 2017

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AEL Project: 10869-01

I. Executive Summary

i. Location

The Site is located at 1871 Merivale Road, Ottawa, ON. The Site is situated on the east side of Merivale Road, south of West Hunt Club Road, north of Jamie Avenue and west of Sunderland Street, in the City of Ottawa (Nepean), Ontario.

ii. Objective

AEL environment (AEL) was retained by the client to conduct a Phase II Environmental Site Assessment (ESA) as a follow-up to recommendations made in in a Phase I ESA completed by AEL.

Testing was to determine whether the soil and water samples collected from the Site met the Ministry of the Environment and Climate Change (MOECC) Soil and Groundwater Standards under Part XV.1 of the Environmental Protection Act (MOECC Standard) Table 2 (potable water condition for commercial land use) as required by Ontario Regulation 153/04, due to the current use of the Site at the time of reporting.

iii. Investigation

On November 15 and 16, 2017, six (6) test holes were advanced at the Site, in which three (3) monitoring wells were installed. Based on field observations, AEL selected soil samples from all six (6) test holes and groundwater samples from all three (3) wells for analysis by a laboratory certified by the Canadian Association of Laboratory Accreditation (CALA). Soil samples were collected at different depths, from ground surface to about 6.0 meters (m) below the ground surface (bgs) and wells were purged prior to sampling.

In order to confirm groundwater metals impact levels, one (1) additional groundwater sample was obtained from MW6 in January, 2018, for laboratory analysis by a CALA certified laboratory.

iv. Results and Recommendations

Analytical results were compared against the applicable MOECC Table 2 "Full Depth Generic Site Condition Standards in a Potable Ground Water Condition" standards for coarse grained soil as determined by AEL in accordance with O. Reg. 153/04. The Industrial/Commercial/Community Property Use Standards were considered due to the use of the Site at the time of reporting.

Soil samples collected from the Site were found to meet the applicable standards.

Laboratory results showed one (1) groundwater sample, along with the duplicate sample, did not meet the applicable standard for chloride and sodium. The exceedance was located at monitoring well MW1. The area impacted by chloride and sodium is located within the area of the southwest

property boundary, near the intersection of Merivale Road and Jamie Avenue, adjacent to the roadway and utility corridor, within high traffic areas. MTO and/or municipal snow and ice removal activities have likely impacted groundwater in the area through the use of road salt in de-icing activities, and the presence of underground utilities along the site boundary provide a preferential pathway for the movement of groundwater, and dissolved contaminants, onto the Site. Concentrations of chloride and sodium decrease with distance away from the municipal roadways, as can be seen at MW4 and MW6, which are both below the applicable site condition standards (SCSs). It is reasonable to conclude, based on the respective high-traffic surface of Merivale Road and Jamie Avenue, that dissolved de-icing salts is the significant contributor to the chloride and sodium that is present in groundwater at the southwest corner of the Site. Accordingly, the chloride and sodium exceedances are considered to be the result of snow and de-icing measures as contemplated by Sec 48 (3) of Reg.153/04 and are deemed not to be an exceedance for the purpose of Part XV.1 of the Act. O. Reg. 153/04, s. 48 (3). Further investigation(s) into chloride and sodium in groundwater is not warranted at this time.

Laboratory results also showed one (1) groundwater sample did not meet the applicable standard for cobalt. The exceedance was located at monitoring well MW6. As this exceedance was found at only one location, along the north property boundary of the Site, impacts are likely related to the historical operation of an automobile junkyard, which was adjacent to the north side of the Site. AEL re-sampled MW6 in January, 2018, and the second groundwater results obtained were determined to be below the applicable standard. It should be noted that the one potable well located within 250m of the site study area (influencing the city to consider the site a potable groundwater condition site) is upgradient of the site, and hence not affected by the site groundwater condition.

AEL is of the opinion that the chloride and sodium groundwater exceedances were the result of de-icing activities done for winter road safety purposes, and no further assessment work is recommended for chloride and sodium in groundwater at this time.

As land use of the Site is intended to remain commercial, and no land use change is planned, a RSC is not required by the MOECC at this time.

In accordance with O. Reg. 153/04, AEL cannot currently confirm that soil and groundwater conditions at the Site currently meet MOECC Table 2 standards for industrial/commercial/community land use in a potable groundwater comparison.

If the city reconsiders the potability standards for the site due to the upgradient nature of the potable well in question, in accordance with O. Reg. 153/04, AEL could confirm that soil and groundwater conditions at the Site currently meet MOECC Table 3 standards for industrial/commercial/community land use in a non-potable groundwater comparison.

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If a land use change to a more sensitive land use is planned, a RSC would be required. If a RSC is required, the following would need to be addressed:

- Sampling of all impacted groundwater wells would be required over four (4) consecutive quarterly sampling events, in order to document groundwater contaminants are no longer present or the initial exceedance was a temporary anomaly, in concentrations above the applicable standard.
- The exceedance of cobalt in groundwater at one location, if determined to be persistent, would require further horizontal and vertical delineation.
- Sampling of all impacted groundwater wells would then be required over four (4) consecutive quarterly sampling events, in order to document groundwater contaminants were no longer present after remediation.

The chloride and sodium exceedance in groundwater is considered to be the result of snow and de-icing measures as contemplated by s. 48 (3) of O. Reg. 153/04 and are deemed not to be an exceedance for the purpose of Part XV.1 of the Act.

v. Limitations

The report was completed for the sole use of the client and AEL only in accordance with the terms of reference and the limitations, during the 2017/2018 site evaluation stage. Others with an interest in the Site must decide on the Site conditions and conduct their own investigation to determine how or if the Site affects them.

vi. Conflict of Interest

Neither AEL nor its officers know of any conflicts of interest AEL has respecting the Site or the owner of the Site.

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1. Introduction

1.1 Site Description

1.1.1 Site Location

The Site is located at 1871 Merivale Road, Ottawa, ON. The Site is situated on the east side of Merivale Road, south of West Hunt Club Road, north of Jamie Avenue and west of Sunderland Street, in the City of Ottawa (Nepean), Ontario.

The Site has an area of approximately 5,818 m2 (0.5818 Ha), according to estimates from Geowarehouse, a property database. The Site is located in an industrial/commercial area as determined from the Site walkover and from records review. Figure 1a shows the Site and study area.

1.1.2 Legal Description

Based on a titles review, the Site legal description is Part of Lot 28, Concession A (RF), Part of Lots 69, 70, 71, 87, 88 and 89 and part of Clarke Road Plan 382 closed by NP51189, part 1 Plan 4R-12281, Nepean. The property identification number (PIN) is 04628-0127 (LT). The City of Ottawa tax roll number is 0614120-50507600.

1.1.3 Geographic Centre

The Site is centered on approximately 18T 443,425 m east, 5,020,318 m north and is at a surface elevation of about 88 m above sea level (ASL) according to contour maps from Land Information Ontario (LIO).

1.2 Property Ownership

1.2.1 Owner

The owner of record was:

Benson Group Inc.

1.2.2 Client

The client of record was:

Benson Group Inc.
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700 Education Blvd.
Cornwall, ON K6H 6B8

1.3 Current and Proposed Future Uses

At the time of reporting, the site was occupied by an inactive commercial tire retailer, associated warehouse and attached office space. The site building was located on the north central portion of the property, and surrounded by

asphalt. At the time of this report, the future use of the property was anticipated to remain commercial.

1.4 Applicable Site Condition Standard

AEL used the information as follows in determining the applicable criteria for use at the Site.

1.4.1 Land Use

The Site is occupied by an inactive commercial tire retailer, associated warehouse and attached office space. The future use of the property was anticipated to remain commercial. The surrounding was a mix of commercial and industrial land use in nature.

1.4.2 Non-Potable Water Criteria and Well Head Protection

Well records searched on the Ministry of Environment and Climate Change (MOECC) online database found no well records for the Site.

The search found eighteen (18) well records for surrounding lands within 250 m of the Site. Twelve of these wells was listed as industrial, commercial, public or domestic water supply wells, but due to the dates of installation (from 1959 to 1977), the level of development in the area, and the absence of wellhead protection zones or source water protection zones within 250 m of the Site, it is unlikely these wells are still used. The remainder of the well records indicated final use as observation.

AEL contacted the City of Ottawa regarding the application of non-potable groundwater criteria at the Site. The City expressed an objection to the use of non-potable criteria based on the presence of a drinking water well located within 250 m of the Site, and as such AEL considered a potable condition for assessment purposes.

The one noted potable well confirmed to currently be in use has been determined by AEL to be approximately 135m upgradient of the site, located at 1883 Merivale Road, Ottawa.

1.4.3 Environmentally Sensitive Site

AEL considered if the Site was environmentally sensitive based on O. Reg. 153/04.

1.4.3.1 Environmentally Sensitive Area

The Site does not fall within the boundary of any environmentally sensitive areas.

1.4.3.2 Soil pH Condition

AEL considered soil pH for the Site based on chemical results. Laboratory analysis indicated that the lowest pH of the soil tested was 6.82 and the

highest pH value was 7.36. The soil is thus in the acceptable range of greater 5 and less than 9.

1.4.4 Shallow Soil

According to Ontario Regulation 153/04 a site is considered a shallow soil Site only if more than 1/3 of the area has less than 2 m of soil cover over the bedrock. The depth to bedrock on the Site was more than 2 m and as such AEL does not consider the Site to be a shallow soil site.

1.4.5 Near a Water Body

The nearest permanent surface water body was more than 30 m from the Site and as such AEL does not consider the Site to be near a body of water.

1.4.6 Criteria Used to Evaluate the Results

Under Ontario Regulation 153/04, MOECC Table 2 criteria (Full Depth Generic Site Condition Standards in a Potable Ground Water Condition) for Industrial/Commercial/Community Land Use was used for the Site.

The report was prepared on the understanding and assumption that any work recommended or required and any materials found will be completed and dealt with in accordance with any applicable law.

2. Background Information

2.1 Physical Setting

2.1.1 Site Topography

According to Land Information Ontario (LIO), the Site sits at an elevation of approximately 88 m above sea level (asl). The closest visible body of water is Nepean Creek, located approximately 500 m west of the Site. The local site topography is relatively flat with a slight slope to the northwest and southeast.

2.1.2 Site Geology

2.1.2.1 Surficial Soils

The regional physiography is dominated by Ottawa Valley clay plains. Lying in the Ottawa Valley between Pembroke and Hawkesbury, it consists of plains interrupted by ridges of rock or sand.

Upon review of the Ministry of Northern Development and Mine's "Surficial Geology" layer from OGSEarth, the Site is in an area of coarse textured glaciomarine deposits, characterized by sand and gravel with minor silt and clay. These materials generally do not resist the infiltration of fluids, with lower surface runoff potential and good drainage.

2.1.2.2 Bedrock

Upon review of the Ministry of Northern Development and Mine's "Bedrock Geology" layer from OGSEarth, the bedrock consists of the Beekmantown Group (dolostone, sandstone) of the Phanerozoic, Paleozoic, Odovician, Lower Ordovician. The depth to bedrock is anticipated to be approximately 15 – 17 meters.

2.1.3 Site Hydrogeology

The closest visible body of water is Nepean Creek, located approximately 500 m west of the Site. The Rideau River is located approximately 1.8 km east and northeast of the Site. The Ottawa River is located approximately 6.5 km north and northwest of the Site. Based on topography, the inferred groundwater flow direction is to the northwest, towards the Ottawa River.

2.2 Past Investigations

The following observations were made as part of a Phase I ESA undertaken by AEL Environment Ltd., dated December 21, 2017, in their document titled "*Phase I Environmental Site Assessment Update, 1871 Merivale Road, Ottawa, Ontario*".

The report was completed for the purpose of obtaining a Record of Site Condition (RSC), and was to be O. Reg. 153/04 compliant. This report was reviewed and highlighted the following:

- The Site was developed for commercial use in the late 1940's or early 1950's. Aerial photos show clear evidence of the Site building in 1956. Prior to this, the Site use was likely agricultural or vacant until the late-1940's or early 1950's, when it was developed for commercial use. The Site is in an area of mixed commercial and industrial land uses.
- Site soils likely include sand and gravel components which would not slow the movement of contaminants.
- The closest visible body of water is Nepean Creek, located approximately 500 m west of the Site. The Rideau River is located approximately 1.8 km east and northeast of the Site. The Ottawa River is located approximately 6.5 km north and northwest of the Site. Based on topography, the inferred groundwater flow direction is to the northwest, towards the Ottawa River.
- AEL contacted the City of Ottawa regarding the use of non-potable water standards at the Site. The City expressed an objection to the use of non-potable water standards at the Site. As such, the Site could be assessed to MOECC Table 2 "Full Depth Generic Site Condition Standards in a Potable Ground Water Condition" for commercial land use.

Various government agencies were contacted for freedom of information requests. The Ministry of Environment and Climate Change (MOECC), Environment Canada and the City of Ottawa indicated they have no records pertaining to the Site. The Ministry of Labour reviewed their records and noted the following:

- Liquid chlorine was used on the Site by Arra Chemicals (a retail swimming pool equipment supplier), until at least 1989.

The Site was non-operational at the time of the Site walk over, consisting of a building located on the north side of the Site, centrally, and surrounded by asphalt. The eastern portion of the site is fenced, accessible from a gated entrance in the parking lot or through a bay door located at the east side of the building. Overgrown grasses and shrubs were present along the north and south sides of the Site. All vegetation appeared in good health, and no stressed vegetation was noted.

Two (2) PCAs were identified for the Site – neighbouring historical commercial activities to the southwest and neighbouring historical industrial activities to the north.

Five (5) COPCs were identified at the Site: PHCs, VOCs, BTEX, PAHs and Metals/Inorganics were identified in conjunction with the PCAs on Site.

Based on the Phase I ESA work AEL were of the opinion that there was a need to investigate the site further. AEL recommend additional studies including:

Table 2-1 Areas of Future Investigation from Phase I ESA			
Potential Areas of Concern	Pathways	Sources of Contamination	Action Required
Southwest corner of property	Soil, groundwater	Potential impacts from the migration of contaminants from the neighbouring property historical use as a retail gas station and automotive service facility.	Soil and groundwater samples may be taken to determine if impacts are present
Northern property boundary	Soil, groundwater	Historical operation of an automobile junkyard north of the Site could have resulted in the release of contaminants, which had the potential to migrate onto the Site.	Soil and groundwater samples may be taken to determine if impacts are present

3. Scope of Investigation

3.1 Overview of Site Investigation

According to the sampling and analysis plan (see Appendix 1) provided for this project, the objectives of the Phase II ESA were:

- Carry out a Phase II ESA to assess the current environmental condition of the property, within the areas of interest, with regard to identified environmental concerns.
- Advance boreholes to a maximum depth of 6.0 m (20') to characterize soil lithology and to collect soil samples.
- Complete three (3) of the boreholes as monitoring wells to characterize groundwater flow direction and to collect groundwater samples.
- Submit selected samples to a certified CALA laboratory for testing;
- Compare the analytical testing results of the samples tested to the Ministry of the Environment and Climate Change (MOECC) Table 2 Standards.
- Prepare a report to outline the findings and provide engineering opinions based on the information available to the date received in AEL offices.

All matters not listed in the terms of reference or general conditions were specifically excluded from AEL responsibilities and reporting.

3.2 Media Investigated

3.2.1 Soil

Soil testing was conducted on the Site soils for the presence of Polycyclic Aromatic Hydrocarbons (PAHs), Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs), Benzene, Ethylbenzene, Toluene and Xylene (BTEX) compounds and metals and inorganics, due to the historic neighbouring property operations.

3.2.2 Sediments

During the Phase II investigation, there were no surface streams or lake beds found within the property boundaries of the Site, and as such no sediment sampling was required.

3.2.3 Groundwater

Three (3) monitoring wells were installed on Site. Groundwater was sampled and analyzed for metals and inorganics, PHCs F1/BTEX – F4, VOCs, BTEX and PAHs, due to the historical neighbouring property operations. Groundwater level measurements were recorded to aid in the determination of groundwater flow direction.

3.3 Phase One Conceptual Site Model

3.3.1 Areas of Potential Environmental Concern (APEC)

APECs at the Site include the southwest corner of the property, where a former retail gas station and automotive service facility was located off-site to the southwest; and north side of the property, where a former automobile junkyard was located off-site to the north. Figure 1b shows the site and neighbouring property uses. Figure 1c shows the locations of the APECs described above.

3.3.2 Contaminants of Potential Concern (COPC)

Five (5) contaminants of potential concern were identified at the Site:

- PHCs at the southwest corner and north side of the property;
- VOCs at the southwest corner and north side of the property;
- BTEX at the southwest corner and north side of the property;
- PAHs at the southwest corner and north side of the property; and
- Metals and inorganics at the southwest corner and north side of the property.

3.3.3 Effects of Underground Utilities

Meters on site indicate that there are underground gas, water and sewer utilities at the Site. The presumed effects of the presence of the utilities are discussed below.

3.3.3.1 Communication Lines

Communication lines are provided by overhead and it is not expected to have an effect on the transport of potential contaminants in the subsurface.

3.3.3.2 Gas Line

Gas service enters the site building from the north side, and likely enters the site from the west. As the utility connection is very small in diameter it is not expected to have an effect on the transport of potential contaminants in the subsurface.

3.3.3.3 Hydro Line

Hydro is provided by overhead lines, and it is not expected to have an effect on the transport of potential contaminants in the subsurface.

3.3.3.4 Water and Sewer

Water and sewer services are anticipated to enter the site from the west, and catch basins for storm water are located along the southern side of the Site. A preferential pathway for the transport of groundwater and potential

contaminants of concern on to the Site may exist from the west and south sides of the Site, in line with the water and sewer connections.

3.3.4 Geological and Hydrogeological Conditions

3.3.4.1 Topography

According to Land Information Ontario (LIO), the Site sits at an elevation of approximately 88 m above sea level (asl). The closest visible body of water is Nepean Creek, located approximately 500 m west of the Site. The local site topography is relatively flat with a slight slope to the northwest and southeast.

3.3.4.2 Physiography

The regional physiography is dominated by Ottawa Valley clay plains. Lying in the Ottawa Valley between Pembroke and Hawkesbury, it consists of plains interrupted by ridges of rock or sand.

Upon review of the Ministry of Northern Development and Mine's "Surficial Geology" layer from OGSEarth, the Site is in an area of coarse textured glaciomarine deposits, characterized by sand and gravel with minor silt and clay. These materials generally do not resist the infiltration of fluids, with lower surface runoff potential and good drainage.

3.3.4.3 Geology

Upon review of the Ministry of Northern Development and Mine's "Bedrock Geology" layer from OGSEarth, the bedrock consists of the Beekmantown Group (dolostone, sandstone) of the Phanerozoic, Paleozoic, Odovician, Lower Ordovician. The depth to bedrock is anticipated to be approximately 15 – 17 meters.

3.3.5 Fill Materials

During the Site walkover, no indications of buried fill materials were observed.

3.3.6 Water Bodies and Areas of Natural Significance

The closest visible body of water is Nepean Creek, located approximately 500 m west of the Site. The Rideau River is located approximately 1.8 km east and northeast of the Site. The Ottawa River is located approximately 6.5 km north and northwest of the Site. Based on topography, the inferred groundwater flow direction is to the northwest, towards the Ottawa River.

There are no parks, reserves or other areas of natural significance within vicinity, in whole or part, of the Site (within 250 m).

3.3.7 Uncertainties

Uncertainty or absence of information obtained regarding all spills and the presence, or not, of any above-or-underground tanks on neighbouring Sites

in each of the components of the phase one environmental site assessment could affect the validity of the CSM.

3.4 Deviations from Sampling and Analysis Plan

The original generic Sampling and Analysis Plan called for the drilling of six (6) boreholes. Three (3) of these were to be developed into monitoring wells for groundwater sampling. On January 31, 2018, a groundwater sample, plus a duplicate sample, was collected from MW6, to confirm metal impacts in groundwater at this location. Please see Appendix 1 for the sampling and analysis plan.

3.5 Impediments

No impediments to the Phase II ESA were encountered.

4. Investigation Method

4.1 General

The field investigation followed general procedures outlined in O. Reg. 153/04. These methods included drilling using a GeoProbe track-mounted drill rig for soil sampling and groundwater monitoring well installation, field screening methods, and monitoring well development and sampling.

4.1.1 Drilling and Excavating

AEL used a GeoProbe track-mounted drill rig, supplied by George Downing Estate Drilling Ltd. for sampling six (6) boreholes and installing all monitoring wells.

4.1.2 Soil: Sampling

AEL conducted sampling within the areas of potential environmental concern based on the Phase I ESA. Sample locations were recorded in relation to a common benchmark. Locations were input into AEL's data management software. The borehole and monitoring well locations are shown in the sampling location plan (Figure 2).

Soil sampling for all boreholes was performed using a GeoProbe track-mounted drill rig. The GeoProbe rig provides a 1.2 m long, 2.54 cm diameter soil core in a single use plastic (PVC) liner. The samples were then field tested, and transferred into lab prepared sample jars. Soil sampling was continuous and samples were collected across the entire interval and examined using visual, olfactory and field screening methods.

The following sampling protocol was applied to reduce the risk of cross contamination:

- Only new, clean, 1.2 m long PVC liners are used for direct push drill cores;
- Only new clean jars for were used for each sample sent to laboratory;
- Only new clean latex sample gloves are used when handling all samples or sample containers. In cases where the liners are used, the gloves may be redundant, so that gloves may not be needed. The AEL protocol is to always require new gloves for each sample;
- Each sample is marked and labelled with a unique barcode identification label.

Sample or project information reliability and security are one of the most important features of a Phase II ESA sampling program. Out of sequence or erroneous logging of samples can significantly affect the cost of site cleanups or the understanding of a site.

Sample identification information is supplied in multiples to be applied to borehole logs, sample containers, and chain of custody information. This minimizes the potential for sample mislabelling and facilitates tracking as each sample is provided with a unique identifier, regardless of related location or project information.

4.1.3 Field Screening Measurements

On-Site field screening involved screening soil cores with a RKI Eagle II Gas Meter equipped with a photoionization detector (PID) and a catalytic sensor to determine if VOCs or hydrocarbons (HCs) were present. The PID was used to detect the presence of any VOCs in the range of 0.1 – 999.9 ppm with a precision of 0.1 ppm and an accuracy of 10 to 2000 ppm: ± 3%. It was calibrated prior to use by Pine Environmental, using 100 ppm isobutylene. The catalytic sensor was used to detect the presence of HCs in the range of 0 – 100% Lower Explosive Limit (LEL) with an accuracy of 0 to 100% LEL: ± 3%. It was calibrated prior to use by Pine Environmental, using hexane.

After the soil sample was removed from the ground, a sample of soil was placed in a Ziploc bag and sealed. After a period of five minutes, the gas detector was inserted into the bag, and a headspace reading was taken to determine if any VOCs and HCs were present. The summarized results from the field screening can be found in Table 9.

4.2 Ground Water: Monitoring Well Installation

AEL used a GeoProbe track-mounted drill rig supplied by George Downing Estate Drilling Ltd., of Grenville-sur-la-Rouge, Quebec, for installation of monitoring wells using a 200 mm diameter hollow stem auger. Monitoring wells were constructed of 50 mm inside diameter PVC riser pipe fitted with 50 mm inside diameter threaded PVC well screen (No. 10 slot). The annular space of the borehole around the screen was backfilled with clean silica sand to approximately 60 cm above the top of the screen. The annular space above the sand pack was grouted with a bentonite seal to 30 cm below ground surface, followed by 15 cm of clean silica sand, followed by concrete to surface. The entire top was outfitted with a flush mount lockable metal protective casing. Monitoring well construction details can be seen in Table 10.

All wells were equipped with sealed caps to prevent surface water infiltration.

AEL developed the wells over 24 hours after installation by purging no less than three well volumes or until the measurements of groundwater temperature and conductivity were stable as measured on a Horiba Water Quality Instrument.

4.3 Ground Water: Field Measurement of Water Quality Parameters

A Horiba Water Quality Instrument was used to provide direct measurement of conductivity, temperature, pH, turbidity and dissolved oxygen. It was calibrated prior to use by Pine Environmental.

4.4 Ground Water: Sampling

AEL developed the monitoring well by purging at least three well volumes or until the measurements of groundwater temperature, turbidity, dissolved oxygen and conductivity were stable as measured on the Horiba Water Quality Instrument. Purge water was collected on-site and removed for disposal at a later date in accordance with appropriate regulations. Groundwater samples were collected after the purging. Water levels were measured prior to purging and the collection of samples. The well was sampled using a peristaltic pump directly into the bottles provided by the CALA laboratory, with filtering where necessary. Each sample was labelled with a unique identifying label and placed immediately into a cooler packed with ice.

4.5 Analytical Testing

Four (4) water samples, two (2) trip blanks and two (2) duplicates, as well as twelve (12) soil samples with two (2) duplicate samples, were sent to Maxxam Analytics (6740 Campobello Rd., Mississauga, ON) for the analysis of PHCs, VOCs, BTEX, metals and inorganics and PAHs.

4.6 Residue Management Procedures

All drill cuttings, direct push samples not used for analysis, purge well water and fluids from equipment cleaning were placed in drums on site. These residues can be removed and disposed of in accordance with appropriate regulations, however, removal did not form part of the current scope of work.

4.7 Elevation Surveying

AEL completed a topographic survey of the existing wells and new wells. Elevations were acquired using a Trimble® R10 RTK GPS at an average accuracy of ~10 mm horizontal and ~15 mm vertical. This sampling generated a sufficiently dense point cloud to create a Digital Elevation Model using topographic modelling in ArcGIS.

4.8 Quality Assurance and Quality Control Measures

AEL maintains a Quality Assurance/Quality Control (QA/QC) procedure in accordance with CSA requirements. AEL's QA/QC sampling protocol is as outlined below and includes:

- Adequate samples to provide for quality assurance and control of the sample results.
- Laboratory QA/QC procedures as required by the CSA and applicable MOECC documents including O. Reg. 153/04. In some instances where elevated test results are found that do not match sampling trends observed at a site, AEL may require samples be re-tested, or additional samples tested nearby. Furthermore, in some cases duplicate samples are tested.

The AEL QA/QC protocol is directed towards eliminating the potential for cross-contamination of samples and maintaining control and knowledge of the sample and sample results from the field through to reporting of the result. As a result, true field duplicates for soil samples are not generally obtained in the field during a Phase II ESA investigation owing to the variability of soils. Split field duplicates are obtained in completion of remedial work where composite samples are generally used to monitor field progress.

4.8.1 Sampling QA/QC

4.8.1.1 Background

To reduce the risk of cross-contamination of soil the following steps are implemented on AEL projects. AEL ensures and uses:

- Only new, clean, 1.2 m long PVC liners for direct push drill cores;
- Only new, clean laboratory jars for samples;
- Only new clean latex sample gloves when handling all samples or sample containers. The AEL protocol is to always require new gloves for each sample.

4.8.1.2 AEL Samples and Containers

The AEL approach produces samples in new laboratory-prepared sample containers specific to the parameter of interest, so that sample filtration and preservation are as dictated by analytical needs.

5. Review and Evaluation

5.1 Geology

Overburden was comprised of asphalt, gravel or topsoil overlaying sand or silty sand to the depth explored. Bedrock was not encountered at the Site. See attached Borehole Logs in Appendix 2 for further details.

5.2 Ground Water: Elevations and Flow Direction

Monitoring well locations were chosen to cover the Site in a non-linear configuration. Screened intervals of monitoring wells used for interpretations of ground water flow direction were chosen to intercept the anticipated groundwater flow levels on Site.

Field measurements, taken using a water level indicator during water level measurements, have been kept for review as necessary.

No free product was present in monitoring wells.

AEL are of the opinion that due to the anticipated size of water and/or sewer lines running along the property boundary at the west and south sides of the Site, there is the potential for preferential pathways to be present for the movement of contaminants, if present, onto the Site from off-site sources.

At the time of water sampling groundwater was encountered between 4.12 m and 4.37 m bgs at the Site. The elevations of each monitoring well can be found on the Borehole Logs in Appendix 2. Based on the measurements taken, groundwater flows in a north northwesterly direction. See Figure 3 for interpreted groundwater contours.

5.3 Ground Water: Hydraulic Gradients

Based on water levels from the current investigation, the horizontal gradient was calculated to be between 0.00081 m/m and 0.00172 m/m on the Site, with an average horizontal gradient of 0.00138 m/m, and confirmed a north northwesterly groundwater flow.

5.4 Coarse Grained Soil Texture

Based on visual evidence collected during soil sampling, coarse grained soil was determined to be the soil classification for comparison and as such this texture will be used in determining the applicable site condition standards.

5.5 Soil: Field Screening

Soil samples were screened for VOCs and HCs in the field using a RKI Eagle 2 Gas Detector. All field screened samples returned low levels of VOCs and HCs, below the value established by AEL as the screening level for meeting MOECC Table 2 standards. Results from the field screening can be seen in Table 9.

5.6 Soil Quality

The results did not indicate the presence of light or dense non-aqueous phase liquids (LNAPLs or DNAPLs).

A total of six (6) boreholes were advanced on the Site. Borehole and well locations are shown on Figure 2. Soil samples were taken from 0.0 to 6.1 m. Based on visual, olfactory and other on-site examinations, soil samples were collected from all six (6) boreholes for further laboratory investigation. Six (6) samples, plus one duplicate, were investigated for PHCs F1/BTEX – F4; six (6) samples, plus one duplicate, for metals and inorganics; six (6) samples, plus one duplicate, for VOCs; and six (6) samples, plus one duplicate, for PAHs. Certificates of Analysis can be seen in Appendix 3.

5.6.1 BTEX and PHCs

A total of six (6) samples were submitted for analysis for BTEX and PHCs. All samples returned results below the applicable standards.

A tabular representation of this analysis can be found in Table 1.

5.6.2 Metals and Inorganics

A total of six (6) samples were submitted for analysis of metals and inorganics. All samples returned results below the applicable standards.

A tabular representation of this analysis can be found in Table 2.

5.6.3 VOCs

A total of six (6) samples were submitted for analysis of VOCs. All samples returned results below the applicable standards.

A tabular representation of this analysis can be found in Table 3.

5.6.4 PAHs

A total of six (6) samples were submitted for analysis of PAHs. All results returned below applicable criteria.

A tabular representation of this analysis can be found in Table 4.

5.7 Ground Water Quality

AEL tested three (3) groundwater monitoring wells installed across the property, between November 2017 and January 2018. Four (4) samples, plus two (2) duplicates and two (2) trip blanks, were collected for the analyses of PHCs (F1 – F4), VOCs, BTEX, metals and inorganics and PAHs.

One (1) sample, along with the duplicate sample, did not meet the MOECC Table 2 standard for chloride and sodium. Exceedances were located at monitoring well MW1.

One (1) sample did not meet the MOECC Table 2 standard for cobalt. Exceedances were located at monitoring well MW6. This well was re-sampled in January 2018, and results were below the applicable standard.

The location of the exceedances can be seen in Figure 4. See Tables 5 to 8 for ground water quality results. Certificates of Analysis can be seen in Appendix 3.

5.8 Quality Assurance and Quality Control Results

All certificates of analysis or analytical reports received comply with subsection 47(3) of O. Reg. 153/04. Certificates of analysis have been received for each sample submitted for analysis and all certificates of analysis received are included in full, in Appendix 3.

5.8.1 Soil Sample QA/QC

5.8.1.1 Soil RPD

As part of the field investigation 10% QA/QC field duplicate soil samples were collected and analyzed. Two (2) soil duplicates (A0441 and A0442, duplicates of A0300 and A0299, respectively) were submitted.

Analytical results for the QA/QC field duplicate samples in soil are presented in Appendix 3. Relative percent differences (RPDs) were calculated only where detected concentrations in both samples were greater than the five (5) times the laboratory reportable detection limit (RDL).

Analytical results for the QA/QC field duplicate samples in soil are presented in Appendix 3. Relative percent differences (RPDs) were calculated only where detected concentrations in both samples were greater than the five (5) times the laboratory reportable detection limit (RDL). All RPDs were within industry acceptance limits confirming that sample handling and analytical protocols were acceptable and the results were reproducible.

5.8.1.2 Analytical Laboratory QA/QC

The analytical laboratory performed matrix spikes, spiked blanks, method blanks as well as performing their own RPD calculations and percent recovery calculations, where indicated (see Appendix 3).

For samples A0466 (BH5) and A0444 (MW6), it was noted that sodium was not detected, and the sodium detection limit was used in the calculation to report SAR. This value represents a maximum ratio.

For QC batch 5280155, it was reported that the detection limit for Acenaphthylene was raised due to matrix interferences. As the raised detection limit was well below the applicable standard, this is not of concern.

5.8.2 Groundwater Sample QA/QC

5.8.2.1 Groundwater RPD

As part of the field investigation 10% QA/QC field duplicate groundwater samples were collected and analyzed. Two (2) groundwater duplicates (A0563 and A0475, duplicates of A0562 and A0480) were submitted.

Analytical results for the QA/QC field duplicate samples in groundwater are presented in Appendix 3. Relative percent differences (RPDs) were calculated only where detected concentrations in both samples were greater than the five (5) times the laboratory reportable detection limit (RDL).

Analytical results for the QA/QC field duplicate samples in groundwater are presented in Appendix 3. Relative percent differences (RPDs) were calculated only where detected concentrations in both samples were greater than the five (5) times the laboratory reportable detection limit (RDL). All RPDs were within industry acceptance limits confirming that sample handling and analytical protocols were acceptable and the results were reproducible.

5.8.2.2 Analytical Laboratory QA/QC

The analytical laboratory performed matrix spikes, spiked blanks, method blanks as well as performing their own RPD calculations and percent recovery calculations, where indicated (see Appendix 3).

For sample A0561 (MW6) it was noted that one vial for VOC analysis contained visible sediment, which was included in the analysis. As all results were below the detection limit, this does not pose a concern.

For sample A0564 (MW4) it was noted that the laboratory duplicate results for PHC F2 – F4 analysis exceeded the RPD acceptance criteria for PHC F2 – F4. This was attributed to sample heterogeneity. As all results were well below the applicable criteria, this does not pose a concern.

6. Phase Two Conceptual Site Model

6.1 Area Where a Potentially Contaminating Activity (PCA) Has Occurred

Potentially Contaminating Activities (PCAs), as described in Column A of Table 2 of Schedule D or O. Reg. 153/04, were not identified at the Site.

PCAs identified within 250 m of the Site, as described in Column A of Table 2 of Schedule D or O. Reg. 153/04 include:

10. Commercial Autobody Shops (one location)

28. Gasoline and Associated Products Storage in Fixed Tanks (one location)

49. Salvage Yard, including automobile wrecking (one location)

6.2 Areas of Potential Environmental Concern (APECs)

Areas of Potential Environmental Concern (APECs) at the Site include the southwest corner of the Site and the north property boundary.

Table 6-1 outlines the APECs and how they were investigated at the Site. Figure 1c outlines the Phase I, II and RSC Site and APECs, as outlined below

Table 6-1 Investigation of Areas of Potential Environmental Concern

Area of Potential Environmental Concern	Associated Potentially Contaminating Activity	Reason	How the Concern Was Investigated
Southwest corner of the Site	10. Commercial Autobody Shops 28. Gasoline and Associated Products Storage in Fixed Tanks	Migration of contaminants to the Site from leaks and/or spills relating to the presence of a historical retail gas station and automotive service facility present southwest of the Site.	Soil samples collected and analyzed for PHCs, VOCs, BTEX, PAHs and metals and inorganics. Groundwater samples collected and analyzed for PHCs, VOCs, BTEX, PAHs and metals and inorganics.

Table 6-1 Investigation of Areas of Potential Environmental Concern			
Area of Potential Environmental Concern	Associated Potentially Contaminating Activity	Reason	How the Concern Was Investigated
North side of the Site	49. Salvage Yard, including automobile wrecking	Migration of contaminants to the Site from leaks and/or spills relating to the presence of a historical automobile junkyard present north of the Site.	Soil samples collected and analyzed for PHCs, VOCs, BTEX, PAHs and metals and inorganics. Groundwater samples collected and analyzed for PHCs, VOCs, BTEX, PAHs and metals and inorganics.

6.3 Potential Contaminants of Concern (PCOC)

Five (5) main groups of potential contaminants of concern (PCOC) were identified at the Site:

- PHCs F1 to F4 at the southwest corner and north side of the Site.
- VOCs at the southwest corner and north side of the Site.
- BTEX at the southwest corner and north side of the Site.
- Metals and inorganics at the southwest corner and north side of the Site.
- PAHs at the southwest corner and north side of the Site.

6.4 Effect of Subsurface Structures and Utilities

At the time of the investigation, the Site building was present at the north side of the Site, approximately central. The building did not have a basement, or any underground structures. See Figure 5.

Telephone, water, sanitary, sewer, hydro and gas services are currently provided to the Site. Telephone and hydro were provided to the Site by overhead lines. AEL requested underground utility locates from Ontario One Call and a private locator. Responses indicate that there is an underground plastic gas service line and a buried electrical conduit running in an east-west direction entering the site at the northwest corner, a water main running in a north-south direction along the west side of the Site, within the road right-of-way and a storm and sanitary sewer lines running in an east-west direction along the south side of the site. These utilities, particularly the water and sewer lines due to size, may have provided a preferential pathway for the

movement of potential contaminants onto the Site from the south or west property line.

6.5 Stratigraphy of Phase II Property

The regional physiography is dominated by Ottawa Valley clay plains. Lying in the Ottawa Valley between Pembroke and Hawkesbury, it consists of plains interrupted by ridges of rock or sand.

Upon review of the Ministry of Northern Development and Mine's "Surficial Geology" layer from OGSEarth, the Site is in an area of coarse textured glaciomarine deposits, characterized by sand and gravel with minor silt and clay. These materials generally do not resist the infiltration of fluids, with lower surface runoff potential and good drainage.

Site stratigraphy from ground surface to deepest point investigated was generally comprised of: asphalt, gravel or topsoil overlying sand or silty sand materials to the maximum depth investigated. Bedrock was not encountered at the Site. Additional stratigraphic information is shown on attached Cross-Section Figures 6a-c.

Local upper granular soils are not anticipated to form a good barrier to migration of subsurface contaminant due to the sand components.

6.6 Hydrogeological Characteristics of Phase II Property

The deepest aquifer investigated was unconfined. Three (3) monitoring wells were installed at the Site to a maximum depth of 6.1 m. Groundwater elevations ranged from 83.04 m asl to 83.42 m asl. The depth to groundwater aquifer as measured on site was between 4.12 m and 4.37 m bgs. Groundwater flow direction was determined to be towards the north northwest, towards the Ottawa River (see Figure 3).

Based on water levels from the current investigation, the horizontal gradient was calculated to be between 0.00081 m/m and 0.00172 m/m on the Site, with an average horizontal gradient of 0.00138 m/m, and confirmed a north northwesterly groundwater flow.

6.6.1 Depth to Bedrock

Based on regional mapping, bedrock was expected to be at a depth of between 15 – 17 m bgs at this site.

6.6.2 Depth to Water Table

Groundwater levels were recorded in each of the monitoring wells installed with a range of 4.12 m and 4.37 m bgs. AEL completed a topographic survey of the new wells. Water levels in each of the wells were in the range of 83.04 to 83.42 m asl. See Figure 6a-c for water table location.

6.7 Applicability of Section 41 or 43.1

AEL considered the applicability of either Section 41 or 43.1 of Ontario Regulation 153/04) as follows:

6.7.1 Environmentally Sensitive Area

AEL reviewed Natural and Environmental Features maps to investigate the proximity of environmentally sensitive areas. Sensitive areas considered included wetlands, parks and reserves, the Oak Ridges Moraine, lakes and other major water courses. The Site is not in proximity to mapped provincial or regional environmentally protected areas and as such is not considered environmentally sensitive based on this criterion.

6.7.2 Soil pH Condition

AEL considered soil pH for the Site based on chemical results. Laboratory analysis indicated that the lowest pH of the soil tested was 6.82 and the highest pH value was 7.36. The soil is thus in the acceptable range of greater 5 and less than 9.

6.7.3 Shallow Soil Site

According to Ontario Regulation 153/04, a site is considered to have shallow soil only if more than 1/3 of the area has less than 2 m of soil cover over the bedrock. The depth to bedrock on the Site was more than 2 m and as such AEL does not consider the Site to be a shallow soil site.

6.7.4 Near a Body of Water Site

The nearest permanent surface water body (Nepean Creek) is estimated to be 500 m west of the Site. This is more than 30 m and as such AEL does not consider the Site to be near a body of water.

6.7.5 Designation By a Qualified Person

It is the opinion of the Qualified Person that neither Sections 41 or 43.1 apply to this Site.

6.8 Soils Brought to Phase II Property

No imported soil was identified on Site, and this was supported by information obtained during the Phase I investigation.

6.9 Existing Property Buildings

At the time of the investigation, the Site building was present at the north side of the Site, approximately central. The building construction is slab on grade, and did not have a basement, or any underground structures. Floor drains were located within the washrooms and kitchen, present within the office area at the west side of the building, and within the warehouse area at the east side of the building. However, given the size of these drains, they are

not anticipated to provide a preferential pathway for the movement of potential contaminants.

6.10 Proposed Buildings or Other Structures

No new proposed buildings or structures were identified at the time in conjunction with the site assessment.

6.11 Contaminants Present on Phase II Property

A sampling program was employed to verify if the PCOC were present in soil and groundwater at the Site.

No visible staining was seen on-Site.

In regards to soil, no PCoC were identified at the Site at concentrations above Table 2 Site Condition Standards (SCSs). All soil samples were submitted to and analyzed by a CALA certified laboratory.

In regards to groundwater, of all contaminants of potential concern only chloride, sodium and cobalt were found and verified by a CALA certified lab in excess of the applicable SCSs.

The area impacted by chloride and sodium is located within the area of the southwest property boundary, near the intersection of Merivale Road and Jamie Avenue, adjacent to the roadway and utility corridor, within high traffic areas. MTO and/or municipal snow and ice removal activities have likely impacted groundwater in the area through the use of road salt in de-icing activities, and the presence of underground utilities along the site boundary provide a preferential pathway for the movement of groundwater, and dissolved contaminants, onto the Site. Concentrations of chloride and sodium decrease with distance away from the municipal roadways, as can be seen at MW4 and MW6, which are both below the applicable site condition standards (SCSs). It is reasonable to conclude, based on the respective high-traffic surface of Merivale Road and Jamie Avenue, that dissolved de-icing salts is the significant contributor to the chloride and sodium that is present in groundwater at the southwest corner of the Site. Accordingly, the chloride and sodium exceedances are considered to be the result of snow and de-icing measures as contemplated by Sec 48 (3) of Reg.153/04 and are deemed not to be an exceedance for the purpose of Part XV.1 of the Act. O. Reg. 153/04, s. 48 (3). Further investigation(s) into chloride and sodium in groundwater is not warranted at this time.

All other analytes tested met the standards.

Figure 2 illustrates the soil and groundwater sample locations.

6.11.1 Description of Contaminated Area

Exceedances for chloride and sodium in groundwater were present at one location, at the southwest corner of the Site, near the intersection of Merivale

Road and Jamie Avenue, adjacent to the roadway and utility corridor, within high traffic areas. The distribution of impacts suggests it is associated with the use of de-icing salts for MTO and/or municipal snow and ice removal activities, which dissolve in groundwater and migrate along a preferential pathway (the utility corridor). Accordingly, the chloride and sodium exceedances are considered to be the result of snow and de-icing measures as contemplated by Sec 48 (3) of Reg.153/04 and are deemed not to be an exceedance for the purpose of Part XV.1 of the Act. O. Reg. 153/04, s. 48 (3).

The exceedance for cobalt in groundwater was present at one location, at the northeast corner of the Site. As this exceedance was found at only one location, along the north property boundary of the Site, impacts are likely related to the historical operation of an automobile junkyard, which was adjacent to the north side of the Site. The distribution of contaminants in groundwater is discussed further in Section 6.11.2.

Further testing off-Site was not permitted, as neighbouring property owners were not involved in the RSC process. Due to the proximity of the exceedance at the northeast Site boundary, the cobalt impact is delineated horizontally by the Site boundary at this location.

See Figures 6a – c for soil stratigraphy and depth to groundwater at the Site. Vertical and horizontal distribution of cobalt in groundwater has not yet been completed.

6.11.2 Distribution of Contaminants

AEL identified one (1) location, MW1, at the southwest side of the Site which exhibited exceedances in groundwater for chloride and sodium. The distribution of impacts suggests it is associated with the use of de-icing salts for MTO and/or municipal snow and ice removal activities, which dissolve in groundwater and migrate along a preferential pathway (the utility corridor), and this source is reflected in the horizontal distribution of chloride and sodium concentrations which decrease with distance from the roadway and utility corridor. Accordingly, the chloride and sodium exceedances are considered to be the result of snow and de-icing measures as contemplated by Sec 48 (3) of Reg.153/04 and are deemed not to be an exceedance for the purpose of Part XV.1 of the Act. O. Reg. 153/04, s. 48 (3).

AEL identified one (1) location, MW6, at the northeast side of the Site, which exhibited an exceedance in groundwater for cobalt. The distribution of impacts suggests that impacts are likely related to the historical operation of an automobile junkyard, which was adjacent to the north side of the Site. Due to the proximity of the exceedances on the northeast Site boundary, the cobalt impact is delineated horizontally by the Site boundary at this location.

See Figures 6a – c for soil stratigraphy and depth to groundwater at the Site. Vertical and horizontal distribution of cobalt in groundwater has not yet been completed.

All areas where soil samples were collected exhibited consistent soil stratigraphy and groundwater conditions. Site stratigraphy from ground surface to deepest point investigated was generally comprised of asphalt, gravel or topsoil overlying sand or silty sand materials to the maximum depth investigated at 6.1 m bgs.

6.11.3 Reasons for Discharge of Contaminants

6.11.3.1 Chloride and Sodium

MTO and/or municipal snow and ice removal activities have likely impacted groundwater in the area through the use of road salt in de-icing activities, and the presence of underground utilities along the site boundary provide a preferential pathway for the movement of groundwater, and dissolved contaminants, onto the Site. Concentrations of chloride and sodium decrease with distance away from the municipal roadways, as can be seen at MW4 and MW6, which are both below the applicable SCSs. It is reasonable to conclude, based on the respective high-traffic surface of Merivale Road and Jamie Avenue, that dissolved de-icing salts is the significant contributor to the chloride and sodium that is present in groundwater at the southwest corner of the Site. Accordingly, the chloride and sodium exceedances are considered to be the result of snow and de-icing measures as contemplated by Sec 48 (3) of Reg.153/04 and are deemed not to be an exceedance for the purpose of Part XV.1 of the Act. O. Reg. 153/04, s. 48 (3).

6.11.3.2 Cobalt

Cobalt impacts in groundwater likely occurred due to the historical operation of an automobile junkyard, which was adjacent to the north side of the Site. Storage of metals from approximately the 1950s to 1980s could have resulted in the leaching of metals to soil and groundwater. As these historical activities ceased more than 25 years ago, there is no ongoing source of contaminants.

6.11.4 Migration of Contaminants

Chloride and sodium impacts are thought to extend beyond the property boundary to the west and south, originating from an off-site source. MTO and/or municipal snow and ice removal activities have likely impacted groundwater in the area through the use of road salt in de-icing activities, and the presence of underground utilities along the site boundary provide a preferential pathway for the movement of groundwater, and dissolved contaminants, onto the Site. This is supported by the fact that concentrations of chloride and sodium decrease with distance away from the municipal roadways, as can be seen at MW4 and MW6, which are both below the applicable SCSs. Accordingly, the chloride and sodium exceedances are considered to be the result of snow and de-icing measures as contemplated by Sec 48 (3) of Reg.153/04 and are deemed not to be an exceedance for the purpose of Part XV.1 of the Act. O. Reg. 153/04, s. 48 (3).

Cobalt impact present on-Site is likely the result of historical activities more than 25 years ago, and based on timing, is likely in equilibrium and does not appear to be contributing to any ongoing impacts, which may migrate off the Site.

Due to the location of the exceedance, impacts are thought to extend beyond the property boundary to the northeast.

COCs identified at the Site do not include volatile parameters, and as such there is no potential for vapour intrusion into current or future buildings.

6.11.5 Effects of Climatic and Meteorological Conditions

Groundwater flow would not likely be largely influenced by meteorological conditions, such as heavy rain, but more so by climatic conditions, such as a natural higher water table in spring caused by snow melt.

Deposition of chloride and sodium would have occurred mostly during winter and spring months with actual or potential snow and/or ice accumulation and the spring thaw of accumulated snow and/or ice, which would then migrate to groundwater.

The receptor for groundwater flow from the Site is Nepean Creek, and ultimately the Rideau River. Given the distance to the Site, variations in surface water are not expected to significantly affect hydraulic gradients at the Site.

6.11.6 Soil Vapour Intrusion

No VOCs were found to contaminate the Site in either the soil or the groundwater, and as such no soil vapour intrusion studies were warranted.

6.11.7 Extent of Investigation Work

The chloride and sodium exceedances in groundwater are considered to be the result of snow and de-icing measures as contemplated by Sec 48 (3) of Reg.153/04 and are deemed not to be an exceedance for the purpose of Part XV.1 of the Act. O. Reg. 153/04, s. 48 (3). Further investigation(s) into chloride and sodium in groundwater is not warranted at this time.

The cobalt exceedance in groundwater has not yet been fully delineated horizontally or vertically. Due to the proximity of the exceedance on the northeast Site boundary, the cobalt impact in groundwater is delineated horizontally by the Site boundary at this location.

The qualified person has reviewed, interpreted and evaluated the information used in the planning of the site investigation and obtained from conducting the site investigation and is of the opinion that it meets the requirements of O. Reg. 153/04, as amended.

7. Conclusions

Based upon the results of the Phase II ESA, when compared to industrial/commercial/community land use in a potable water condition and coarse textured soils, AEL were of the opinion and judgment that the following conclusions may be reached for the site.

7.1 Soil

Soil stratigraphy remained consistent over the entire site, comprised of asphalt, gravel or topsoil overlying sand or silty sand materials to the maximum depth investigated. Bedrock was not encountered at the Site.

All soil samples met the applicable site condition standards for the analytes tested.

7.2 Groundwater

Groundwater flow appears to be in a north northwesterly direction. The Site is not situated within an environmentally sensitive zone.

One (1) sample, from MW1, and the duplicate sample, was found to exceed the applicable Table 2 standard for chloride and sodium. The area impacted by chloride and sodium is located within the area of the southwest property boundary, near the intersection of Merivale Road and Jamie Avenue, adjacent to the roadway and utility corridor, within high traffic areas. MTO and/or municipal snow and ice removal activities have likely impacted groundwater in the area through the use of road salt in de-icing activities, and the presence of underground utilities along the site boundary provide a preferential pathway for the movement of groundwater, and dissolved contaminants, onto the Site. Concentrations of chloride and sodium decrease with distance away from the municipal roadways, as can be seen at MW4 and MW6, which are both below the applicable SCSs. It is reasonable to conclude, based on the respective high-traffic surface of Merivale Road and Jamie Avenue, that dissolved de-icing salts is the significant contributor to the chloride and sodium that is present in groundwater at the southwest corner of the Site. Accordingly, the chloride and sodium exceedances are considered to be the result of snow and de-icing measures as contemplated by Sec 48 (3) of Reg.153/04 and are deemed not to be an exceedance for the purpose of Part XV.1 of the Act. O. Reg. 153/04, s. 48 (3). Further investigation(s) into chloride and sodium in groundwater is not warranted at this time.

One (1) groundwater, from MW6, was found to exceed the applicable standard for cobalt. As this exceedance was found at only one location, at the northeast corner of the Site, impacts are likely related to the historical operation of an automobile junkyard, which was adjacent to the north side of the Site. AEL re-sampled MW6 in January, 2018, and the results were below the applicable standard. It should be noted that the one potable well located

within 250m of the site study area (influencing the city to consider the site a potable groundwater condition site) is upgradient of the site, and hence not affected by the site groundwater condition.

In accordance with O. Reg. 153/04, AEL cannot currently confirm that groundwater conditions at the Site currently meet MOECC Table 2 standards for industrial/commercial/community land use in a potable groundwater comparison.

If the city reconsiders the potability standards for the site due to the upgradient nature of the potable well in question, in accordance with O. Reg. 153/04, AEL could confirm that soil and groundwater conditions at the Site currently meet MOECC Table 3 standards for industrial/commercial/community land use in a non-potable groundwater comparison.

All other groundwater samples tested met the applicable site condition standards for the analytes tested.

7.3 Addressing Areas of Potential Concern

According to AEL's review of the Phase I ESA, two potential concerns were raised regarding the environmental conditions at the Site as a result of past neighbouring land uses. The concerns and justifications of how the concerns were investigated are outlined in Table 6-1.

Table 6-1 Investigation of Areas of Potential Concern

Area of Potential Environmental Concern	Reason	How the Concern Was Investigated
Southwest corner of the Site	Migration of contaminants to the Site from leaks and/or spills relating to the presence of a historical retail gas station and automotive service facility present southwest of the Site.	Soil and groundwater samples collected and analyzed for PHCs, VOCs, BTEX, metals and inorganics and PAHs within the area of the southwest corner of the Site.
North side of the Site	Migration of contaminants to the Site from leaks and/or spills relating to the presence of a historical automobile junkyard present north of the Site.	Soil and groundwater samples collected and analyzed for PHCs, VOCs, BTEX, metals and inorganics and PAHs within the area of the north side of the Site.

7.4 Phase II Recommendations

As land use of the Site is intended to remain commercial, and no land use change is planned, a RSC is not required.

In accordance with O. Reg. 153/04, AEL are of the opinion that soil and groundwater conditions at the Site cannot currently be confirmed to meet MOECC Table 2 standards for industrial/commercial/community land use.

If a land use change to a more sensitive land use is planned, a RSC would be required. If a RSC is required, the following would need to be addressed:

- Sampling of all impacted groundwater wells would be required over four (4) consecutive quarterly sampling events, in order to document groundwater contaminants are no longer present or the initial exceedance was a temporary anomaly, in concentrations above the applicable standard.
- The exceedance of cobalt in groundwater at one location, if determined to be persistent, would require further horizontal and vertical delineation.
- Sampling of all impacted groundwater wells would then be required over four (4) consecutive quarterly sampling events, in order to document groundwater contaminants were no longer present after remediation.

The chloride and sodium exceedance in groundwater is considered to be the result of snow and de-icing measures as contemplated by s. 48 (3) of O. Reg. 153/04 and are deemed not to be an exceedance for the purpose of Part XV.1 of the Act.

8. Signatures

8.1 Closure

AEL are of the opinion the work and report above, as implemented by AEL with the assistance of the client, meets the requirements for a Phase II ESA, to the extent deemed reasonable and applicable in our sole engineering judgment and met the sampling plan requirements. AEL notes that the work represents a fulfilment of the requirements. Areas of the Site not sampled or explored between the test holes may vary significantly and may contain important issues not identified by the work to date. None of the work completed by AEL shall be taken to mean the Site is or is not suitable for any purpose. AEL will not be responsible for loss or gain of value of the Site due to the findings or opinions expressed in the report, those losses or gains belonging solely to the owner or to others.

8.2 Limitations

The present work is for the sole use of AEL and the client. Others with an interest in the Site such as owners, contractors, purchasers, etc., must undertake their own investigations respecting the Site, and are advised that the work is to the terms of reference only. Neither AEL nor the client warrant or represent the report has found, detected or reported on all site conditions or site environmental conditions. The limitations (Appendix 6) shall apply.

AELenvironment
A division of Aeon Egmond Ltd.

Charna Kozole, P. Eng.

Qualified Person Under O. Reg. 153/04

Senior Engineer

Paul Wilson, P. Eng., Sr. Reviewer

Qualified Person Under O. Reg. 153/04

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9. References

AEL environment used or considered the following materials respecting the work reported herein:

1. AEL. "*Phase I Environmental Site Assessment Update, 1871 Merivale Road, Ottawa, Ontario*". December 21st, 2017.
2. Chapman & Putnam. The Physiography of Southern Ontario. 1966.
3. CSA. Z769-00. "Canadian Standards Association Phase II Environmental Site Assessment". 2002 (reaffirmed 2013).
4. Geological and Soils Maps: Ontario Geological Survey.
5. Ontario Ministry of Northern Development and Mines. Ontario Geological Survey, OGSEarth Maps.
6. Ontario Regulation 153/04 (as amended).
7. Topographical Maps: Ministry of Natural Resources and Forestry

Table 1 - BTEX and PHC in Soil

Location			MW1		BH2	BH3	MW4	BH5	MW6	MOECC Table 2 Industrial Coarse
Sample ID			A0299	A0442 DUP of A0299	A0456	A0462	A0435	A0469	A0447	
Sample Date			2017-11-15	2017-11-15	2017-11-15	2017-11-16	2017-11-15	2017-11-16	2017-11-16	
Sample Time			9:15:00 AM	9:15:00 AM	2:19:00 PM	1:20:00 PM	10:05:00 AM	3:25:00 PM	12:40:00 PM	
Depth (m)		From	2.44	2.44	3.66	2.79	3.05	2.44	3.66	
		To	2.84	2.84	4.88	3.20	3.66	2.62	4.88	
Chemicals	Units	RDL	Results	Results	Results	Results	Results	Results	Results	
Analysis Date			2017-11-22	2017-11-22	2017-11-22	2017-11-22	2017-11-22	2017-11-22	2017-11-22	
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.32
Ethylbenzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.1
Toluene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	6.4
o-Xylene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	26
p+m-Xylene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Xylene (Total)	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
F1 (C6-C10)	µg/g	10	<10	<10	<10	<10	<10	<10	<10	55
F1 (C6-C10) - BTEX	µg/g	10	<10	<10	<10	<10	<10	<10	<10	
Analysis Date			2017-11-23	2017-11-23	2017-11-22	2017-11-22	2017-11-23	2017-11-22	2017-11-23	
F2 (C10-C16 Hydrocarbons)	µg/g	10	<10	<10	<10	<10	<10	<10	<10	230
F3 (C16-C34 Hydrocarbons)	µg/g	50	<50	<50	<50	<50	<50	<50	<50	1700
F4 (C34-C50 Hydrocarbons)	µg/g	50	<50	<50	<50	<50	<50	<50	<50	3300
Reached Baseline at C50		-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Analysis Date			2017-11-22	2017-11-22	2017-11-21	2017-11-21	2017-11-22	2017-11-22	2017-11-22	
Moisture	%	1.0	13	12	16	19	15	18	16	

BTEX - Benzene, Toluene, Ethylbenzene, Xylenes

PHC - Petroleum Hydrocarbons

RDL - Result Detection Limit

MOECC Table 2 - Ministry of Environment and Climate Change, Soil, Ground Water And Sediment Standards For Use Under Part XV.1 of the Environmental Protection Act, Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, 2011

Results above Table 2 criteria

Table 2 - Metals and Inorganics in Soil

Location			MW1		BH2	BH3	MW4	BH5	MW6	MOECC Table 2 Industrial Coarse
Sample ID			A0300	A0441 DUP of A0300	A0452	A0459	A0432	A0466	A0444	
Sample Date			2017-11-15	2017-11-15	2017-11-15	2017-11-16	2017-11-15	2017-11-16	2017-11-16	
Sample Time			9:14:00 AM	9:14:00 AM	2:10:00 PM	1:15:00 PM	10:00:00 AM	3:15:00 PM	12:33:00 PM	
Depth (m)		From	2.84	2.84	1.22	1.22	1.22	0.30	1.22	
		To	3.48	3.48	1.83	1.93	1.83	0.53	2.44	
Chemicals	Units	RDL	Results	Results	Results	Results	Results	Results	Results	
Analysis Date			2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	
Acid Extractable Antimony (Sb)	µg/g	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.3	40
Acid Extractable Arsenic (As)	µg/g	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18
Acid Extractable Barium (Ba)	µg/g	0.50	17	16	18	39	26	36	44	670
Acid Extractable Beryllium (Be)	µg/g	0.20	<0.20	<0.20	<0.20	0.23	<0.20	0.29	0.26	8
Acid Extractable Boron (B)	µg/g	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	120
Acid Extractable Cadmium (Cd)	µg/g	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1.9
Acid Extractable Chromium (Cr)	µg/g	1.0	7.0	6.1	6.5	14.0	10.0	13.0	13.0	160
Acid Extractable Cobalt (Co)	µg/g	0.10	2.5	2.4	1.8	4.4	2.3	3.8	4.0	80
Acid Extractable Copper (Cu)	µg/g	0.50	6.0	6.1	3.7	9.2	5.3	4.7	7.1	230
Acid Extractable Lead (Pb)	µg/g	1.0	1	1	1	2	2	3	4	120
Acid Extractable Mercury (Hg)	µg/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	3.9
Acid Extractable Molybdenum (Mo)	µg/g	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	40
Acid Extractable Nickel (Ni)	µg/g	0.50	4	4	4	7	5	8	9	270
Acid Extractable Selenium (Se)	µg/g	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.5
Acid Extractable Silver (Ag)	µg/g	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	40
Acid Extractable Thallium (Tl)	µg/g	0.05	<0.050	<0.050	<0.050	0.062	<0.050	0.067	0.16	3.3
Acid Extractable Uranium (U)	µg/g	0.05	0.47	0.49	0.39	0.73	0.52	0.49	0.46	33
Acid Extractable Vanadium (V)	µg/g	5.0	19	16	12	32	25	27	19	86
Acid Extractable Zinc (Zn)	µg/g	5.0	9	10	7	12	8	20	32	340
Analysis Date			2017-11-22	2017-11-22	2017-11-22	2017-11-22	2017-11-22	2017-11-22	2017-11-22	
Hot Water Ext. Boron (B)	µg/g	0.050	0.095	0.12	0.053	0.06	<0.050	0.066	<0.050	2
Analysis Date			2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-24	
Sodium Adsorption Ratio	-	-	1.5	1.3	1.0	2.7	1.2	0.43	0.75	12
Analysis Date			2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	
Free Cyanide	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.051
Analysis Date			2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	
Conductivity	mS/cm	0.002	0.19	0.19	0.056	0.11	0.13	0.048	0.02	1.4
Analysis Date			2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	
Chromium (VI)	µg/g	0.2	<0.2	<0.2	0.3	0.4	<0.2	<0.2	<0.2	8
Analysis Date			2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	
Available (CaCl2) pH	s.u.	-	6.89	6.89	7.15	7.09	7.36	6.99	6.82	5 to 9
Analysis Date			2017-11-22	2017-11-22	2017-11-21	2017-11-21	2017-11-22	2017-11-22	2017-11-22	
Moisture	%	1.0	13	12	7.6	18	15	6.1	8.6	

RDL - Result Detection Limit

MOECC Table 2 - Ministry of Environment and Climate Change, Soil, Ground Water And Sediment Standards For Use Under Part XV.1 of the Environmental Protection Act, Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, 2011

Results above Table 2 criteria

Table 3 - VOCs In Soil

Location			MW1		BH2	BH3	MW4	BH5	MW6	MOECC Table 2 Industrial Coarse
Sample ID			A0299	A0442 DUP of A0299	A0456	A0462	A0435	A0469	A0447	
Sample Date			2017-11-15	2017-11-15	2017-11-15	2017-11-16	2017-11-15	2017-11-16	2017-11-16	
Sample Time			9:15:00 AM	9:15:00 AM	2:19:00 PM	1:20:00 PM	10:05:00 AM	3:25:00 PM	12:40:00 PM	
Depth (m)		From	2.44	2.44	3.66	2.79	3.05	2.44	3.66	
		To	2.84	2.84	4.88	3.20	3.66	2.62	4.88	
Chemicals	Units	RDL	Results	Results	Results	Results	Results	Results	Results	
Analysis Date			2017-11-22	2017-11-22	2017-11-22	2017-11-22	2017-11-22	2017-11-22	2017-11-22	
Acetone (2-Propanone)	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	16
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.32
Bromodichloromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.5
Bromoform	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.61
Bromomethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Carbon Tetrachloride	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.21
Chlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.4
Chloroform	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.47
Dibromochloromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.3
1,2-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.2
1,3-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.6
1,4-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.2
Dichlorodifluoromethane (FREON 12)	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	16
1,1-Dichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.47
1,2-Dichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
1,1-Dichloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.064
cis-1,2-Dichloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.9
trans-1,2-Dichloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.3
1,2-Dichloropropane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.16
cis-1,3-Dichloropropene	µg/g	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.059
trans-1,3-Dichloropropene	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	
Ethylbenzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.1
Ethylene Dibromide	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Hexane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	46
Methyl Ethyl Ketone (2-Butanone)	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	70
Methyl Isobutyl Ketone	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	31
Methyl t-butyl ether (MTBE)	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.6
Methylene Chloride(Dichloromethane)	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.6
Styrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	34
1,1,1,2-Tetrachloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.087
1,1,2,2-Tetrachloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Tetrachloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.9
Toluene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	6.4
1,1,1-Trichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6.1
1,1,2-Trichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Trichloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.55
Trichlorofluoromethane (FREON 11)	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4
Vinyl Chloride	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.032
o-Xylene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	26
p+m-Xylene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Xylene (Total)	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Analysis Date			2017-11-22	2017-11-22	2017-11-21	2017-11-21	2017-11-22	2017-11-22	2017-11-22	
Moisture	%		13	12	16	19	15	18	16	
Analysis Date			2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	
1,3-Dichloropropene (cis+trans)	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.059

VOC - Volatile Organic Compounds

RDL - Result Detection Limit

MOECC Table 2 - Ministry of Environment and Climate Change, Soil, Ground Water And Sediment Standards For Use Under Part XV.1 of the Environmental Protection Act, Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, 2011

Results above Table 2 criteria

Table 4 - PAH In Soils

Location			MW1		BH2	BH3	MW4	BH5	MW6	MOECC Table 2 Industrial Coarse
Sample ID			A0299	A0442 DUP of A0299	A0452	A0459	A0435	A0466	A0447	
Sample Date			2017-11-15	2017-11-15	2017-11-15	2017-11-16	2017-11-15	2017-11-16	2017-11-16	
Sample Time			9:15:00 AM	9:15:00 AM	2:10:00 PM	1:15:00 PM	10:05:00 AM	3:15:00 PM	12:40:00 PM	
Depth (m)		From	2.44	2.44	1.22	1.22	3.05	0.30	3.66	
		To	2.84	2.84	1.83	1.93	3.66	0.53	4.88	
Chemicals	Units	RDL	Results	Results	Results	Results	Results	Results	Results	
Analysis Date			2017-11-23	2017-11-23	2017-11-22	2017-11-23	2017-11-22	2017-11-23	2017-11-23	
Acenaphthene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	21
Acenaphthylene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.15
Anthracene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.67
Benzo(a)anthracene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.96
Benzo(a)pyrene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.3
Benzo(b/j)fluoranthene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.96
Benzo(g,h,i)perylene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Benzo(k)fluoranthene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.96
Chrysene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Dibenz(a,h)anthracene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.1
Fluoranthene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Fluorene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	62
Indeno(1,2,3-cd)pyrene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.76
1-Methylnaphthalene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	30
2-Methylnaphthalene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Methylnaphthalene, 2-(1-)	µg/g	0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	
Naphthalene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	9.6
Phenanthrene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	12
Pyrene	µg/g	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	96
Analysis Date			2017-11-22	2017-11-22	2017-11-21	2017-11-21	2017-11-22	2017-11-22	2017-11-22	
Moisture	%	1	19	17	7.6	18	14	6.1	16	

PAH - Polycyclic Aromatic Hydrocarbons

RDL - Result Detection Limit

MOECC Table 2 - Ministry of Environment and Climate Change, Soil, Ground Water And Sediment Standards For Use Under Part XV.1 of the Environmental Protection Act, Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, 2011

Results above Table 2 criteria

Table 5 - BTEX and PHC in Groundwater

Location			MW1		MW4	MW6	
Sample ID			A0562	A0563 DUP of A0562	A0564	A0561	
Sample Date			2017-11-17	2017-11-17	2017-11-17	2017-11-17	MOECC Table 2 Coarse
Sample Time			12:15:00 PM	12:15:00 PM	2:10:00 PM	10:35:00 AM	
Depth (m)		From	2.44	2.44	2.44	2.44	
		To	5.49	5.49	5.49	5.49	
Chemicals	Units	RDL	Results	Results	Results	Results	
Analysis Date			2017-11-22	2017-11-22	2017-11-22	2017-11-22	
Benzene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	5
Ethylbenzene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	2.4
Toluene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	24
o-Xylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	300
p+m-Xylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	
Xylene (Total)	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	
F1 (C6-C10)	µg/L	25	<25	<25	<25	<25	750
F1 (C6-C10) - BTEX	µg/L	25	<25	<25	<25	<25	
Analysis Date			2017-11-21	2017-11-21	2017-11-21	2017-11-21	
F2 (C10-C16 Hydrocarbons)	µg/L	100	<100	<100	<100	<100	150
F3 (C16-C34 Hydrocarbons)	µg/L	200	250	<200	<200	330	500
F4 (C34-C50 Hydrocarbons)	µg/L	200	<200	<200	<200	<200	500
Reached Baseline at C50		-	Yes	Yes	Yes	Yes	

BTEX - Benzene, Toluene, Ethylbenzene, Xylenes

PHC - Petroleum Hydrocarbons

RDL - Result Detection Limit

MOECC Table 2 - Ministry of Environment and Climate Change, Soil, Ground Water And Sediment Standards For Use Under Part XV.1 of the Environmental Protection Act, Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, 2011

Results above Table 2 criteria

Table 6 - Metals and Inorganics In Groundwater

Location			MW1		MW4	MW6			MOECC Table 2 Coarse
Sample ID			A0562	A0563 DUP of A0562	A0564	A0561	A0475	A0480 DUP of A0475	
Sample Date			2017-11-17	2017-11-17	2017-11-17	2017-11-17	2018-01-31	2018-01-31	
Sample Time			12:15:00 PM	12:15:00 PM	2:10:00 PM	10:35:00 AM	12:30:00 PM	12:30:00 PM	
Depth (m)		From	2.44	2.44	2.44	2.44	2.44	2.44	
		To	5.49	5.49	5.49	5.49	5.49	5.49	
Chemicals	Units	RDL	Results	Results	Results	Results	Results	Results	
Analysis Date			2017-11-23	2017-11-23	2017-11-23	2017-11-23	2018-02-05	2018-02-05	
Dissolved Antimony (Sb)	µg/L	0.20	<0.50	<0.50	<0.50	1.1	-	-	6
		0.50	-	-	-	-	<0.5	<0.5	
Dissolved Arsenic (As)	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	25
Dissolved Barium (Ba)	µg/L	0.50	310	310	120	150	-	-	1000
		2.0	-	-	-	-	120	120	
Dissolved Beryllium (Be)	µg/L	0.20	<0.50	<0.50	<0.50	<0.50	-	-	4
		0.50	-	-	-	-	<0.5	<0.5	
Dissolved Boron (B)	µg/L	5.0	40	40	27	47	-	-	5000
		10.0	-	-	-	-	49	49	
Dissolved Cadmium (Cd)	µg/L	0.10	0.16	0.21	<0.10	<0.10	<0.1	<0.1	2.7
Dissolved Chromium (Cr)	µg/L	1.0	<5.0	<5.0	<5.0	<5.0	-	-	50
		5.0	-	-	-	-	<5	<5	
Dissolved Cobalt (Co)	µg/L	0.10	2.6	2.6	0.78	4.5	-	-	3.8
		0.50	-	-	-	-	1.5	1.6	
Dissolved Copper (Cu)	µg/L	0.50	7.5	8.1	2.7	<1.0	-	-	87
		1.0	-	-	-	-	1.4	2.5	
Dissolved Lead (Pb)	µg/L	1.0	<0.50	<0.50	<0.50	<0.50	-	-	10
		0.50	-	-	-	-	<0.5	<0.5	
Dissolved Molybdenum (Mo)	µg/L	0.50	6.1	6.3	2.9	0.67	0.58	0.62	70
Dissolved Nickel (Ni)	µg/L	0.50	4.8	5.1	2.1	2.4	-	-	100
		1.0	-	-	-	-	1.6	1.5	
Dissolved Selenium (Se)	µg/L	0.50	<2.0	<2.0	<2.0	<2.0	-	-	10
		2.0	-	-	-	-	<2	<2	
Dissolved Silver (Ag)	µg/L	0.10	-	-	-	-	<0.1	<0.1	1.5
		0.20	<0.10	<0.10	<0.10	<0.10	-	-	
Dissolved Sodium (Na)	µg/L	100	-	-	140000	110000	130000	130000	490000
	µg/L	500	1700000	1700000	-	-	-	-	
Dissolved Thallium (Tl)	µg/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	2
Dissolved Uranium (U)	µg/L	0.05	3.1	3.0	2.3	0.27	-	-	20
		0.10	-	-	-	-	0.22	0.23	
Dissolved Vanadium (V)	µg/L	0.5	<0.50	<0.50	<0.50	1.9	1.5	0.95	6.2
Dissolved Zinc (Zn)	µg/L	5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	1100
Analysis Date			2017-11-22	2017-11-22	2017-11-22	2017-11-22	2018-02-05	2018-02-05	
Chloride (Cl)	mg/L	1.0	-	-	-	-	130	130	790
		2.0	-	-	170	180	-	-	
		30	2700	2700	-	-	-	-	
Analysis Date			2017-11-23	2017-11-23	2017-11-23	2017-11-23	2018-02-05	2018-02-05	
Mercury (Hg)	µg/L	0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.29
Analysis Date			2017-11-22	-	2017-11-22	2017-11-22	2018-02-05	2018-02-05	
Free Cyanide	µg/L	1	3	-	<1	<1	<1	<1	66
Analysis Date			2017-11-23	2017-11-23	2017-11-23	2017-11-23	2018-02-05	2018-02-05	
Chromium (VI)	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	25

RDL - Result Detection Limit

MOECC Table 2 - Ministry of Environment and Climate Change, Soil, Ground Water And Sediment Standards For Use Under Part XV.1 of the Environmental Protection Act, Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, 2011

Results above Table 2 criteria

Table 7 - VOCs In Groundwater

Location			MW1		MW4	MW6	
Sample ID			A0562	A0563 DUP of A0562	A0564	A0561	
Sample Date			2017-11-17	2017-11-17	2017-11-17	2017-11-17	MOECC Table 2 Coarse
Sample Time			12:15:00 PM	12:15:00 PM	2:10:00 PM	10:35:00 AM	
Depth (m)		From	2.44	2.44	2.44	2.44	
		To	5.49	5.49	5.49	5.49	
Chemicals	Units	RDL	Results	Results	Results	Results	
Analysis Date			2017-11-22	2017-11-22	2017-11-22	2017-11-22	
Acetone (2-Propanone)	µg/L	10	<10	<10	<10	<10	2700
Benzene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	5
Bromodichloromethane	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	16
Bromoform	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	25
Bromomethane	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	0.89
Carbon Tetrachloride	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	0.79
Chlorobenzene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	30
Chloroform	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	2.4
Dibromochloromethane	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	25
1,2-Dichlorobenzene	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	3
1,3-Dichlorobenzene	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	59
1,4-Dichlorobenzene	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	1
Dichlorodifluoromethane (FREON 12)	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	590
1,1-Dichloroethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	5
1,2-Dichloroethane	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	1.6
1,1-Dichloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	1.6
cis-1,2-Dichloroethylene	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	1.6
trans-1,2-Dichloroethylene	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	1.6
1,2-Dichloropropane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	5
cis-1,3-Dichloropropene	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	0.5
trans-1,3-Dichloropropene	µg/L	0.40	<0.40	<0.40	<0.40	<0.40	
Ethylbenzene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	2.4
Ethylene Dibromide	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	0.2
Hexane	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	51
Methyl Ethyl Ketone (2-Butanone)	µg/L	10	<10	<10	<10	<10	1800
Methyl Isobutyl Ketone	µg/L	5.0	<5.0	<5.0	<5.0	<5.0	640
Methyl t-butyl ether (MTBE)	µg/L	2.0	<2.0	<2.0	<2.0	<2.0	15
Methylene Chloride(Dichloromethane)	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	50
Styrene	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	5.4
1,1,1,2-Tetrachloroethane	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	1.1
1,1,2,2-Tetrachloroethane	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	1
Tetrachloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	1.6
Toluene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	24
1,1,1-Trichloroethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	200
1,1,2-Trichloroethane	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	4.7
Trichloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	1.6
Trichlorofluoromethane (FREON 11)	µg/L	0.50	<0.50	<0.50	<0.50	<0.50	150
Vinyl Chloride	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	0.5
o-Xylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	300
p+m-Xylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	
Xylene (Total)	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	

VOC - Volatile Organic Compounds

RDL - Result Detection Limit

MOECC Table 2 - Ministry of Environment and Climate Change, Soil, Ground Water And Sediment Standards For Use Under Part XV.1 of the Environmental Protection Act, Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, 2011

Results above Table 2 criteria

Table 8 - PAH In Groundwater

Location			MW1		MW4	MW6	MOECC Table 2 Coarse
Sample ID			A0562	A0563 DUP of A0562	A0564	A0561	
Sample Date			2017-11-17	2017-11-17	2017-11-17	2017-11-17	
Sample Time			12:15:00 PM	12:15:00 PM	2:10:00 PM	10:35:00 AM	
Depth (m)		From	2.44	2.44	2.44	2.44	
		To	5.49	5.49	5.49	5.49	
Chemicals	Units	RDL	Results	Results	Results	Results	
Analysis Date			2017-11-22	2017-11-22	2017-11-22	2017-11-22	
Acenaphthene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	4.1
Acenaphthylene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	1
Anthracene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	2.4
Benzo(a)anthracene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	1
Benzo(a)pyrene	µg/L	0.010	<0.010	<0.010	<0.010	<0.010	0.01
Benzo(b/j)fluoranthene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	0.1
Benzo(g,h,i)perylene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	0.2
Benzo(k)fluoranthene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	0.1
Chrysene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	0.1
Dibenz(a,h)anthracene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	0.2
Fluoranthene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	0.41
Fluorene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	120
Indeno(1,2,3-cd)pyrene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	0.2
1-Methylnaphthalene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	3.2
2-Methylnaphthalene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	
Methylnaphthalene, 2-(1-)	µg/L	0.071	<0.071	<0.071	<0.071	<0.071	
Naphthalene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	11
Phenanthrene	µg/L	0.030	<0.030	<0.030	<0.030	<0.030	1
Pyrene	µg/L	0.050	<0.050	<0.050	<0.050	<0.050	4.1

PAH - Polycyclic Aromatic Hydrocarbons

RDL - Result Detection Limit

MOECC Table 2 - Ministry of Environment and Climate Change, Soil, Ground Water And Sediment Standards For Use Under Part XV.1 of the Environmental Protection Act, Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, 2011

Results above Table 2 criteria

Table 9 - Field Screening Measurements

Sample Location	Sample Depth (m)	PID Reading† (ppm)	VOC Reading† (ppm)
MW1	0-1.22	0	0
MW1	1.22-1.57	0	0
MW1	1.57-2.16	0	0
MW1	2.44-2.84	0	0
MW1	2.84-3.48	0	0
MW1	3.66-4.19	0	0
MW1	4.19-4.88	0	0
MW1	4.88-5.49	0	0
MW1	5.49-6.1	0	0
BH2	0-0.63	0	0
BH2	1.22-2.03	0	0
BH2	2.03-2.44	0	0
BH2	2.44-3	0	0
BH2	3.07-3.45	0	0
BH2	3.66-4.27	0	0
BH2	4.27-4.88	0	0
BH3	0-1.22	0	0
BH3	1.22-1.93	0	0
BH3	1.93-2.13	0	0
BH3	2.44-2.79	0	0
BH3	2.79-3.28	0	0
BH3	3.66-4.47	0	0
BH3	4.47-4.72	0	0
MW4	0-1.22	0	0
MW4	1.22-1.57	0	0
MW4	1.57-2.29	0	0
MW4	2.44-3.05	0	0
MW4	3.05-3.51	0	0
MW4	3.66-3.91	0	0
MW4	3.76-4.88	0	0
MW4	4.88-5.89	0	0
MW4	5.89-6.1	0	0

Sample Location	Sample Depth (m)	PID Reading† (ppm)	VOC Reading† (ppm)
BH5	0-0.23	0	0
BH5	0.23-0.53	0	0
BH5	1.22-2.08	0	0
BH5	2.44-3.12	0	0
BH5	3.12-3.66	0	0
BH5	3.66-4.44	0	0
BH5	4.44-4.88	0	0
MW6	0-1.22	0	0
MW6	1.22-1.98	0	0
MW6	2.44-2.82	0	0
MW6	3.07-3.51	0	0
MW6	3.66-4.65	0	0
MW6	4.65-4.88	0	0
MW6	4.88-5.49	0	0
MW6	5.49-6.1	0	0

† Samples measured using a RKI Eagle 2
HC - Hydrocarbon
VOC - Volatile Organic Compounds

Table 10 Monitoring Well Construction and Water Level Measurements

Monitoring Well	Installation Date (dd/mm/yyyy)	Well Depth From Ground Level (m)	Length of Screen (m)	Well Ground Elevation (masl)	Groundwater Elev. (masl)
MW1	15/11/2017	6.1	3.05	87.63	83.42
MW4	16/11/2017	6.1	3.05	87.32	83.20
MW6	16/11/2017	6.1	3.05	87.41	83.04

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Phase I ESA Area
1871 Merivale Rd.
Ottawa, ON
Figure 1a

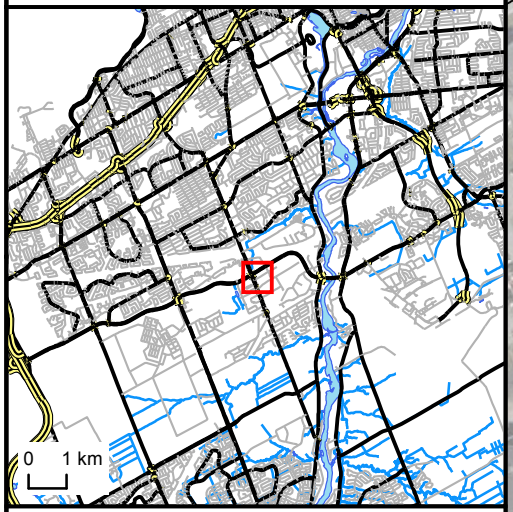
#10869

Legend

- Roads
- Phase 1 Study Area (250m)
- Property Boundary

Notes:

1871 Merivale Road
Nepean, Ontario



Source:

Ontario Ministry of Natural Resources

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Merivale Road

Phase 1 Drawings

Neighbouring Uses

Figure 1b

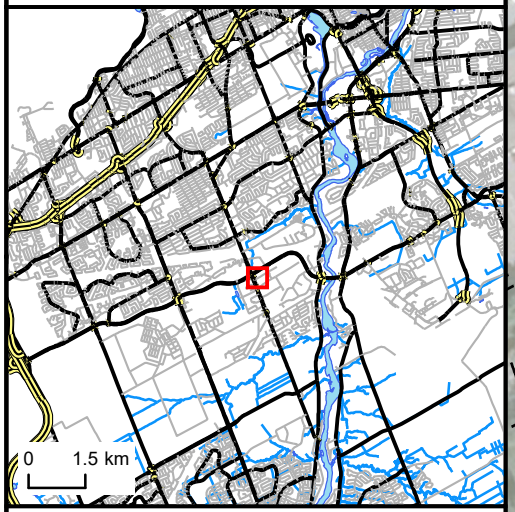
#10869

Legend

- Roads
- Water
- Property Boundary

Notes:

1871 Merivale Road
Nepean, Ontario



Source:

Ontario Ministry of Natural Resources

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Merivale Road

Phase 1 Drawings

Areas of Potential Environmental Concern

Figure 1c

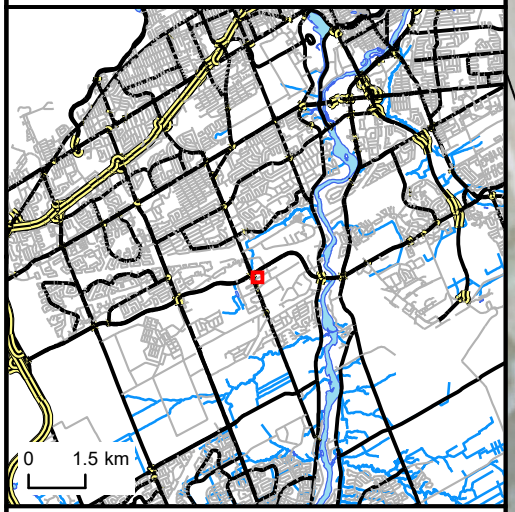
#10869

Legend

- Borehole
- Monitoring Well
- Roads
- Property Boundary
- APEC 1
- APEC 2

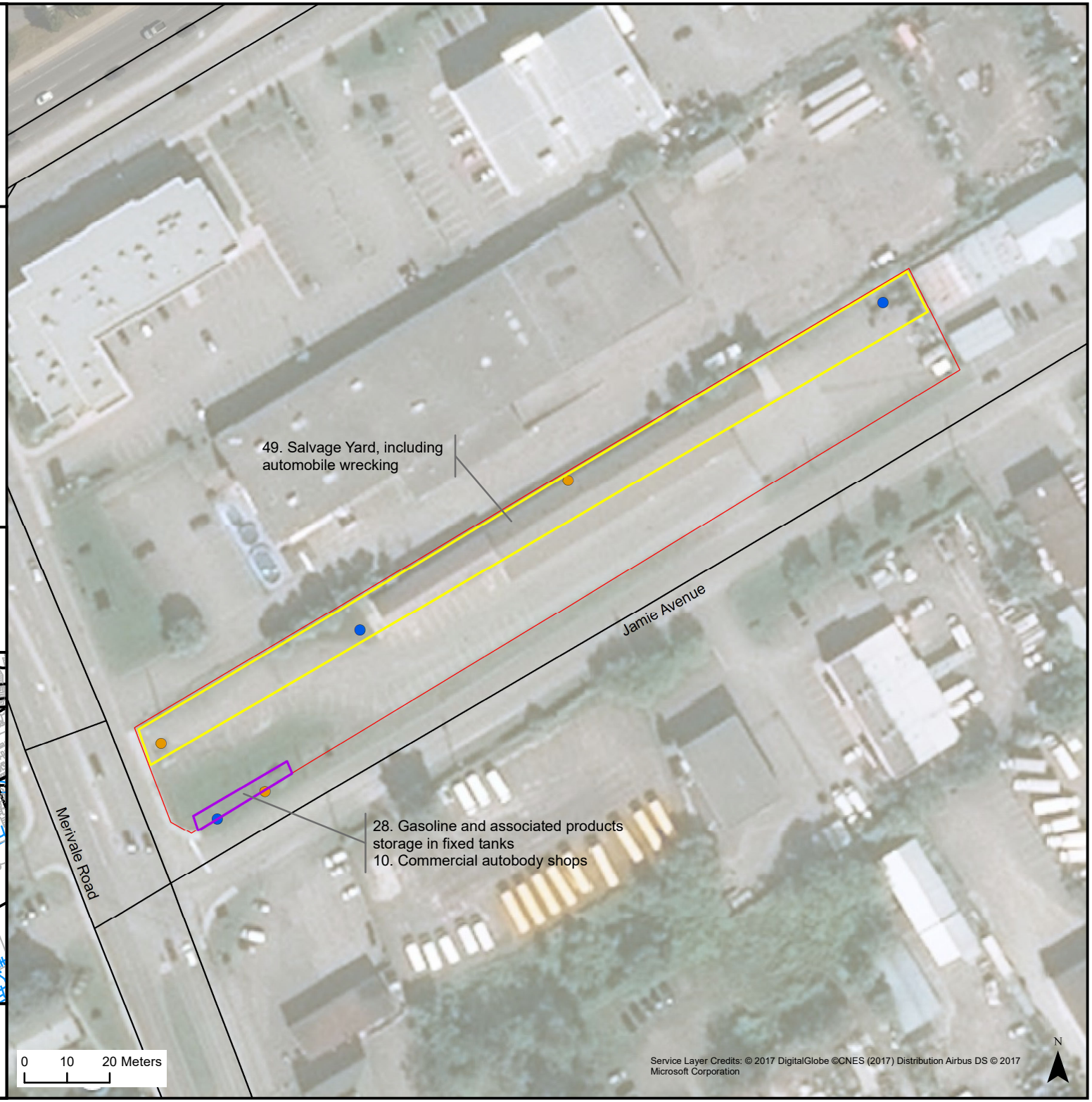
Notes:

1871 Merivale Road
Nepean, Ontario



Source:

Ontario Ministry of Natural Resources



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Merivale Road

Site Investigation

Borehole and Monitoring Well Locations

Figure 2

#10869

Legend

- Borehole
- Monitoring Well
- Water
- Property Boundary

Notes:

1871 Merivale Road
Nepean, Ontario

Source:

Ontario Ministry of Natural Resources

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Merivale Road

Site Investigation

Groundwater Flow

Figure 3

#10869

Legend

- Monitoring Well
- Groundwater Contours (masl)
- Water
- Property Boundary

Notes:

1871 Merivale Road
Nepean, Ontario

Source:

Ontario Ministry of Natural Resources

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Merivale Road

Site Investigation

Groundwater Exceedances

Figure 4

#10869

Legend

- Exceedance
- No Exceedance
- Water
- Property Boundary

Notes:

1871 Merivale Road
Nepean, Ontario

MOECC Table 2 - Coarse
Cobalt - 3.8 µg/L
Sodium - 490,000 µg/L
Chloride - 790 mg/L

The chloride exceedance at MW1 is considered to be the result of snow and de-icing measures as contemplated by Sec 48 (3) of Reg.153/04 and is deemed not to be an exceedance for the purpose of Part XV.1 of the Act. O. Reg. 153/04, s. 48 (3)

Source:

Ontario Ministry of Natural Resources

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Merivale Road

Site Investigation

Subsurface Utilities

Figure 5

#10869

Legend

- Borehole
- Monitoring Well
- Gas
- Sanitary
- Storm
- Roads
- Water
- Property Boundary

Notes:

1871 Merivale Road
Nepean, Ontario

Source:

Ontario Ministry of Natural Resources

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Merivale Road

Site Investigation

Cross Section Overview

Figure 6a

#10869

Legend

- Borehole
- Monitoring Well
- Property Boundary

Notes:

1871 Merivale Road
Nepean, Ontario

Source:

Ontario Ministry of Natural Resources

1705 Argentia Road, Unit 3
Mississauga, ON, L5N 3A9
1-800-267-4797

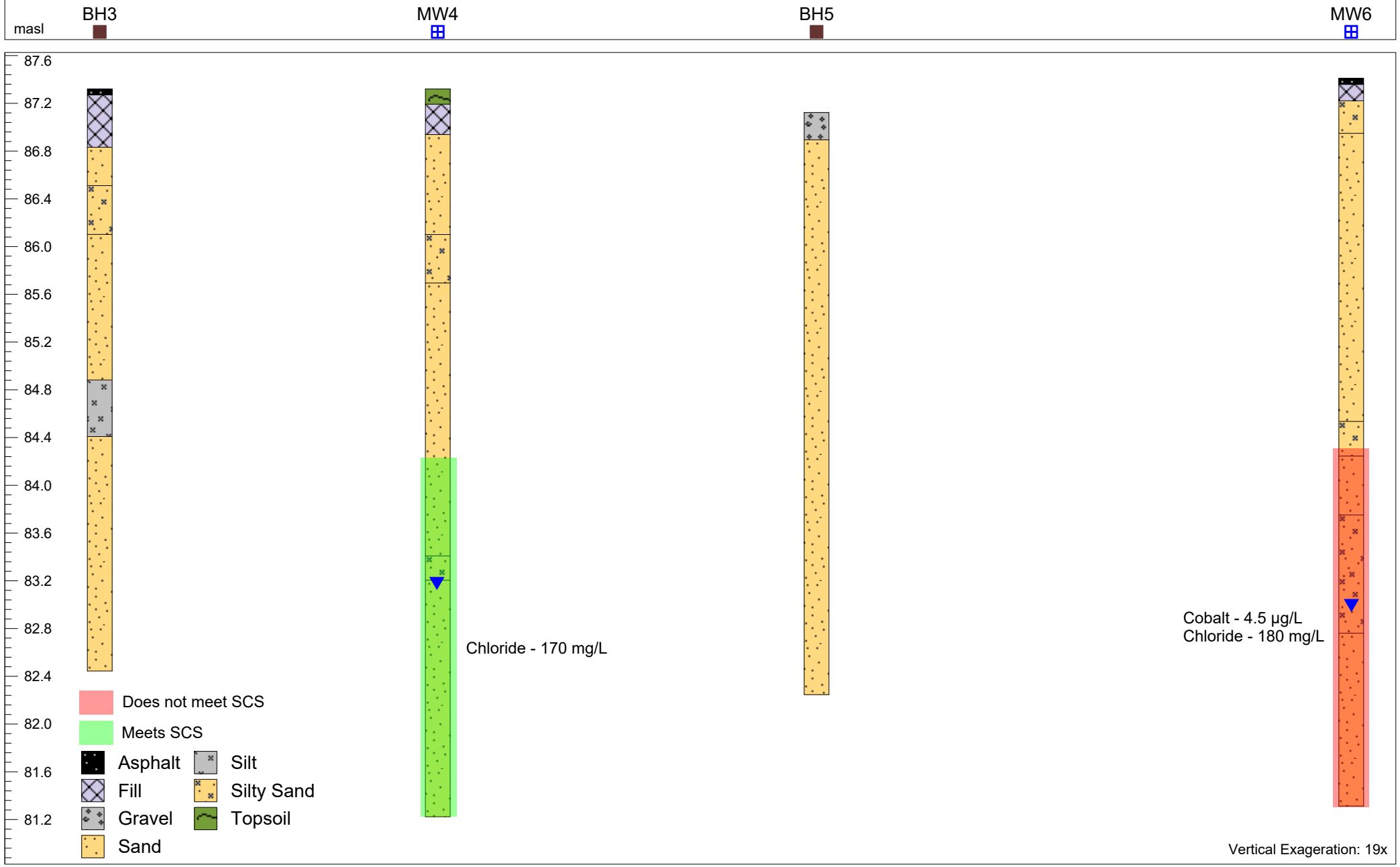
Figure 6b
Cross Section A-A'
Groundwater - Metals

Project: Merivale Road

Project No.: 10869

Date: January 2018

Location: 1871 Merivale Road
Nepean, ON



AEL environment
1705 Argentia Road, Unit 3
Mississauga, ON, L5N 3A9
1-800-267-4797

Figure 6c

Cross Section B-B'

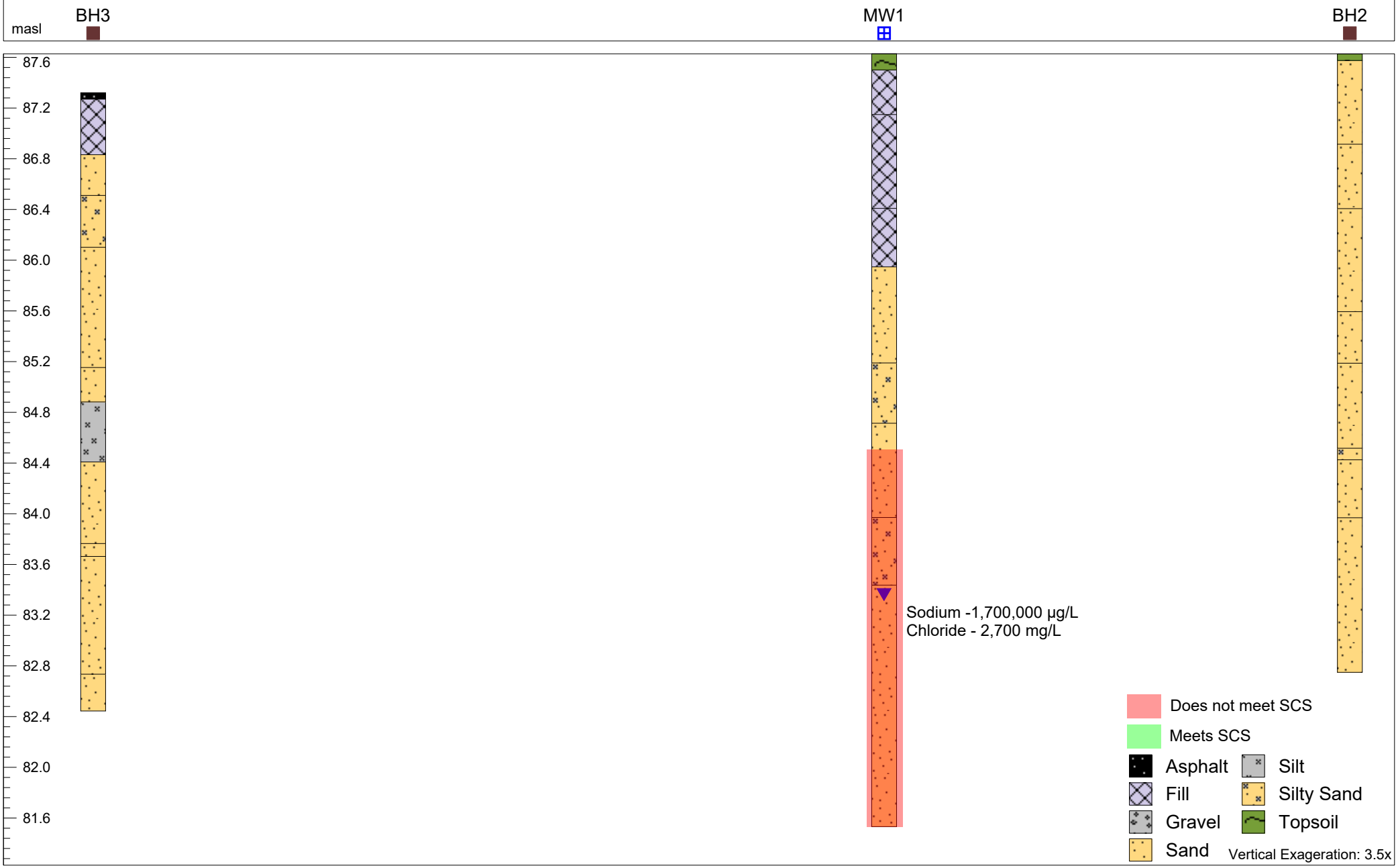
Groundwater - Metals

Project: Merivale Road

Project No.: 10869

Date: January 2018

Location: 1871 Merivale Road
Nepean, ON



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APPENDIX 1
Sampling and Analysis Plan

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SAMPLING & ANALYSIS PLAN

PROJECT NAME: MERIVALE RD.

LOCATION: 1871 MERIVALE RD., OTTAWA, ON

CLIENT CONTACT: BENSON GROUP INC.

AEL FILE NO.: 10869B

DATE: NOVEMBER 8, 2017

PREPARED BY: PRIYA PATEL

The purpose of the Sampling and Analysis Plan (SAP) is to identify and provide procedures for the following Phase II field related activities: the sampling method, the sampling media, number of samples, sampling locations, field measurements required and samples to be submitted for laboratory analysis.

The plan includes consideration by the Qualified Person (QP_{ESA}) for potentially contaminating activities (PCAs), contaminants of concern (CoC) and any matters relating to the environmental condition of the property. All CoCs are to be sampled and analyzed to characterize the environmental condition of the property in order to make decisions regarding the property.

The SAP is a required component of a Phase II ESA and applies to the community property at 1871 Merivale Rd, in Nepean, Ontario ("the Site").

1. Introduction

The SAP was prepared following a review of the information obtained about the property during the Phase I ESA.

The results of the Phase I ESA have confirmed that the Phase II Property is not on or located within 30 m of a surface water body or environmentally sensitive area, that the groundwater at the property is not used for drinking water and that there is more than 2 m of overburden present. Accordingly, the analytical results for soil and groundwater samples will be compared to Table 3 of the MOECC *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011* for community land use (the "MOECC 2011 Table 3 Standards"). The MOECC 2011 Table 3 Standards are based on updated science and are protective of human health and ecosystems.

2. Scope of Investigation

Proposed sampling locations will be distributed as follows to investigate the two (2) Areas of Environmental Potential Concern (APEC #1 and #2) identified by the Phase I ESA.

APECs[1]	Location of APEC on Phase I Property	PCA[2]	Location of PCA[3]	Contaminants of Concern[4]	Media Potentially Impacted[5]
Southwestern property boundary (APEC #1)	Southern western property boundary	28. Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHC F1-F4 and VOCs (including BTEX), PAHs, Metals & inorganics	Soil Groundwater
Northern property boundary (APEC #2)	Northern property boundary	49. Salvage Yard, including automobile wreaking	Off-Site	PHC F1-F4 and VOCs (including BTEX), PAHs, Metals & inorganics	Soil Groundwater

APEC #1 – Southwestern Property Boundary

- Drill two (2) boreholes, one (1) of which to be completed as permanent monitoring well to investigate potential impacts from potential migration of contaminants from leaks and/or spills from the neighbouring retail gas station and automotive service facility. Soil and groundwater samples will be collected and submitted for analysis of COCs (PHC F1-F4, VOCs, BTEX, PAHs, and Metals & Inorganics).

APEC #2 – Northern Property Boundary

- Drill four (4) boreholes, two (2) of which to be completed as permanent monitoring wells to further investigate potential impacts from potential migration of contaminants from the historical presence of an automobile junkyard adjacent to the northern Site boundary. Soil and groundwater samples will be collected and submitted for analysis of COCs (PHC F1-F4, VOCs, BTEX, PAHs, and Metals & Inorganics).

Since the Phase II Property does not contain a surface water body, no surface water or sediment will be collected. No vapour probes will be installed.

Tasks relating to the Phase II ESA will include:

- Review Site Specific Health and Safety Plan (HASP) including – safety provisions for project team members (i.e. protective gloves, high-vis safety vest, hard hat, safety boots);
- Review of AEL Standard Operating Procedures for borehole and monitoring well installation, shallow soil sampling, field screening and equipment calibration, field measurement of water quality, groundwater sampling, disposal of soil cuttings and development water and equipment decontamination;
- Review of locates for all services at the Site prior to drilling (locates provided by SLT through Ontario One Call and private locator);

- Drilling of six (6) boreholes, three (3) of which to be completed as permanent monitoring wells, to a maximum depth of 6.0 m bgs.
- Assessment and field screening of soil samples from each borehole for the presence of environmental impacts;
- Submission of selected soil samples for laboratory analysis of required COCs according to chain-of-custody procedures;
- Measurement of water levels at each of the monitoring wells at the Site for determination of groundwater flow and gradient;
- Well development to remove drill liquids, followed by purging and field assessment of groundwater from each monitoring well using conventional purging and sampling methods;
- Collection of groundwater samples from each of the existing and newly installed monitoring wells for laboratory analysis of required COCs according to chain-of-custody procedures;
- Quality Assurance/Quality control (QA/QC) procedures for field activities and laboratory data; and
- Photographic record of field activities.

All samples shall be submitted to Maxxam Analytics in Mississauga, ON.

3. Standard Operating Procedures

AEL technical staff shall review and follow the following company Standard Operating Procedures:

- Drilling (revised February 2015);
- Field Screening Measurements (revised February 2015);
- Monitoring Well Installation (revised February 2015);
- Monitoring Well development (revised February 2015);
- Field Measurement of Water Quality (revised February 2015); and
- Groundwater Sampling (revised February 2015).

4. Health and Safety Program

COCs in soil and groundwater identified by the Phase I ESA include the following:

1. Petroleum Hydrocarbon (PHC) Fractions F1-F4 in soil and groundwater.
2. Volatile Organic Compounds (VOCs) including Benzene, Ethyl benzene, Toluene, Xylene (BTEX) in soil and groundwater.
3. Metals and inorganics in groundwater and soil
4. Polycyclic Aromatic Hydrocarbons (PAHs) in soil and groundwater.

The prepared Health and Safety Plan shall be reviewed and followed. AEL personnel shall don safety boots, reflective vests, nitrile gloves and long pants for the duration of all sampling activities.

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Access to the Site is to be provided from Merivale Road. AEL staff shall park on-Site during the sampling and field activities. Procedures for working alone include notification of arrival and departure and periodic check-ins as required by the project manager.

5. Field Activities

Equipment calibration and maintenance shall be performed by AEL according to manufacturers' recommendations and AEL SOP prior to arriving at the Site to ensure proper operation in the field.

Soil cores, hand samples and grab samples shall be examined for visual and olfactory (odour) evidence of environmental impact.

Soil cores where there is no obvious free product stains or sheen shall be selected for field screening using On-Site field screening involved screening soil cores with a RKI Eagle II Gas Meter equipped with a photoionization detector (PID) and a catalytic sensor to determine if VOCs or hydrocarbons (HCs) were present. The PID was used to detect the presence of any VOCs in the range of 0.1 – 999.9 ppm with a precision of 0.1 ppm and an accuracy of 10 to 2000 ppm: ± 3%. It was calibrated prior to use by Pine Environmental, using 100 ppm isobutylene. The catalytic sensor was used to detect the presence of HCs in the range of 0 – 100% Lower Explosive Limit (LEL) with an accuracy of 0 to 100% LEL: ± 3%. It was calibrated prior to use by Pine Environmental, using hexane.

Soil samples being analyzed for volatile parameters shall be placed in septum vials pre-charged with methanol preservative with Teflon® lined lids provided by the laboratory. The following details the container types and preservatives that shall be used for groundwater sample collection:

Parameter Group	Container Type	Preservative
PHC Fraction F1 & VOCs	3 x 40 mL Glass Vials 1 x 60 mL Glass Jar	$NaHSO_4$ None
PHC Fraction F2-F4	1 x 120 mL Glass Jar	None
Metals & Inorganics	1 x 250 mL Glass Jar	None
PAHs	1 x 120 mL Glass Jar	None

Well development by pumping will be required to remove drilling liquid introduced by the driller before sampling commences. Water levels shall be collected prior to any purging of the wells. The water level probe is to be decontaminated between sampling locations as indicated in the SOP.

Field chemistry parameters that may include conductivity, pH, temperature, dissolved oxygen, oxidation reduction potential and turbidity should be monitored during well development until stabilized measurements are recorded. If the monitor does not provide sufficient water, each monitoring well should be purged dry at least three times. The purge water is to be collected and stored in the drums located at the Phase II Property. Dedicated tubing should be used to purge each monitoring well.

Groundwater samples being analyzed for volatile parameters shall be placed in zero head-space, septum vials with Teflon® lined lids provided by the laboratory. The following details the container types and preservatives that shall be used for groundwater sample collection:

Parameter Group	Container Type	Preservative
PHC Fraction F1 & VOCs	3 x 40 mL Glass Vials	$NaHSO_4$
PHC Fraction F2-F4	2 x 250 mL Amber Glass Bottle	HCl
Metals & Inorganics	1 x 125 mL Plastic Bottle (Field Filtered)	$(NH_4)2SO_4/NH_4OH$
	1 x 125 mL Plastic Bottle	NaOH
	1 x 120 mL Plastic Bottle (Field Filtered)	HNO_3
	1 x 500 mL Plastic Bottle	None
	1 x 100 mL Clear Glass Bottle	HCl
PAHs	2 x 250 mL Amber Glass Bottle	$NaHSO_4$

The samples should be stored in insulated coolers with ice packs to initiate cooling for transportation to an accredited laboratory.

Field logs are to be maintained by technical staff to record data collection and sampling activities. The equipment used to collect samples shall be noted, along with the time of sampling, sampling description, depth from which the samples were collected and volume and number of containers. All samples are to be accompanied by a completed chain of custody record which lists each sample identifier, sampling date and time, sample matrix, the number of containers and analytical parameters for which the sample is to be tested.

6. Physical Impediments and Field Changes

There are no known physical or access impediments to completing the scope or work, however conditions such as weather, buried utilities, minimum clearance requirements or ongoing Site operations may require alteration and revision of the investigation and sampling plan. Report any of these situations to the AEL PM and QP_{ESA} as soon as possible for instruction and revisions.

7. Quality Assurance and Quality Control Results

The quality of data depends upon planning, sampling, analysis and reporting. The Sampling and Analysis Plan for this project required data validation and acceptance of greater than 90% of the sample results.

Based on the anticipated volume of soil and groundwater samples (less than 10), a minimum of one duplicate soil and groundwater sample shall be collected for QA/QC purposes for each COC and a trip blank submitted for VOCs in groundwater.

Laboratory Certificates of Analysis shall be obtained from Maxxam for all soil and groundwater sample submitted to the laboratory. The lab reports shall meet the requirements of S. 47(3) of O. Reg. 153/04 (as amended) and be signed by the account manager.

The QP_{ESA} shall confirm with the lab that all samples were received in good condition, within as acceptable temperature range and that the holding times, preservation requirements and the proper number of containers were met.

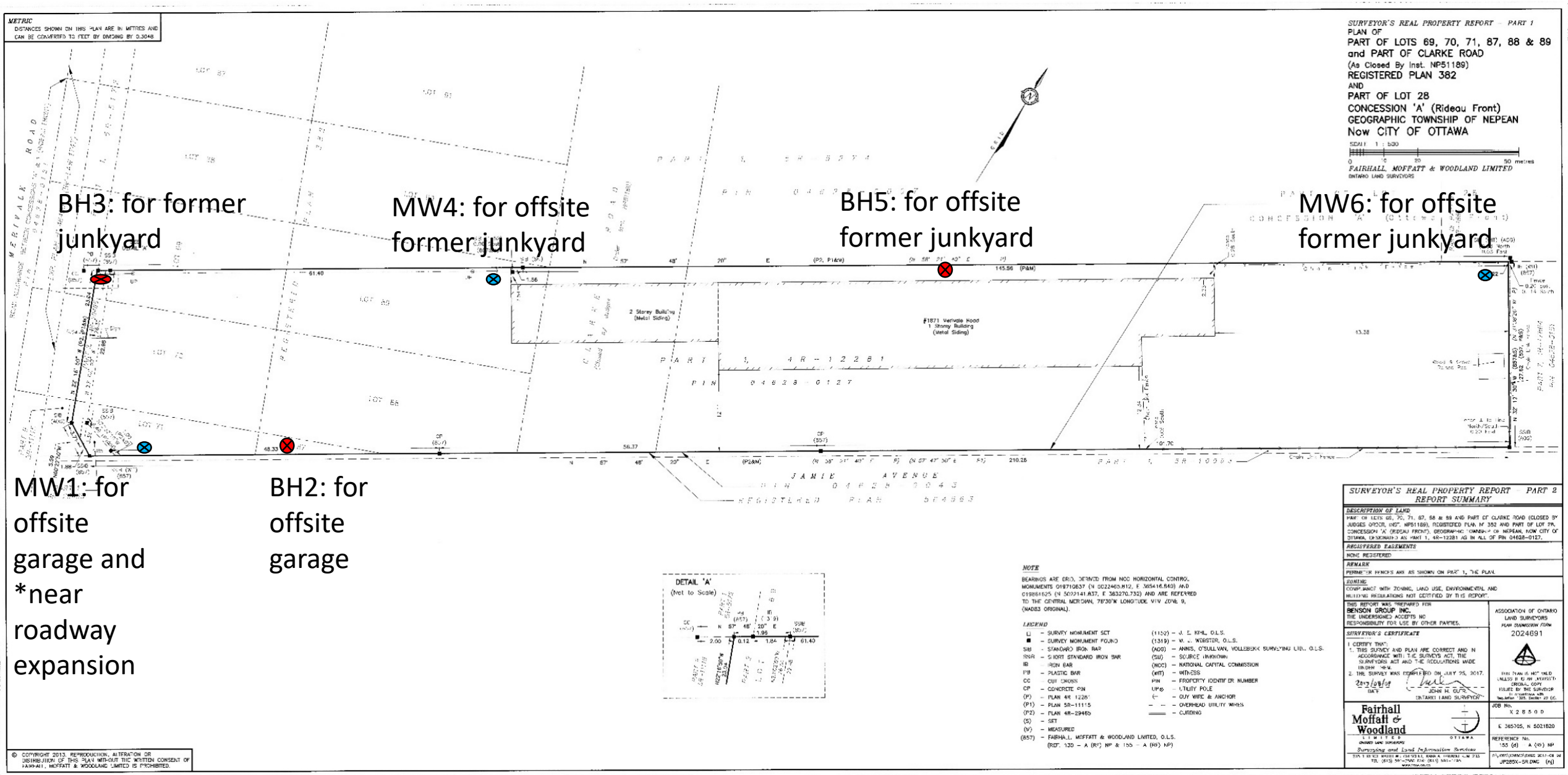
The QP_{ESA} shall review the results of analysis and address all occurrences where the data has been qualified by the lab due to sample dilution, matrix interference, RPD values >30% for duplicate samples and reporting detection limits (RDLs) greater than the applicable MOECC Site Condition Standard.

8. Other Considerations

Pedestrian/Vehicle Traffic

The Site is currently vacant, but access is unrestricted at the west and south sides. AEL shall consider blocking any unsupervised pedestrian and vehicle traffic entering the site as necessary to properly carry out the work described above.

END


BH3: for former junkyard
MW4: for offsite former junkyard
BH5: for offsite former junkyard
MW6: for offsite former junkyard
MW1: for offsite garage and *near roadway expansion
BH2: for offsite garage
METRIC
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048
SURVEYOR'S REAL PROPERTY REPORT – PART 1
PLAN OF
PART OF LOTS 69, 70, 71, 87, 88 & 89
and PART OF CLARKE ROAD
(As Closed By Inst. NP51189)
REGISTERED PLAN 382
AND
PART OF LOT 28
CONCESSION 'A' (Rideau Front)
GEOGRAPHIC TOWNSHIP OF NEPEAN
Now CITY OF OTTAWA
SCALE 1 : 500
0 10 20 50 metres
FAIRHALL, MOFFATT & WOODLAND LIMITED
ONTARIO LAND SURVEYORS
MERIVALE ROAD
REGISTERED PLAN 382
CLARKE ROAD
JAMIE AVENUE
2 Storey Building (Metal Siding)
#1871 Merivale Road 1 Storey Building (Metal Siding)
PART 1, 4R-12281
PIN 04628-0127
PART 1, 5R-10083
PIN 04628-0043
REGISTERED PLAN 5R4883
Chain Link Fence
DETAIL 'A'
(Not to Scale)
SURVEYOR'S REAL PROPERTY REPORT – PART 2
REPORT SUMMARY
DESCRIPTION OF LAND
PART OF LOTS 69, 70, 71, 87, 88 & 89 AND PART OF CLARKE ROAD (CLOSED BY JUDGES ORDER, INST. NP51189), REGISTERED PLAN M 382 AND PART OF LOT 28, CONCESSION 'A' (RIDEAU FRONT), GEOGRAPHIC TOWNSHIP OF NEPEAN, NOW CITY OF OTTAWA, DESIGNATED AS PART 1, 4R-12281 AS IN ALL OF PIN 04628-0127.
REGISTERED EASEMENTS
NONE REGISTERED
REMARK
PERIMETER FENCES ARE AS SHOWN ON PART 1, THE PLAN.
ZONING
COMPLIANCE WITH ZONING, LAND USE, ENVIRONMENTAL AND BUILDING REGULATIONS NOT CERTIFIED BY THIS REPORT.
THIS REPORT WAS PREPARED FOR
BENSON GROUP INC.
THE UNDERSIGNED ACCEPTS NO RESPONSIBILITY FOR USE BY OTHER PARTIES.
SURVEYOR'S CERTIFICATE
I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE THEREUNDER.
2. THIS SURVEY WAS COMPLETED ON JULY 25, 2017.
2017/08/09
DATE
JOHN H. GUY
ONTARIO LAND SURVEYOR
ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2024691
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
Fairhall Moffatt & Woodland
LIMITED
OTTAWA
ONTARIO LAND SURVEYORS
Surveying and Land Information Services
JOB No.
X285OO
E 365705, N 5021820
REFERENCE No.
155 (d) A (24) RP
JP285X-SR.DWG (rj)
NOTE
BEARINGS ARE GRID, DERIVED FROM NCC HORIZONTAL CONTROL MONUMENTS 019710637 (N 5022465.812, E 365416.640) AND 019861625 (N 5022141.837, E 363270.732) AND ARE REFERRED TO THE CENTRAL MERIDIAN, 76°30'W LONGITUDE MTM ZONE 9, (NAD83 ORIGINAL).
LEGEND
SIB – STANDARD IRON BAR
SSIB – SHORT STANDARD IRON BAR
IB – IRON BAR
PB – PLASTIC BAR
CC – CUT CROSS
CP – CONCRETE PIN
(P) – PLAN 4R-12281
(P1) – PLAN 5R-11115
(P2) – PLAN 4R-29465
(S) – SET
(M) – MEASURED
(857) – FAIRHALL, MOFFATT & WOODLAND LIMITED, O.L.S.
(R) 135 – A (R) NP & 155 – A (R) NP)
(1152) – J. E. KIHL, O.L.S.
(1319) – W. J. WEBSTER, O.L.S.
(A09) – ANNIS, O'SULLIVAN, VOLLEBEKK SURVEYING LTD., O.L.S.
(SU) – SOURCE UNKNOWN
(NCC) – NATIONAL CAPITAL COMMISSION
(WIT) – WITNESS
PIN – PROPERTY IDENTIFIER NUMBER
UP – UTILITY POLE
– GUY WIRE & ANCHOR
– OVERHEAD UTILITY WIRES
– CURBING
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AELenvironment
A division of Aeon Egmond Ltd.

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APPENDIX 2
Finalized Field Logs

1705 Argentia Road, Unit 3
Mississauga, ON, L5N 3A9
1-800-267-4797

Project No.: 10869

Log of Test Hole: MW1

Project: Merivale Road

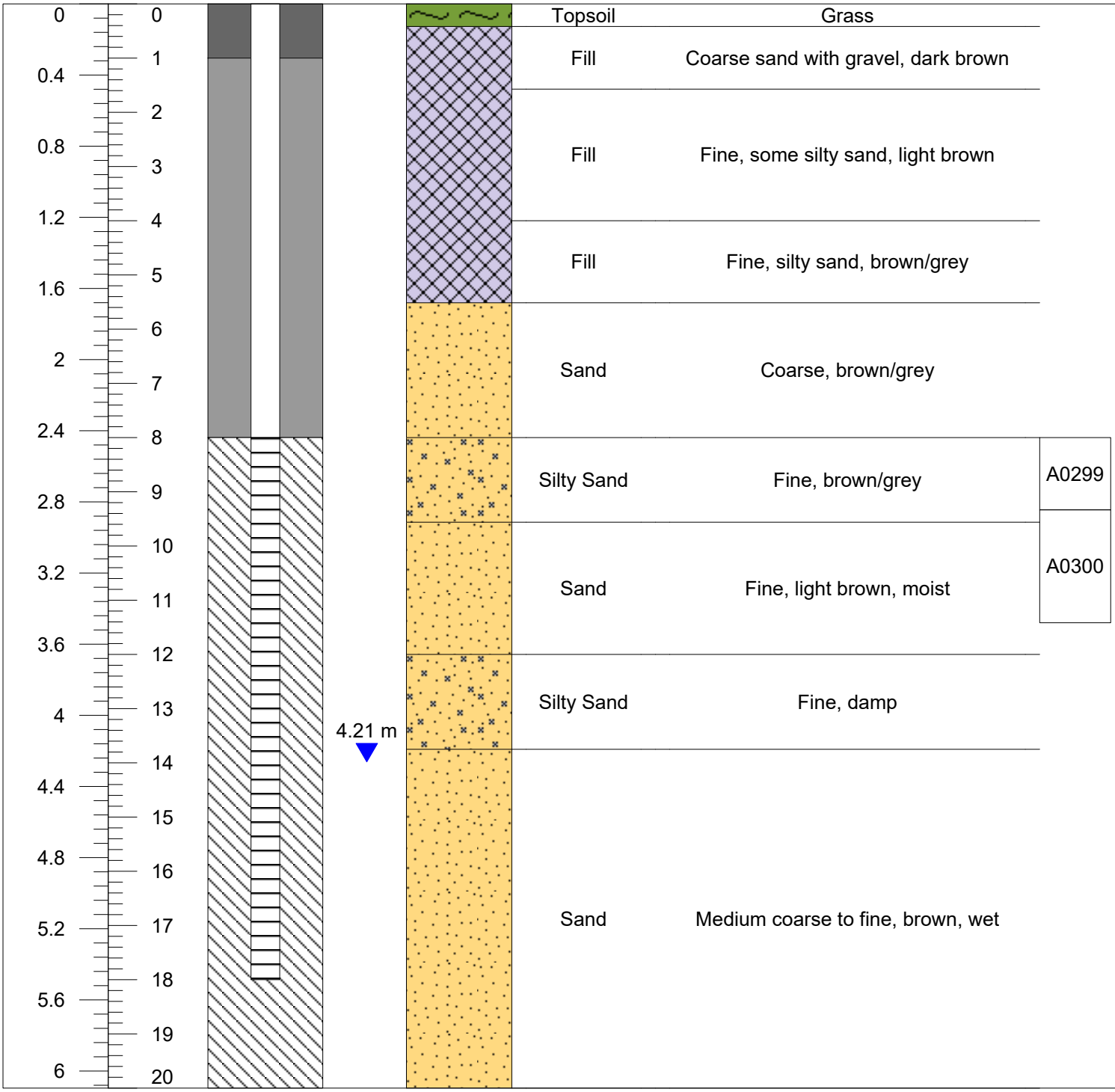
Easting: 443347.11

Project Manager: Charna Kozole

Northing: 5020258.89

Location: 1871 Merivale Road
Ottawa, ON

Elevation: 87.63



Drill Method: Direct Push

Hole Depth (m): 6.1 m

Drill Date: Nov 15/17

Technician: MG

Hole Diameter: 2"

Drilled By: Downing

1705 Argentia Road, Unit 3
Mississauga, ON, L5N 3A9
1-800-267-4797

Project No.: 10869

Log of Test Hole: BH2

Project: Merivale Road

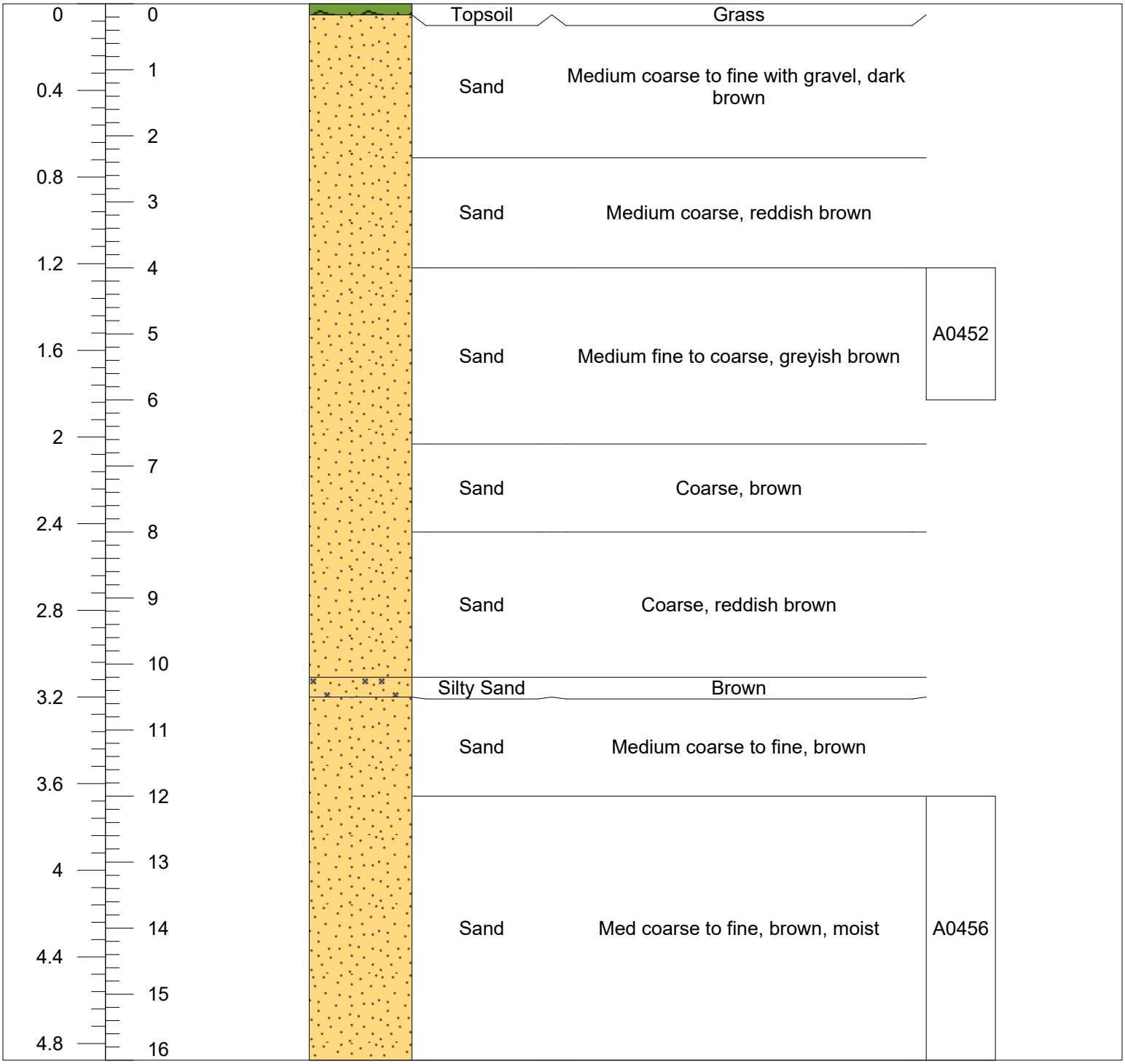
Easting: 443358.38

Project Manager: Charna Kozole

Northing: 5020265.33

Location: 1871 Merivale Road
Ottawa, ON

Elevation: 87.63



Drill Method: Direct Push

Hole Depth (m): 4.88 m

Drill Date: Nov 16/17

Technician: MG

Hole Diameter: 2"

Drilled By: Downing

AEL environment
1705 Argentia Road, Unit 3
Mississauga, ON, L5N 3A9
1-800-267-4797

Project No.: 10869

Log of Test Hole: BH3

Project: Merivale Road

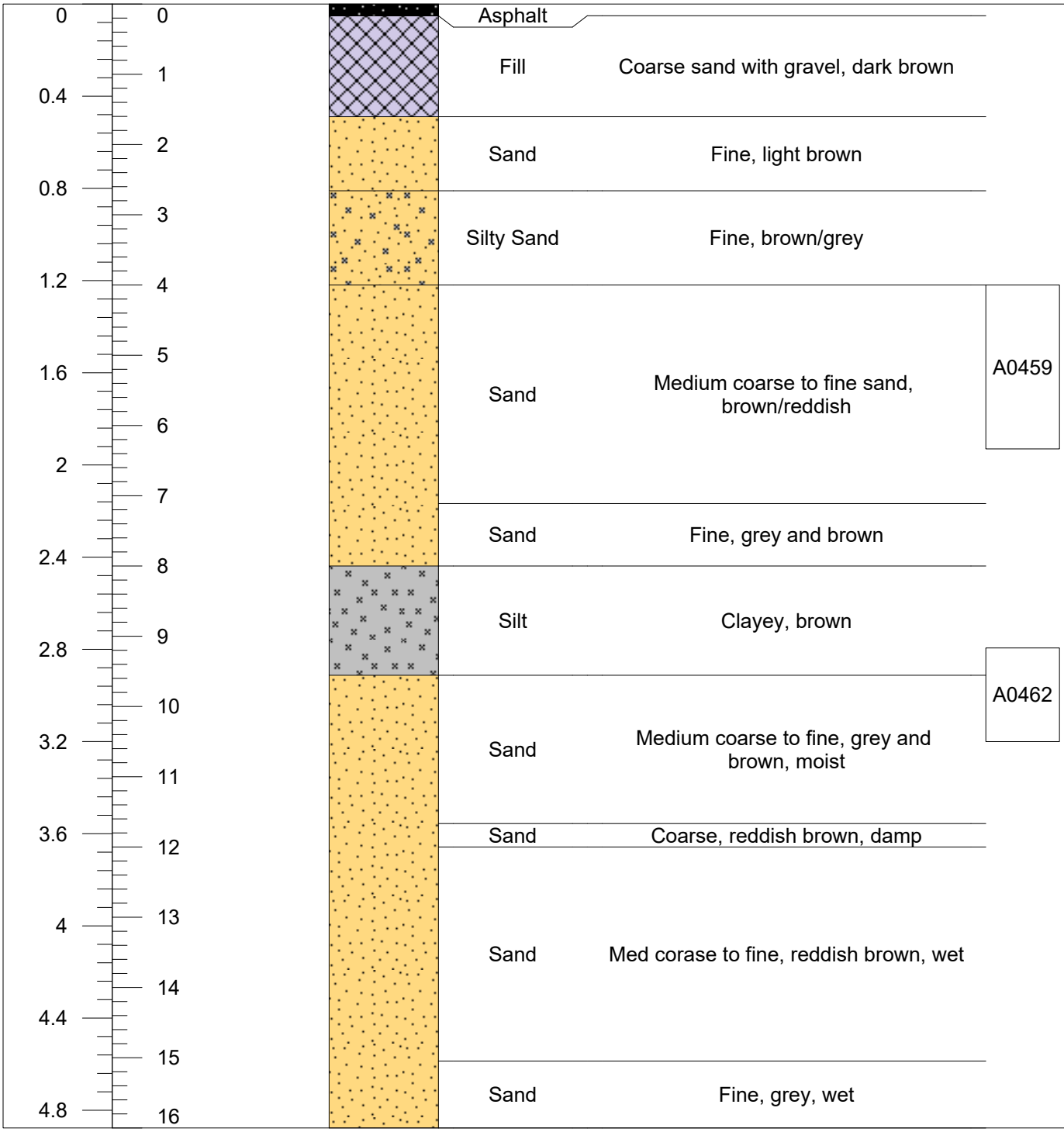
Easting: 443333.96

Project Manager: Charna Kozole

Northing: 5020276.59

Location: 1871 Merivale Road
Ottawa, ON

Elevation: 87.32



Drill Method:	Direct Push	Hole Depth (m):	4.88 m
Drill Date:	Nov 16/17	Technician:	MG
Hole Diameter:	2"	Drilled By:	Downing

1705 Argentia Road, Unit 3
Mississauga, ON, L5N 3A9
1-800-267-4797

Project No.: 10869

Log of Test Hole: MW4

Project: Merivale Road

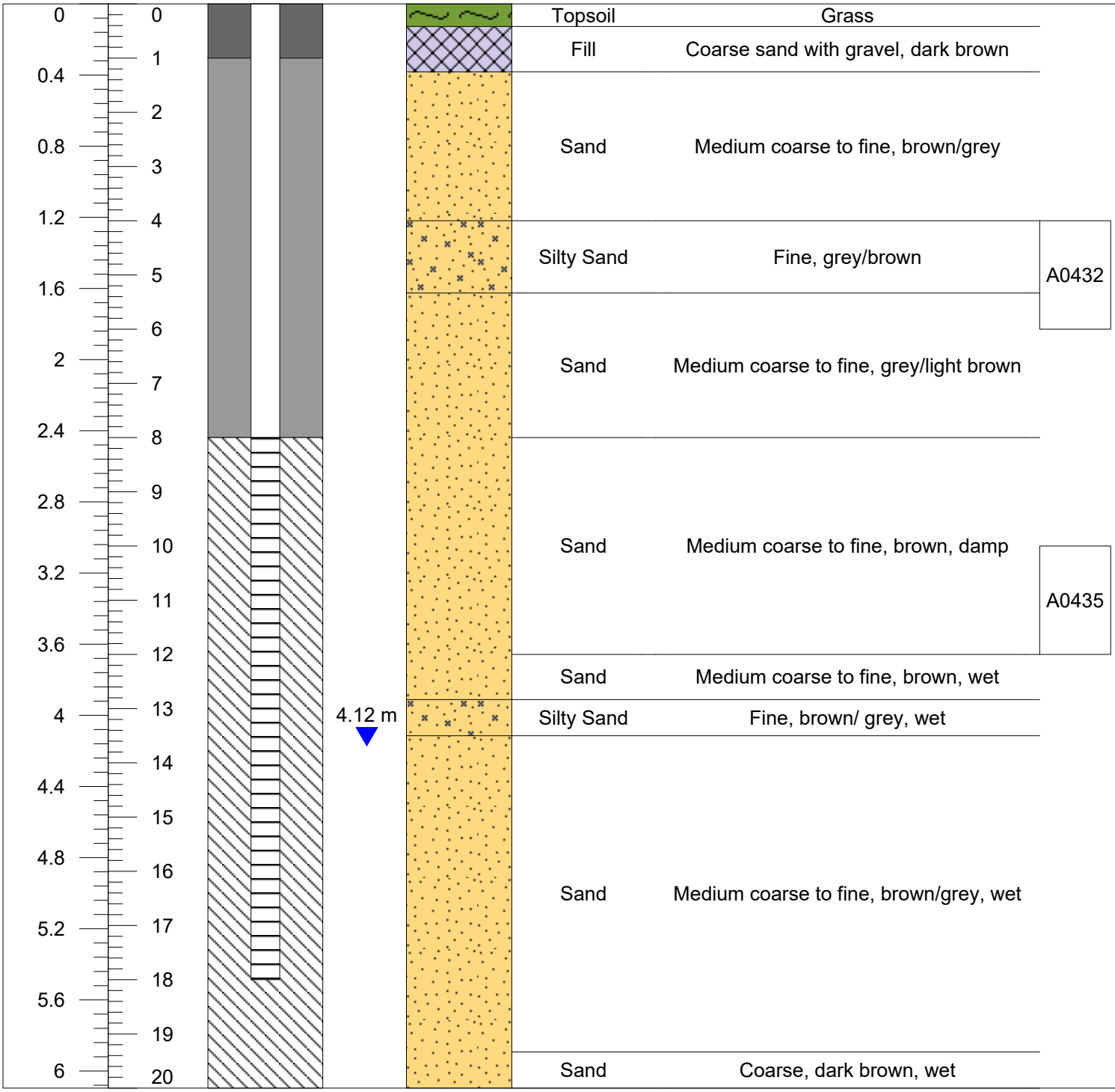
Easting: 443380.62

Project Manager: Charna Kozole

Northing: 5020303.22

Location: 1871 Merivale Road
Ottawa, ON

Elevation: 87.32



Drill Method: Direct Push

Hole Depth (m): 6.1 m

Drill Date: Nov 16/17

Technician: MG

Hole Diameter: 2"

Drilled By: Downing

1705 Argentia Road, Unit 3
Mississauga, ON, L5N 3A9
1-800-267-4797

Project No.: 10869

Log of Test Hole: BH5

Project: Merivale Road

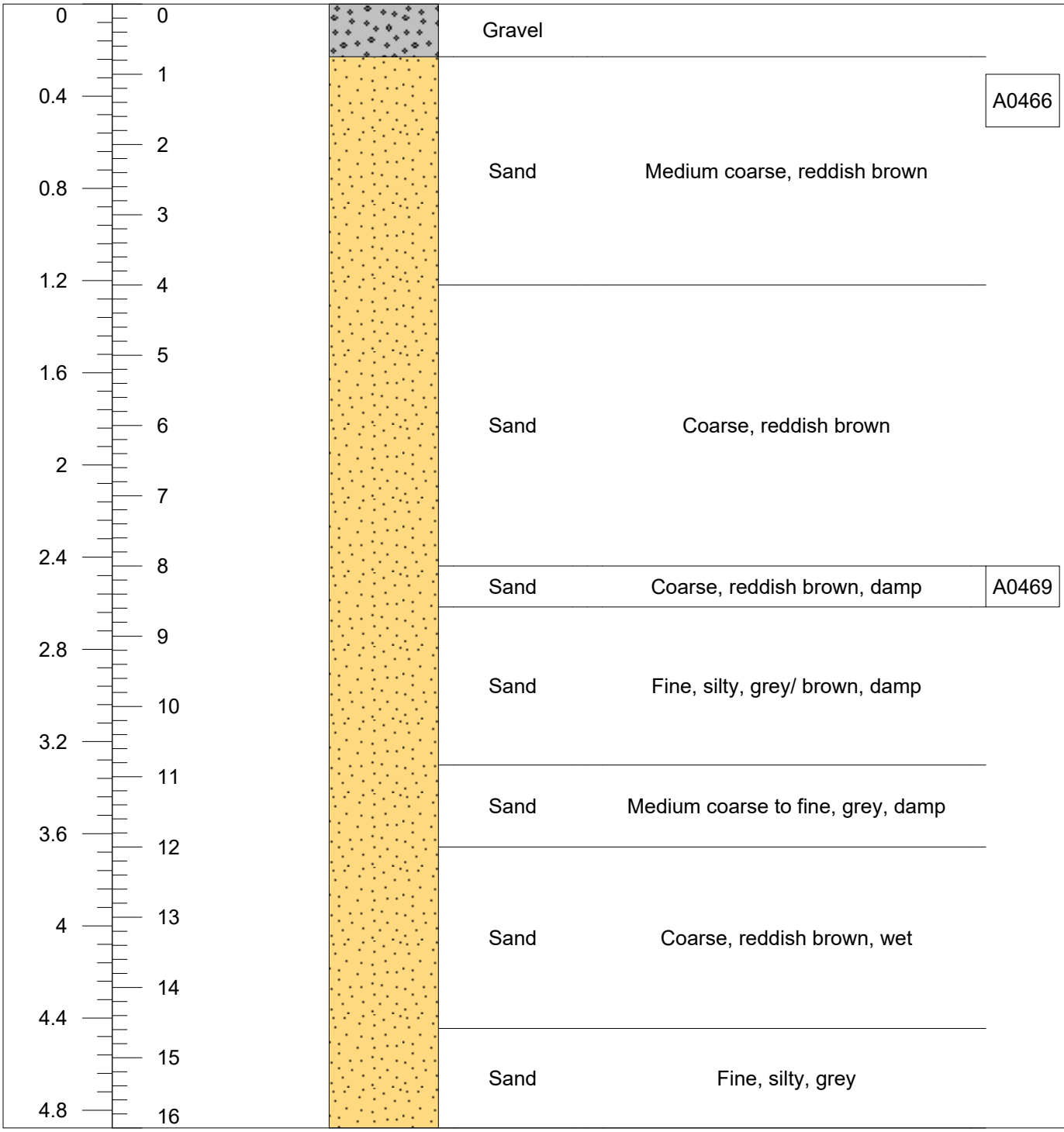
Easting: 443429.5

Project Manager: Charna Kozole

Northing: 5020338.37

Location: 1871 Merivale Road
Ottawa, ON

Elevation: 87.12



Drill Method: Direct Push

Hole Depth (m): 4.88 m

Drill Date: Nov 16/17

Technician: MG

Hole Diameter: 2"

Drilled By: Downing

1705 Argentia Road, Unit 3
Mississauga, ON, L5N 3A9
1-800-267-4797

Project No.: 10869

Log of Test Hole: MW6

Project: Merivale Road

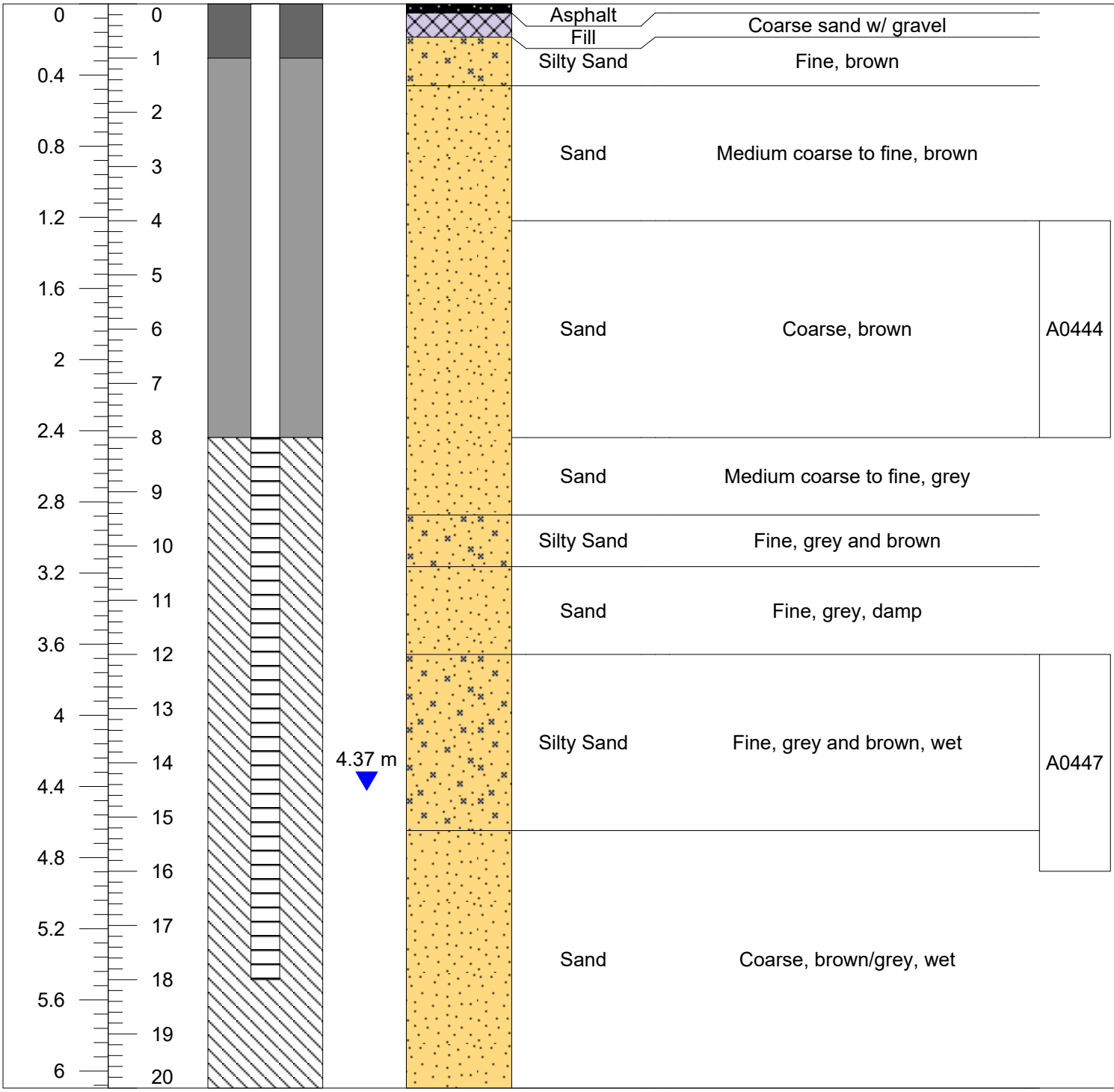
Easting: 443503.49

Project Manager: Charna Kozole

Northing: 5020380.17

Location: 1871 Merivale Road
Ottawa, ON

Elevation: 87.41



Drill Method: Direct Push

Hole Depth (m): 6.1 m

Drill Date: Nov 16/17

Technician: MG

Hole Diameter: 2"

Drilled By: Downing

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APPENDIX 3
Certificates of Analysis

Maxxam
A Bureau Veritas Group Company

Your Project #: 10869
Your C.O.C. #: 638033-01-01, C#626936-04-01

Attention:Reporting Group

AEL Environment
1705 Argentia Rd
Unit 3
Mississauga, ON
CANADA L5N 3A9

Report Date: 2017/11/24
Report #: R4874976
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7Q0135
Received: 2017/11/17, 15:30

Sample Matrix: Soil
Samples Received: 16

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	3	N/A	2017/11/23	CAM SOP-00301	EPA 8270D m
Methylnaphthalene Sum (1)	4	N/A	2017/11/24	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron (1)	7	2017/11/22	2017/11/22	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum (1)	7	N/A	2017/11/23		EPA 8260C m
Free (WAD) Cyanide (1)	7	2017/11/22	2017/11/23	CAM SOP-00457	OMOE E3015 m
Cyanide (WAD) in Leachates (1)	1	N/A	2017/11/23	CAM SOP-00457	OMOE 3015 m
Conductivity (1)	7	2017/11/23	2017/11/23	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1, 2)	7	2017/11/22	2017/11/23	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (1, 3)	3	2017/11/22	2017/11/22	CAM SOP-00316	CCME CWS m
Petroleum Hydrocarbons F2-F4 in Soil (1, 3)	4	2017/11/22	2017/11/23	CAM SOP-00316	CCME CWS m
Fluoride by ISE in Leachates (1)	1	2017/11/23	2017/11/23	CAM SOP-00449	SM 22 4500-F- C m
Mercury (TCLP Leachable) (mg/L) (1)	1	N/A	2017/11/24	CAM SOP-00453	EPA 7470A m
Strong Acid Leachable Metals by ICPMS (1)	7	2017/11/22	2017/11/23	CAM SOP-00447	EPA 6020B m
Total Metals in TCLP Leachate by ICPMS (1)	1	2017/11/23	2017/11/23	CAM SOP-00447	EPA 6020B m
Moisture (1)	9	N/A	2017/11/21	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture (1)	5	N/A	2017/11/22	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2017/11/22	2017/11/22	CAM SOP-00318	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM) (1)	6	2017/11/22	2017/11/23	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT (1)	7	2017/11/23	2017/11/23	CAM SOP-00413	EPA 9045 D m
Sieve, 75um (1)	1	N/A	2017/11/23	CAM SOP-00467	Carter 2nd ed m
Sodium Adsorption Ratio (SAR) (1)	7	N/A	2017/11/24	CAM SOP-00102	EPA 6010C
TCLP - % Solids (1)	1	2017/11/22	2017/11/23	CAM SOP-00401	EPA 1311 Update I m
TCLP - Extraction Fluid (1)	1	N/A	2017/11/23	CAM SOP-00401	EPA 1311 Update I m
TCLP - Initial and final pH (1)	1	N/A	2017/11/23	CAM SOP-00401	EPA 1311 Update I m
TCLP Zero Headspace Extraction (1)	1	2017/11/22	2017/11/23	CAM SOP-00430	EPA 1311 m
Volatile Organic Compounds and F1 PHCs (1)	7	N/A	2017/11/22	CAM SOP-00230	EPA 8260C m
VOCs in ZHE Leachates (1)	1	2017/11/23	2017/11/23	CAM SOP-00228	EPA 8260C m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted,

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Your Project #: 10869
Your C.O.C. #: 638033-01-01, C#626936-04-01

Attention:Reporting Group

AEL Environment
1705 Argentia Rd
Unit 3
Mississauga, ON
CANADA L5N 3A9

Report Date: 2017/11/24
Report #: R4874976
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7Q0135
Received: 2017/11/17, 15:30

procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Analytics Mississauga
(2) Soils are reported on a dry weight basis unless otherwise specified.
(3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		FOU263				FOU263			
Sampling Date		2017/11/15 09:14				2017/11/15 09:14			
COC Number		638033-01-01				638033-01-01			
	UNITS	A0300 MW1	RDL	MDL	QC Batch	A0300 MW1 Lab-Dup	RDL	MDL	QC Batch
Calculated Parameters									
Sodium Adsorption Ratio	N/A	1.5			5274905				
Inorganics									
Conductivity	mS/cm	0.19	0.002	0.0005	5280344				
Moisture	%	13	1.0	0.50	5278493	13	1.0	0.50	5278493
Available (CaCl2) pH	pH	6.89			5278171				
WAD Cyanide (Free)	ug/g	<0.01	0.01	0.005	5278446				
Chromium (VI)	ug/g	<0.2	0.2	0.05	5277936				
Metals									
Hot Water Ext. Boron (B)	ug/g	0.095	0.050	0.030	5278409				
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	0.10	5278201				
Acid Extractable Arsenic (As)	ug/g	<1.0	1.0	0.10	5278201				
Acid Extractable Barium (Ba)	ug/g	17	0.50	0.30	5278201				
Acid Extractable Beryllium (Be)	ug/g	<0.20	0.20	0.020	5278201				
Acid Extractable Boron (B)	ug/g	<5.0	5.0	1.0	5278201				
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	0.030	5278201				
Acid Extractable Chromium (Cr)	ug/g	7.0	1.0	0.20	5278201				
Acid Extractable Cobalt (Co)	ug/g	2.5	0.10	0.020	5278201				
Acid Extractable Copper (Cu)	ug/g	6.0	0.50	0.20	5278201				
Acid Extractable Lead (Pb)	ug/g	1.4	1.0	0.10	5278201				
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	0.10	5278201				
Acid Extractable Nickel (Ni)	ug/g	4.4	0.50	0.20	5278201				
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	0.10	5278201				
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	0.040	5278201				
Acid Extractable Thallium (Tl)	ug/g	<0.050	0.050	0.010	5278201				
Acid Extractable Uranium (U)	ug/g	0.47	0.050	0.030	5278201				
Acid Extractable Vanadium (V)	ug/g	19	5.0	0.50	5278201				
Acid Extractable Zinc (Zn)	ug/g	8.9	5.0	0.50	5278201				
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	0.030	5278201				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		FOU264		FOU265			
Sampling Date		2017/11/15 09:14		2017/11/15 10:00			
COC Number		638033-01-01		638033-01-01			
	UNITS	A0441 MW1	QC Batch	A0432 MW4	RDL	MDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	1.3	5274905	1.2			5274905
Inorganics							
Conductivity	mS/cm	0.19	5280344	0.13	0.002	0.0005	5280344
Moisture	%	12	5278493	15	1.0	0.50	5278538
Available (CaCl2) pH	pH	6.89	5278171	7.36			5278171
WAD Cyanide (Free)	ug/g	<0.01	5278446	<0.01	0.01	0.005	5278446
Chromium (VI)	ug/g	<0.2	5277936	<0.2	0.2	0.05	5277936
Metals							
Hot Water Ext. Boron (B)	ug/g	0.12	5278409	<0.050	0.050	0.030	5278409
Acid Extractable Antimony (Sb)	ug/g	<0.20	5278201	<0.20	0.20	0.10	5278201
Acid Extractable Arsenic (As)	ug/g	<1.0	5278201	<1.0	1.0	0.10	5278201
Acid Extractable Barium (Ba)	ug/g	16	5278201	26	0.50	0.30	5278201
Acid Extractable Beryllium (Be)	ug/g	<0.20	5278201	<0.20	0.20	0.020	5278201
Acid Extractable Boron (B)	ug/g	<5.0	5278201	<5.0	5.0	1.0	5278201
Acid Extractable Cadmium (Cd)	ug/g	<0.10	5278201	<0.10	0.10	0.030	5278201
Acid Extractable Chromium (Cr)	ug/g	6.1	5278201	10	1.0	0.20	5278201
Acid Extractable Cobalt (Co)	ug/g	2.4	5278201	2.3	0.10	0.020	5278201
Acid Extractable Copper (Cu)	ug/g	6.1	5278201	5.3	0.50	0.20	5278201
Acid Extractable Lead (Pb)	ug/g	1.4	5278201	1.9	1.0	0.10	5278201
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	5278201	<0.50	0.50	0.10	5278201
Acid Extractable Nickel (Ni)	ug/g	4.1	5278201	4.7	0.50	0.20	5278201
Acid Extractable Selenium (Se)	ug/g	<0.50	5278201	<0.50	0.50	0.10	5278201
Acid Extractable Silver (Ag)	ug/g	<0.20	5278201	<0.20	0.20	0.040	5278201
Acid Extractable Thallium (Tl)	ug/g	<0.050	5278201	<0.050	0.050	0.010	5278201
Acid Extractable Uranium (U)	ug/g	0.49	5278201	0.52	0.050	0.030	5278201
Acid Extractable Vanadium (V)	ug/g	16	5278201	25	5.0	0.50	5278201
Acid Extractable Zinc (Zn)	ug/g	9.8	5278201	8.2	5.0	0.50	5278201
Acid Extractable Mercury (Hg)	ug/g	<0.050	5278201	<0.050	0.050	0.030	5278201

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		FOU267				FOU267			
Sampling Date		2017/11/15 14:10				2017/11/15 14:10			
COC Number		638033-01-01				638033-01-01			
	UNITS	A0452 BH2	RDL	MDL	QC Batch	A0452 BH2 Lab-Dup	RDL	MDL	QC Batch
Calculated Parameters									
Sodium Adsorption Ratio	N/A	1.0			5274905				
Inorganics									
Conductivity	mS/cm	0.056	0.002	0.0005	5280344				
Available (CaCl2) pH	pH	7.15			5278171	7.15			5278171
WAD Cyanide (Free)	ug/g	<0.01	0.01	0.005	5278446	<0.01	0.01	0.005	5278446
Chromium (VI)	ug/g	0.3	0.2	0.05	5277936	0.3	0.2	0.05	5277936
Metals									
Hot Water Ext. Boron (B)	ug/g	0.053	0.050	0.030	5278409				
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	0.10	5278201				
Acid Extractable Arsenic (As)	ug/g	<1.0	1.0	0.10	5278201				
Acid Extractable Barium (Ba)	ug/g	18	0.50	0.30	5278201				
Acid Extractable Beryllium (Be)	ug/g	<0.20	0.20	0.020	5278201				
Acid Extractable Boron (B)	ug/g	<5.0	5.0	1.0	5278201				
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	0.030	5278201				
Acid Extractable Chromium (Cr)	ug/g	6.5	1.0	0.20	5278201				
Acid Extractable Cobalt (Co)	ug/g	1.8	0.10	0.020	5278201				
Acid Extractable Copper (Cu)	ug/g	3.7	0.50	0.20	5278201				
Acid Extractable Lead (Pb)	ug/g	1.4	1.0	0.10	5278201				
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	0.10	5278201				
Acid Extractable Nickel (Ni)	ug/g	3.9	0.50	0.20	5278201				
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	0.10	5278201				
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	0.040	5278201				
Acid Extractable Thallium (Tl)	ug/g	<0.050	0.050	0.010	5278201				
Acid Extractable Uranium (U)	ug/g	0.39	0.050	0.030	5278201				
Acid Extractable Vanadium (V)	ug/g	12	5.0	0.50	5278201				
Acid Extractable Zinc (Zn)	ug/g	7.1	5.0	0.50	5278201				
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	0.030	5278201				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		FOU272				FOU273	FOU275			
Sampling Date		2017/11/16 13:15				2017/11/16 15:15	2017/11/16 12:33			
COC Number		C#626936-04-01				C#626936-04-01	C#626936-04-01			
	UNITS	A0459 BH3	RDL	MDL	QC Batch	A0466 BH5	A0444	RDL	MDL	QC Batch
Calculated Parameters										
Sodium Adsorption Ratio	N/A	2.7			5274905	0.43	0.75			5274905
Inorganics										
Conductivity	mS/cm	0.11	0.002	0.0005	5280344	0.048	0.020	0.002	0.0005	5280344
Moisture	%					6.1	8.6	1.0	0.50	5278493
Available (CaCl2) pH	pH	7.09			5278171	6.99	6.82			5278171
WAD Cyanide (Free)	ug/g	<0.01	0.01	0.005	5278446	<0.01	<0.01	0.01	0.005	5278446
Chromium (VI)	ug/g	0.4	0.2	0.05	5277936	<0.2	<0.2	0.2	0.05	5277936
Metals										
Hot Water Ext. Boron (B)	ug/g	0.060	0.050	0.030	5278409	0.066	<0.050	0.050	0.030	5278409
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	0.10	5278201	<0.20	0.28	0.20	0.10	5278201
Acid Extractable Arsenic (As)	ug/g	<1.0	1.0	0.10	5278201	<1.0	<1.0	1.0	0.10	5278201
Acid Extractable Barium (Ba)	ug/g	39	0.50	0.30	5278201	36	44	0.50	0.30	5278201
Acid Extractable Beryllium (Be)	ug/g	0.23	0.20	0.020	5278201	0.29	0.26	0.20	0.020	5278201
Acid Extractable Boron (B)	ug/g	<5.0	5.0	1.0	5278201	<5.0	<5.0	5.0	1.0	5278201
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	0.030	5278201	<0.10	<0.10	0.10	0.030	5278201
Acid Extractable Chromium (Cr)	ug/g	14	1.0	0.20	5278201	13	13	1.0	0.20	5278201
Acid Extractable Cobalt (Co)	ug/g	4.4	0.10	0.020	5278201	3.8	4.0	0.10	0.020	5278201
Acid Extractable Copper (Cu)	ug/g	9.2	0.50	0.20	5278201	4.7	7.1	0.50	0.20	5278201
Acid Extractable Lead (Pb)	ug/g	2.4	1.0	0.10	5278201	2.8	3.7	1.0	0.10	5278201
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	0.10	5278201	<0.50	<0.50	0.50	0.10	5278201
Acid Extractable Nickel (Ni)	ug/g	7.1	0.50	0.20	5278201	8.1	8.7	0.50	0.20	5278201
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	0.10	5278201	<0.50	<0.50	0.50	0.10	5278201
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	0.040	5278201	<0.20	<0.20	0.20	0.040	5278201
Acid Extractable Thallium (Tl)	ug/g	0.062	0.050	0.010	5278201	0.067	0.16	0.050	0.010	5278201
Acid Extractable Uranium (U)	ug/g	0.73	0.050	0.030	5278201	0.49	0.46	0.050	0.030	5278201
Acid Extractable Vanadium (V)	ug/g	32	5.0	0.50	5278201	27	19	5.0	0.50	5278201
Acid Extractable Zinc (Zn)	ug/g	12	5.0	0.50	5278201	20	32	5.0	0.50	5278201
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	0.030	5278201	<0.050	<0.050	0.050	0.030	5278201

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

O.REG 153 PAHS (SOIL)

Maxxam ID		FOU261	FOU262	FOU266		FOU267			
Sampling Date		2017/11/15 09:14	2017/11/15 09:14	2017/11/15 10:05		2017/11/15 14:10			
COC Number		638033-01-01	638033-01-01	638033-01-01		638033-01-01			
	UNITS	A0299 MW1	A0442 MW1	A0435 MW4	QC Batch	A0452 BH2	RDL	MDL	QC Batch
Inorganics									
Moisture	%	19	17	14	5276173	7.6	1.0	0.50	5276173
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	<0.0071	5274628	<0.0071	0.0071	N/A	5274628
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0020	5279476
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0010	5279476
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0010	5279476
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0020	5279476
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0010	5279476
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0020	5279476
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0040	5279476
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0020	5279476
Chrysene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0020	5279476
Dibenz(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0040	5279476
Fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0010	5279476
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0010	5279476
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0040	5279476
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0010	5279476
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0010	5279476
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0010	5279476
Phenanthrene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0010	5279476
Pyrene	ug/g	<0.0050	<0.0050	<0.0050	5280155	<0.0050	0.0050	0.0010	5279476
Surrogate Recovery (%)									
D10-Anthracene	%	93	96	94	5280155	95			5279476
D14-Terphenyl (FS)	%	83	102	97	5280155	100			5279476
D8-Acenaphthylene	%	87	95	92	5280155	86			5279476

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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O.REG 153 PAHS (SOIL)

Maxxam ID		FOU267				FOU272			
Sampling Date		2017/11/15 14:10				2017/11/16 13:15			
COC Number		638033-01-01				C#626936-04-01			
	UNITS	A0452 BH2 Lab-Dup	RDL	MDL	QC Batch	A0459 BH3	RDL	MDL	QC Batch
Inorganics									
Moisture	%					18	1.0	0.50	5276173
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g					<0.0071	0.0071	N/A	5274628
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	<0.0050	0.0050	0.0020	5279476	<0.0050	0.0050	0.0020	5279476
Acenaphthylene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5279476
Anthracene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5279476
Benzo(a)anthracene	ug/g	<0.0050	0.0050	0.0020	5279476	<0.0050	0.0050	0.0020	5279476
Benzo(a)pyrene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5279476
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0050	0.0020	5279476	<0.0050	0.0050	0.0020	5279476
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	0.0040	5279476	<0.0050	0.0050	0.0040	5279476
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	0.0020	5279476	<0.0050	0.0050	0.0020	5279476
Chrysene	ug/g	<0.0050	0.0050	0.0020	5279476	<0.0050	0.0050	0.0020	5279476
Dibenz(a,h)anthracene	ug/g	<0.0050	0.0050	0.0040	5279476	<0.0050	0.0050	0.0040	5279476
Fluoranthene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5279476
Fluorene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5279476
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	0.0040	5279476	<0.0050	0.0050	0.0040	5279476
1-Methylnaphthalene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5279476
2-Methylnaphthalene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5279476
Naphthalene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5279476
Phenanthrene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5279476
Pyrene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5279476
Surrogate Recovery (%)									
D10-Anthracene	%	93			5279476	96			5279476
D14-Terphenyl (FS)	%	105			5279476	88			5279476
D8-Acenaphthylene	%	84			5279476	89			5279476

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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O.REG 153 PAHS (SOIL)

Maxxam ID		FOU273				FOU276			
Sampling Date		2017/11/16 15:15				2017/11/16 12:40			
COC Number		C#626936-04-01				C#626936-04-01			
	UNITS	A0466 BH5	RDL	MDL	QC Batch	A0447	RDL	MDL	QC Batch
Inorganics									
Moisture	%					16	1.0	0.50	5276173
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	N/A	5274628	<0.0071	0.0071	N/A	5274628
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	<0.0050	0.0050	0.0020	5279476	<0.0050	0.0050	0.0020	5280155
Acenaphthylene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5280155
Anthracene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5280155
Benzo(a)anthracene	ug/g	<0.0050	0.0050	0.0020	5279476	<0.0050	0.0050	0.0020	5280155
Benzo(a)pyrene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5280155
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0050	0.0020	5279476	<0.0050	0.0050	0.0020	5280155
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	0.0040	5279476	<0.0050	0.0050	0.0040	5280155
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	0.0020	5279476	<0.0050	0.0050	0.0020	5280155
Chrysene	ug/g	<0.0050	0.0050	0.0020	5279476	<0.0050	0.0050	0.0020	5280155
Dibenz(a,h)anthracene	ug/g	<0.0050	0.0050	0.0040	5279476	<0.0050	0.0050	0.0040	5280155
Fluoranthene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5280155
Fluorene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5280155
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	0.0040	5279476	<0.0050	0.0050	0.0040	5280155
1-Methylnaphthalene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5280155
2-Methylnaphthalene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5280155
Naphthalene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5280155
Phenanthrene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5280155
Pyrene	ug/g	<0.0050	0.0050	0.0010	5279476	<0.0050	0.0050	0.0010	5280155
Surrogate Recovery (%)									
D10-Anthracene	%	97			5279476	92			5280155
D14-Terphenyl (FS)	%	95			5279476	99			5280155
D8-Acenaphthylene	%	85			5279476	93			5280155

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QC Batch = Quality Control Batch
N/A = Not Applicable

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		FOU261	FOU262	FOU266			
Sampling Date		2017/11/15 09:14	2017/11/15 09:14	2017/11/15 10:05			
COC Number		638033-01-01	638033-01-01	638033-01-01			
	UNITS	A0299 MW1	A0442 MW1	A0435 MW4	RDL	MDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	<0.050	0.050	0.010	5273968
Volatile Organics							
Acetone (2-Propanone)	ug/g	<0.50	<0.50	<0.50	0.50	0.50	5275626
Benzene	ug/g	<0.020	<0.020	<0.020	0.020	0.020	5275626
Bromodichloromethane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Bromoform	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Bromomethane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Carbon Tetrachloride	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Chlorobenzene	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Chloroform	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Dibromochloromethane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
1,2-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
1,3-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
1,4-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
1,1-Dichloroethane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
1,2-Dichloroethane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
1,1-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
cis-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
trans-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
1,2-Dichloropropane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	<0.030	0.030	0.030	5275626
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	<0.040	0.040	0.040	5275626
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	0.020	0.020	5275626
Ethylene Dibromide	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Hexane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Methylene Chloride(Dichloromethane)	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	<0.50	<0.50	0.50	0.50	5275626
Methyl Isobutyl Ketone	ug/g	<0.50	<0.50	<0.50	0.50	0.50	5275626
Methyl t-butyl ether (MTBE)	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Styrene	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
1,1,1,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
1,1,2,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Tetrachloroethylene	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		FOU261	FOU262	FOU266			
Sampling Date		2017/11/15 09:14	2017/11/15 09:14	2017/11/15 10:05			
COC Number		638033-01-01	638033-01-01	638033-01-01			
	UNITS	A0299 MW1	A0442 MW1	A0435 MW4	RDL	MDL	QC Batch
Toluene	ug/g	<0.020	<0.020	<0.020	0.020	0.020	5275626
1,1,1-Trichloroethane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
1,1,2-Trichloroethane	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Trichloroethylene	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	<0.050	<0.050	0.050	0.050	5275626
Vinyl Chloride	ug/g	<0.020	<0.020	<0.020	0.020	0.020	5275626
p+m-Xylene	ug/g	<0.020	<0.020	<0.020	0.020	0.020	5275626
o-Xylene	ug/g	<0.020	<0.020	<0.020	0.020	0.020	5275626
Total Xylenes	ug/g	<0.020	<0.020	<0.020	0.020	0.020	5275626
F1 (C6-C10)	ug/g	<10	<10	<10	10	N/A	5275626
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	N/A	5275626
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	5.0	5280147
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	50	5.0	5280147
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	<50	50	10	5280147
Reached Baseline at C50	ug/g	Yes	Yes	Yes			5280147
Surrogate Recovery (%)							
o-Terphenyl	%	95	95	94			5280147
4-Bromofluorobenzene	%	100	100	104			5275626
D10-o-Xylene	%	104	104	101			5275626
D4-1,2-Dichloroethane	%	90	91	90			5275626
D8-Toluene	%	93	94	95			5275626

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N/A = Not Applicable

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		FOU268		FOU271	FOU274			
Sampling Date		2017/11/15 14:19		2017/11/16 13:20	2017/11/16 15:25			
COC Number		638033-01-01		C#626936-04-01	C#626936-04-01			
	UNITS	A0456 BH2	QC Batch	A0462 BH3	A0469 BH5	RDL	MDL	QC Batch
Inorganics								
Moisture	%	16	5276173	19	18	1.0	0.50	5276173
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	5273968	<0.050	<0.050	0.050	0.010	5275410
Volatile Organics								
Acetone (2-Propanone)	ug/g	<0.50	5275626	<0.50	<0.50	0.50	0.50	5275626
Benzene	ug/g	<0.020	5275626	<0.020	<0.020	0.020	0.020	5275626
Bromodichloromethane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Bromoform	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Bromomethane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Carbon Tetrachloride	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Chlorobenzene	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Chloroform	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Dibromochloromethane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
1,2-Dichlorobenzene	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
1,3-Dichlorobenzene	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
1,4-Dichlorobenzene	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
1,1-Dichloroethane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
1,2-Dichloroethane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
1,1-Dichloroethylene	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
cis-1,2-Dichloroethylene	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
trans-1,2-Dichloroethylene	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
1,2-Dichloropropane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
cis-1,3-Dichloropropene	ug/g	<0.030	5275626	<0.030	<0.030	0.030	0.030	5275626
trans-1,3-Dichloropropene	ug/g	<0.040	5275626	<0.040	<0.040	0.040	0.040	5275626
Ethylbenzene	ug/g	<0.020	5275626	<0.020	<0.020	0.020	0.020	5275626
Ethylene Dibromide	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Hexane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Methylene Chloride(Dichloromethane)	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	5275626	<0.50	<0.50	0.50	0.50	5275626
Methyl Isobutyl Ketone	ug/g	<0.50	5275626	<0.50	<0.50	0.50	0.50	5275626
Methyl t-butyl ether (MTBE)	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Styrene	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
1,1,1,2-Tetrachloroethane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
1,1,2,2-Tetrachloroethane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		FOU268		FOU271	FOU274			
Sampling Date		2017/11/15 14:19		2017/11/16 13:20	2017/11/16 15:25			
COC Number		638033-01-01		C#626936-04-01	C#626936-04-01			
	UNITS	A0456 BH2	QC Batch	A0462 BH3	A0469 BH5	RDL	MDL	QC Batch
Tetrachloroethylene	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Toluene	ug/g	<0.020	5275626	<0.020	<0.020	0.020	0.020	5275626
1,1,1-Trichloroethane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
1,1,2-Trichloroethane	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Trichloroethylene	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	5275626	<0.050	<0.050	0.050	0.050	5275626
Vinyl Chloride	ug/g	<0.020	5275626	<0.020	<0.020	0.020	0.020	5275626
p+m-Xylene	ug/g	<0.020	5275626	<0.020	<0.020	0.020	0.020	5275626
o-Xylene	ug/g	<0.020	5275626	<0.020	<0.020	0.020	0.020	5275626
Total Xylenes	ug/g	<0.020	5275626	<0.020	<0.020	0.020	0.020	5275626
F1 (C6-C10)	ug/g	<10	5275626	<10	<10	10	N/A	5275626
F1 (C6-C10) - BTEX	ug/g	<10	5275626	<10	<10	10	N/A	5275626
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	5278151	<10	<10	10	5.0	5278151
F3 (C16-C34 Hydrocarbons)	ug/g	<50	5278151	<50	<50	50	5.0	5278151
F4 (C34-C50 Hydrocarbons)	ug/g	<50	5278151	<50	<50	50	10	5278151
Reached Baseline at C50	ug/g	Yes	5278151	Yes	Yes			5278151
Surrogate Recovery (%)								
o-Terphenyl	%	101	5278151	95	95			5278151
4-Bromofluorobenzene	%	101	5275626	101	103			5275626
D10-o-Xylene	%	86	5275626	104	98			5275626
D4-1,2-Dichloroethane	%	93	5275626	90	91			5275626
D8-Toluene	%	97	5275626	94	95			5275626

RDL = Reportable Detection Limit
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N/A = Not Applicable

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		FOU276			
Sampling Date		2017/11/16 12:40			
COC Number		C#626936-04-01			
	UNITS	A0447	RDL	MDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	0.010	5275410
Volatile Organics					
Acetone (2-Propanone)	ug/g	<0.50	0.50	0.50	5275626
Benzene	ug/g	<0.020	0.020	0.020	5275626
Bromodichloromethane	ug/g	<0.050	0.050	0.050	5275626
Bromoform	ug/g	<0.050	0.050	0.050	5275626
Bromomethane	ug/g	<0.050	0.050	0.050	5275626
Carbon Tetrachloride	ug/g	<0.050	0.050	0.050	5275626
Chlorobenzene	ug/g	<0.050	0.050	0.050	5275626
Chloroform	ug/g	<0.050	0.050	0.050	5275626
Dibromochloromethane	ug/g	<0.050	0.050	0.050	5275626
1,2-Dichlorobenzene	ug/g	<0.050	0.050	0.050	5275626
1,3-Dichlorobenzene	ug/g	<0.050	0.050	0.050	5275626
1,4-Dichlorobenzene	ug/g	<0.050	0.050	0.050	5275626
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	0.050	0.050	5275626
1,1-Dichloroethane	ug/g	<0.050	0.050	0.050	5275626
1,2-Dichloroethane	ug/g	<0.050	0.050	0.050	5275626
1,1-Dichloroethylene	ug/g	<0.050	0.050	0.050	5275626
cis-1,2-Dichloroethylene	ug/g	<0.050	0.050	0.050	5275626
trans-1,2-Dichloroethylene	ug/g	<0.050	0.050	0.050	5275626
1,2-Dichloropropane	ug/g	<0.050	0.050	0.050	5275626
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	0.030	5275626
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	0.040	5275626
Ethylbenzene	ug/g	<0.020	0.020	0.020	5275626
Ethylene Dibromide	ug/g	<0.050	0.050	0.050	5275626
Hexane	ug/g	<0.050	0.050	0.050	5275626
Methylene Chloride(Dichloromethane)	ug/g	<0.050	0.050	0.050	5275626
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	0.50	0.50	5275626
Methyl Isobutyl Ketone	ug/g	<0.50	0.50	0.50	5275626
Methyl t-butyl ether (MTBE)	ug/g	<0.050	0.050	0.050	5275626
Styrene	ug/g	<0.050	0.050	0.050	5275626
1,1,1,2-Tetrachloroethane	ug/g	<0.050	0.050	0.050	5275626
1,1,2,2-Tetrachloroethane	ug/g	<0.050	0.050	0.050	5275626
Tetrachloroethylene	ug/g	<0.050	0.050	0.050	5275626

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Maxxam ID		FOU276			
Sampling Date		2017/11/16 12:40			
COC Number		C#626936-04-01			
	UNITS	A0447	RDL	MDL	QC Batch
Toluene	ug/g	<0.020	0.020	0.020	5275626
1,1,1-Trichloroethane	ug/g	<0.050	0.050	0.050	5275626
1,1,2-Trichloroethane	ug/g	<0.050	0.050	0.050	5275626
Trichloroethylene	ug/g	<0.050	0.050	0.050	5275626
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	0.050	0.050	5275626
Vinyl Chloride	ug/g	<0.020	0.020	0.020	5275626
p+m-Xylene	ug/g	<0.020	0.020	0.020	5275626
o-Xylene	ug/g	<0.020	0.020	0.020	5275626
Total Xylenes	ug/g	<0.020	0.020	0.020	5275626
F1 (C6-C10)	ug/g	<10	10	N/A	5275626
F1 (C6-C10) - BTEX	ug/g	<10	10	N/A	5275626
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	5.0	5280147
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	5.0	5280147
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	10	5280147
Reached Baseline at C50	ug/g	Yes			5280147
Surrogate Recovery (%)					
o-Terphenyl	%	94			5280147
4-Bromofluorobenzene	%	103			5275626
D10-o-Xylene	%	97			5275626
D4-1,2-Dichloroethane	%	92			5275626
D8-Toluene	%	94			5275626

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

TERRAPURE TCLP MINIMUM PACKAGE (SOIL)

Maxxam ID		FOU269			
Sampling Date		2017/11/15			
COC Number		638033-01-01			
	UNITS	A0522 TCLP	RDL	MDL	QC Batch
Inorganics					
Final pH	pH	4.92			5279441
Leachable Fluoride (F-)	mg/L	0.12	0.10	0.020	5280894
Initial pH	pH	7.71			5279441
TCLP - % Solids	%	100	0.2	N/A	5279435
TCLP Extraction Fluid	N/A	FLUID 1			5279440
Leachable WAD Cyanide (Free)	mg/L	<0.010	0.010	0.0050	5280893
Metals					
Leachable Mercury (Hg)	mg/L	<0.0010	0.0010	0.00010	5280883
Leachable Arsenic (As)	mg/L	<0.2	0.2	0.01	5280861
Leachable Barium (Ba)	mg/L	0.3	0.2	0.01	5280861
Leachable Boron (B)	mg/L	0.2	0.1	0.02	5280861
Leachable Cadmium (Cd)	mg/L	<0.05	0.05	0.0007	5280861
Leachable Chromium (Cr)	mg/L	<0.1	0.1	0.01	5280861
Leachable Lead (Pb)	mg/L	<0.1	0.1	0.001	5280861
Leachable Selenium (Se)	mg/L	<0.1	0.1	0.01	5280861
Leachable Silver (Ag)	mg/L	<0.01	0.01	0.001	5280861

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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O.REG 558 TCLP VOLATILE ORGANICS HS (SOIL)

Maxxam ID		FOU269			
Sampling Date		2017/11/15			
COC Number		638033-01-01			
	UNITS	A0522 TCLP	RDL	MDL	QC Batch
Charge/Prep Analysis					
Amount Extracted (Wet Weight) (g)	N/A	23	N/A	N/A	5278418
Volatile Organics					
Leachable Benzene	mg/L	<0.020	0.020	0.0020	5280479
Leachable Carbon Tetrachloride	mg/L	<0.020	0.020	0.0020	5280479
Leachable Chlorobenzene	mg/L	<0.020	0.020	0.0020	5280479
Leachable Chloroform	mg/L	<0.020	0.020	0.0020	5280479
Leachable 1,2-Dichlorobenzene	mg/L	<0.050	0.050	0.0040	5280479
Leachable 1,4-Dichlorobenzene	mg/L	<0.050	0.050	0.0040	5280479
Leachable 1,2-Dichloroethane	mg/L	<0.050	0.050	0.0040	5280479
Leachable 1,1-Dichloroethylene	mg/L	<0.020	0.020	0.0020	5280479
Leachable Methylene Chloride(Dichloromethane)	mg/L	<0.20	0.20	0.010	5280479
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	<1.0	1.0	1.0	5280479
Leachable Tetrachloroethylene	mg/L	<0.020	0.020	0.0020	5280479
Leachable Trichloroethylene	mg/L	<0.020	0.020	0.0020	5280479
Leachable Vinyl Chloride	mg/L	<0.020	0.020	0.0040	5280479
Surrogate Recovery (%)					
Leachable 4-Bromofluorobenzene	%	78			5280479
Leachable D4-1,2-Dichloroethane	%	104			5280479
Leachable D8-Toluene	%	90			5280479

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FOU270			
Sampling Date		2017/11/15			
COC Number		638033-01-01			
	UNITS	A0565	RDL	MDL	QC Batch
Miscellaneous Parameters					
Grain Size	%	COARSE	N/A	N/A	5279152
Sieve - #200 (<0.075mm)	%	41	1	N/A	5279152
Sieve - #200 (>0.075mm)	%	59	1	N/A	5279152

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

TEST SUMMARY

Maxxam ID: FOU261
Sample ID: A0299 MW1
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274628	N/A	2017/11/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	5273968	N/A	2017/11/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5280147	2017/11/22	2017/11/23	Zhiyue (Frank) Zhu
Moisture	BAL	5276173	N/A	2017/11/21	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5280155	2017/11/22	2017/11/23	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5275626	N/A	2017/11/22	Yang (Philip) Yu

Maxxam ID: FOU262
Sample ID: A0442 MW1
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274628	N/A	2017/11/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	5273968	N/A	2017/11/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5280147	2017/11/22	2017/11/23	Zhiyue (Frank) Zhu
Moisture	BAL	5276173	N/A	2017/11/21	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5280155	2017/11/22	2017/11/23	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5275626	N/A	2017/11/22	Yang (Philip) Yu

Maxxam ID: FOU263
Sample ID: A0300 MW1
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	5278409	2017/11/22	2017/11/22	Suban Kanapathippllai
Free (WAD) Cyanide	TECH	5278446	2017/11/22	2017/11/23	Louise Harding
Conductivity	AT	5280344	2017/11/23	2017/11/23	Neil Dassanayake
Hexavalent Chromium in Soil by IC	IC/SPEC	5277936	2017/11/22	2017/11/23	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	5278201	2017/11/22	2017/11/23	Daniel Teclu
Moisture	BAL	5278493	N/A	2017/11/22	Chun Yan
pH CaCl2 EXTRACT	AT	5278171	2017/11/23	2017/11/23	Tahir Anwar
Sodium Adsorption Ratio (SAR)	CALC/MET	5274905	N/A	2017/11/24	Automated Statchk

Maxxam ID: FOU263 Dup
Sample ID: A0300 MW1
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5278493	N/A	2017/11/22	Chun Yan

Maxxam ID: FOU264
Sample ID: A0441 MW1
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	5278409	2017/11/22	2017/11/22	Suban Kanapathippllai

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

TEST SUMMARY

Maxxam ID: FOU264
Sample ID: A0441 MW1
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	5278446	2017/11/22	2017/11/23	Louise Harding
Conductivity	AT	5280344	2017/11/23	2017/11/23	Neil Dassanayake
Hexavalent Chromium in Soil by IC	IC/SPEC	5277936	2017/11/22	2017/11/23	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	5278201	2017/11/22	2017/11/23	Daniel Teclu
Moisture	BAL	5278493	N/A	2017/11/22	Chun Yan
pH CaCl2 EXTRACT	AT	5278171	2017/11/23	2017/11/23	Tahir Anwar
Sodium Adsorption Ratio (SAR)	CALC/MET	5274905	N/A	2017/11/24	Automated Statchk

Maxxam ID: FOU265
Sample ID: A0432 MW4
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	5278409	2017/11/22	2017/11/22	Suban Kanapathippllai
Free (WAD) Cyanide	TECH	5278446	2017/11/22	2017/11/23	Louise Harding
Conductivity	AT	5280344	2017/11/23	2017/11/23	Neil Dassanayake
Hexavalent Chromium in Soil by IC	IC/SPEC	5277936	2017/11/22	2017/11/23	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	5278201	2017/11/22	2017/11/23	Daniel Teclu
Moisture	BAL	5278538	N/A	2017/11/22	Min Yang
pH CaCl2 EXTRACT	AT	5278171	2017/11/23	2017/11/23	Tahir Anwar
Sodium Adsorption Ratio (SAR)	CALC/MET	5274905	N/A	2017/11/24	Automated Statchk

Maxxam ID: FOU266
Sample ID: A0435 MW4
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274628	N/A	2017/11/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	5273968	N/A	2017/11/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5280147	2017/11/22	2017/11/23	Zhiyue (Frank) Zhu
Moisture	BAL	5276173	N/A	2017/11/21	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5280155	2017/11/22	2017/11/23	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5275626	N/A	2017/11/22	Yang (Philip) Yu

Maxxam ID: FOU267
Sample ID: A0452 BH2
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274628	N/A	2017/11/23	Automated Statchk
Hot Water Extractable Boron	ICP	5278409	2017/11/22	2017/11/22	Suban Kanapathippllai
Free (WAD) Cyanide	TECH	5278446	2017/11/22	2017/11/23	Louise Harding
Conductivity	AT	5280344	2017/11/23	2017/11/23	Neil Dassanayake
Hexavalent Chromium in Soil by IC	IC/SPEC	5277936	2017/11/22	2017/11/23	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	5278201	2017/11/22	2017/11/23	Daniel Teclu
Moisture	BAL	5276173	N/A	2017/11/21	Min Yang

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Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

TEST SUMMARY

Maxxam ID: FOU267
Sample ID: A0452 BH2
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5279476	2017/11/22	2017/11/22	Mitesh Raj
pH CaCl2 EXTRACT	AT	5278171	2017/11/23	2017/11/23	Tahir Anwar
Sodium Adsorption Ratio (SAR)	CALC/MET	5274905	N/A	2017/11/24	Automated Statchk

Maxxam ID: FOU267 Dup
Sample ID: A0452 BH2
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	5278446	2017/11/22	2017/11/23	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	5277936	2017/11/22	2017/11/23	Sally Coughlin
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5279476	2017/11/22	2017/11/22	Mitesh Raj
pH CaCl2 EXTRACT	AT	5278171	2017/11/23	2017/11/23	Tahir Anwar

Maxxam ID: FOU268
Sample ID: A0456 BH2
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	5273968	N/A	2017/11/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5278151	2017/11/22	2017/11/22	Jeevaraj Jeevaratrnam
Moisture	BAL	5276173	N/A	2017/11/21	Min Yang
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5275626	N/A	2017/11/22	Yang (Philip) Yu

Maxxam ID: FOU269
Sample ID: A0522 TCLP
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Cyanide (WAD) in Leachates	SKAL/CN	5280893	N/A	2017/11/23	Xuanhong Qiu
Fluoride by ISE in Leachates	ISE	5280894	2017/11/23	2017/11/23	Surinder Rai
Mercury (TCLP Leachable) (mg/L)	CV/AA	5280883	N/A	2017/11/24	Ron Morrison
Total Metals in TCLP Leachate by ICPMS	ICP1/MS	5280861	2017/11/23	2017/11/23	Arefa Dabhad
TCLP - % Solids	BAL	5279435	2017/11/22	2017/11/23	Jian (Ken) Wang
TCLP - Extraction Fluid		5279440	N/A	2017/11/23	Jian (Ken) Wang
TCLP - Initial and final pH	PH	5279441	N/A	2017/11/23	Jian (Ken) Wang
TCLP Zero Headspace Extraction		5278418	2017/11/22	2017/11/23	Walt Wang
VOCs in ZHE Leachates	GC/MS	5280479	2017/11/23	2017/11/23	Blair Gannon

Maxxam ID: FOU270
Sample ID: A0565
Matrix: Soil

Collected: 2017/11/15
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sieve, 75um	SIEV	5279152	N/A	2017/11/23	Min Yang

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

TEST SUMMARY

Maxxam ID: FOU271
Sample ID: A0462 BH3
Matrix: Soil

Collected: 2017/11/16
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	5275410	N/A	2017/11/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5278151	2017/11/22	2017/11/22	Jeevaraj Jeevaratrnam
Moisture	BAL	5276173	N/A	2017/11/21	Min Yang
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5275626	N/A	2017/11/22	Yang (Philip) Yu

Maxxam ID: FOU272
Sample ID: A0459 BH3
Matrix: Soil

Collected: 2017/11/16
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274628	N/A	2017/11/23	Automated Statchk
Hot Water Extractable Boron	ICP	5278409	2017/11/22	2017/11/22	Suban Kanapathippllai
Free (WAD) Cyanide	TECH	5278446	2017/11/22	2017/11/23	Louise Harding
Conductivity	AT	5280344	2017/11/23	2017/11/23	Neil Dassanayake
Hexavalent Chromium in Soil by IC	IC/SPEC	5277936	2017/11/22	2017/11/23	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	5278201	2017/11/22	2017/11/23	Daniel Teclu
Moisture	BAL	5276173	N/A	2017/11/21	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5279476	2017/11/22	2017/11/23	Mitesh Raj
pH CaCl2 EXTRACT	AT	5278171	2017/11/23	2017/11/23	Tahir Anwar
Sodium Adsorption Ratio (SAR)	CALC/MET	5274905	N/A	2017/11/24	Automated Statchk

Maxxam ID: FOU273
Sample ID: A0466 BH5
Matrix: Soil

Collected: 2017/11/16
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274628	N/A	2017/11/23	Automated Statchk
Hot Water Extractable Boron	ICP	5278409	2017/11/22	2017/11/22	Suban Kanapathippllai
Free (WAD) Cyanide	TECH	5278446	2017/11/22	2017/11/23	Louise Harding
Conductivity	AT	5280344	2017/11/23	2017/11/23	Neil Dassanayake
Hexavalent Chromium in Soil by IC	IC/SPEC	5277936	2017/11/22	2017/11/23	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	5278201	2017/11/22	2017/11/23	Daniel Teclu
Moisture	BAL	5278493	N/A	2017/11/22	Chun Yan
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5279476	2017/11/22	2017/11/23	Mitesh Raj
pH CaCl2 EXTRACT	AT	5278171	2017/11/23	2017/11/23	Tahir Anwar
Sodium Adsorption Ratio (SAR)	CALC/MET	5274905	N/A	2017/11/24	Automated Statchk

Maxxam ID: FOU274
Sample ID: A0469 BH5
Matrix: Soil

Collected: 2017/11/16
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	5275410	N/A	2017/11/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5278151	2017/11/22	2017/11/22	Jeevaraj Jeevaratrnam
Moisture	BAL	5276173	N/A	2017/11/21	Min Yang
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5275626	N/A	2017/11/22	Yang (Philip) Yu

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

TEST SUMMARY

Maxxam ID: FOU275
Sample ID: A0444
Matrix: Soil

Collected: 2017/11/16
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	5278409	2017/11/22	2017/11/22	Suban Kanapathippllai
Free (WAD) Cyanide	TECH	5278446	2017/11/22	2017/11/23	Louise Harding
Conductivity	AT	5280344	2017/11/23	2017/11/23	Neil Dassanayake
Hexavalent Chromium in Soil by IC	IC/SPEC	5277936	2017/11/22	2017/11/23	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	5278201	2017/11/22	2017/11/23	Daniel Teclu
Moisture	BAL	5278493	N/A	2017/11/22	Chun Yan
pH CaCl2 EXTRACT	AT	5278171	2017/11/23	2017/11/23	Tahir Anwar
Sodium Adsorption Ratio (SAR)	CALC/MET	5274905	N/A	2017/11/24	Automated Statchk

Maxxam ID: FOU276
Sample ID: A0447
Matrix: Soil

Collected: 2017/11/16
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274628	N/A	2017/11/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	5275410	N/A	2017/11/23	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	5280147	2017/11/22	2017/11/23	Zhiyue (Frank) Zhu
Moisture	BAL	5276173	N/A	2017/11/21	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	5280155	2017/11/22	2017/11/23	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5275626	N/A	2017/11/22	Yang (Philip) Yu

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.7°C

Sample FOU273 [A0466 BH5] : SAR Analysis: Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Sample FOU275 [A0444] : SAR Analysis: Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5275626	YY	Matrix Spike	4-Bromofluorobenzene	2017/11/22		105	%	60 - 140
			D10-o-Xylene	2017/11/22		108	%	60 - 130
			D4-1,2-Dichloroethane	2017/11/22		89	%	60 - 140
			D8-Toluene	2017/11/22		102	%	60 - 140
			Acetone (2-Propanone)	2017/11/22		84	%	60 - 140
			Benzene	2017/11/22		102	%	60 - 140
			Bromodichloromethane	2017/11/22		92	%	60 - 140
			Bromoform	2017/11/22		103	%	60 - 140
			Bromomethane	2017/11/22		106	%	60 - 140
			Carbon Tetrachloride	2017/11/22		103	%	60 - 140
			Chlorobenzene	2017/11/22		97	%	60 - 140
			Chloroform	2017/11/22		96	%	60 - 140
			Dibromochloromethane	2017/11/22		99	%	60 - 140
			1,2-Dichlorobenzene	2017/11/22		95	%	60 - 140
			1,3-Dichlorobenzene	2017/11/22		99	%	60 - 140
			1,4-Dichlorobenzene	2017/11/22		99	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2017/11/22		111	%	60 - 140
			1,1-Dichloroethane	2017/11/22		100	%	60 - 140
			1,2-Dichloroethane	2017/11/22		88	%	60 - 140
			1,1-Dichloroethylene	2017/11/22		110	%	60 - 140
			cis-1,2-Dichloroethylene	2017/11/22		99	%	60 - 140
			trans-1,2-Dichloroethylene	2017/11/22		105	%	60 - 140
			1,2-Dichloropropane	2017/11/22		90	%	60 - 140
			cis-1,3-Dichloropropene	2017/11/22		86	%	60 - 140
			trans-1,3-Dichloropropene	2017/11/22		85	%	60 - 140
			Ethylbenzene	2017/11/22		97	%	60 - 140
			Ethylene Dibromide	2017/11/22		98	%	60 - 140
			Hexane	2017/11/22		112	%	60 - 140
			Methylene Chloride(Dichloromethane)	2017/11/22		91	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22		83	%	60 - 140
			Methyl Isobutyl Ketone	2017/11/22		78	%	60 - 140
			Methyl t-butyl ether (MTBE)	2017/11/22		95	%	60 - 140
			Styrene	2017/11/22		98	%	60 - 140
			1,1,1,2-Tetrachloroethane	2017/11/22		105	%	60 - 140
			1,1,2,2-Tetrachloroethane	2017/11/22		87	%	60 - 140
			Tetrachloroethylene	2017/11/22		105	%	60 - 140
			Toluene	2017/11/22		98	%	60 - 140
			1,1,1-Trichloroethane	2017/11/22		99	%	60 - 140
			1,1,2-Trichloroethane	2017/11/22		85	%	60 - 140
			Trichloroethylene	2017/11/22		106	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2017/11/22		107	%	60 - 140
			Vinyl Chloride	2017/11/22		105	%	60 - 140
			p+m-Xylene	2017/11/22		100	%	60 - 140
			o-Xylene	2017/11/22		97	%	60 - 140
			F1 (C6-C10)	2017/11/22		98	%	60 - 140
5275626	YY	Spiked Blank	4-Bromofluorobenzene	2017/11/22		105	%	60 - 140
			D10-o-Xylene	2017/11/22		106	%	60 - 130
			D4-1,2-Dichloroethane	2017/11/22		88	%	60 - 140
			D8-Toluene	2017/11/22		97	%	60 - 140
			Acetone (2-Propanone)	2017/11/22		83	%	60 - 140
			Benzene	2017/11/22		102	%	60 - 130
			Bromodichloromethane	2017/11/22		90	%	60 - 130
			Bromoform	2017/11/22		102	%	60 - 130
			Bromomethane	2017/11/22		106	%	60 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Carbon Tetrachloride	2017/11/22		103	%	60 - 130
			Chlorobenzene	2017/11/22		98	%	60 - 130
			Chloroform	2017/11/22		96	%	60 - 130
			Dibromochloromethane	2017/11/22		98	%	60 - 130
			1,2-Dichlorobenzene	2017/11/22		95	%	60 - 130
			1,3-Dichlorobenzene	2017/11/22		101	%	60 - 130
			1,4-Dichlorobenzene	2017/11/22		102	%	60 - 130
			Dichlorodifluoromethane (FREON 12)	2017/11/22		110	%	60 - 140
			1,1-Dichloroethane	2017/11/22		100	%	60 - 130
			1,2-Dichloroethane	2017/11/22		87	%	60 - 130
			1,1-Dichloroethylene	2017/11/22		111	%	60 - 130
			cis-1,2-Dichloroethylene	2017/11/22		101	%	60 - 130
			trans-1,2-Dichloroethylene	2017/11/22		107	%	60 - 130
			1,2-Dichloropropane	2017/11/22		88	%	60 - 130
			cis-1,3-Dichloropropene	2017/11/22		85	%	60 - 130
			trans-1,3-Dichloropropene	2017/11/22		82	%	60 - 130
			Ethylbenzene	2017/11/22		98	%	60 - 130
			Ethylene Dibromide	2017/11/22		96	%	60 - 130
			Hexane	2017/11/22		113	%	60 - 130
			Methylene Chloride(Dichloromethane)	2017/11/22		91	%	60 - 130
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22		84	%	60 - 140
			Methyl Isobutyl Ketone	2017/11/22		78	%	60 - 130
			Methyl t-butyl ether (MTBE)	2017/11/22		95	%	60 - 130
			Styrene	2017/11/22		99	%	60 - 130
			1,1,1,2-Tetrachloroethane	2017/11/22		105	%	60 - 130
			1,1,2,2-Tetrachloroethane	2017/11/22		88	%	60 - 130
			Tetrachloroethylene	2017/11/22		102	%	60 - 130
			Toluene	2017/11/22		94	%	60 - 130
			1,1,1-Trichloroethane	2017/11/22		100	%	60 - 130
			1,1,2-Trichloroethane	2017/11/22		82	%	60 - 130
			Trichloroethylene	2017/11/22		106	%	60 - 130
			Trichlorofluoromethane (FREON 11)	2017/11/22		108	%	60 - 130
			Vinyl Chloride	2017/11/22		106	%	60 - 130
			p+m-Xylene	2017/11/22		101	%	60 - 130
			o-Xylene	2017/11/22		98	%	60 - 130
			F1 (C6-C10)	2017/11/22		93	%	80 - 120
5275626	YY	Method Blank	4-Bromofluorobenzene	2017/11/22		103	%	60 - 140
			D10-o-Xylene	2017/11/22		95	%	60 - 130
			D4-1,2-Dichloroethane	2017/11/22		88	%	60 - 140
			D8-Toluene	2017/11/22		98	%	60 - 140
			Acetone (2-Propanone)	2017/11/22	<0.50		ug/g	
			Benzene	2017/11/22	<0.020		ug/g	
			Bromodichloromethane	2017/11/22	<0.050		ug/g	
			Bromoform	2017/11/22	<0.050		ug/g	
			Bromomethane	2017/11/22	<0.050		ug/g	
			Carbon Tetrachloride	2017/11/22	<0.050		ug/g	
			Chlorobenzene	2017/11/22	<0.050		ug/g	
			Chloroform	2017/11/22	<0.050		ug/g	
			Dibromochloromethane	2017/11/22	<0.050		ug/g	
			1,2-Dichlorobenzene	2017/11/22	<0.050		ug/g	
			1,3-Dichlorobenzene	2017/11/22	<0.050		ug/g	
			1,4-Dichlorobenzene	2017/11/22	<0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2017/11/22	<0.050		ug/g	
			1,1-Dichloroethane	2017/11/22	<0.050		ug/g	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,2-Dichloroethane	2017/11/22	<0.050		ug/g	
			1,1-Dichloroethylene	2017/11/22	<0.050		ug/g	
			cis-1,2-Dichloroethylene	2017/11/22	<0.050		ug/g	
			trans-1,2-Dichloroethylene	2017/11/22	<0.050		ug/g	
			1,2-Dichloropropane	2017/11/22	<0.050		ug/g	
			cis-1,3-Dichloropropene	2017/11/22	<0.030		ug/g	
			trans-1,3-Dichloropropene	2017/11/22	<0.040		ug/g	
			Ethylbenzene	2017/11/22	<0.020		ug/g	
			Ethylene Dibromide	2017/11/22	<0.050		ug/g	
			Hexane	2017/11/22	<0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2017/11/22	<0.050		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22	<0.50		ug/g	
			Methyl Isobutyl Ketone	2017/11/22	<0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2017/11/22	<0.050		ug/g	
			Styrene	2017/11/22	<0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2017/11/22	<0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2017/11/22	<0.050		ug/g	
			Tetrachloroethylene	2017/11/22	<0.050		ug/g	
			Toluene	2017/11/22	<0.020		ug/g	
			1,1,1-Trichloroethane	2017/11/22	<0.050		ug/g	
			1,1,2-Trichloroethane	2017/11/22	<0.050		ug/g	
			Trichloroethylene	2017/11/22	<0.050		ug/g	
			Trichlorofluoromethane (FREON 11)	2017/11/22	<0.050		ug/g	
			Vinyl Chloride	2017/11/22	<0.020		ug/g	
			p+m-Xylene	2017/11/22	<0.020		ug/g	
			o-Xylene	2017/11/22	<0.020		ug/g	
			Total Xylenes	2017/11/22	<0.020		ug/g	
			F1 (C6-C10)	2017/11/22	<10		ug/g	
			F1 (C6-C10) - BTEX	2017/11/22	<10		ug/g	
5275626	YY	RPD	Acetone (2-Propanone)	2017/11/22	NC		%	50
			Benzene	2017/11/22	NC		%	50
			Bromodichloromethane	2017/11/22	NC		%	50
			Bromoform	2017/11/22	NC		%	50
			Bromomethane	2017/11/22	NC		%	50
			Carbon Tetrachloride	2017/11/22	NC		%	50
			Chlorobenzene	2017/11/22	NC		%	50
			Chloroform	2017/11/22	NC		%	50
			Dibromochloromethane	2017/11/22	NC		%	50
			1,2-Dichlorobenzene	2017/11/22	NC		%	50
			1,3-Dichlorobenzene	2017/11/22	NC		%	50
			1,4-Dichlorobenzene	2017/11/22	NC		%	50
			Dichlorodifluoromethane (FREON 12)	2017/11/22	NC		%	50
			1,1-Dichloroethane	2017/11/22	NC		%	50
			1,2-Dichloroethane	2017/11/22	NC		%	50
			1,1-Dichloroethylene	2017/11/22	NC		%	50
			cis-1,2-Dichloroethylene	2017/11/22	NC		%	50
			trans-1,2-Dichloroethylene	2017/11/22	NC		%	50
			1,2-Dichloropropane	2017/11/22	NC		%	50
			cis-1,3-Dichloropropene	2017/11/22	NC		%	50
			trans-1,3-Dichloropropene	2017/11/22	NC		%	50
			Ethylbenzene	2017/11/22	NC		%	50
			Ethylene Dibromide	2017/11/22	NC		%	50
			Hexane	2017/11/22	NC		%	50
			Methylene Chloride(Dichloromethane)	2017/11/22	NC		%	50

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22	NC		%	50
			Methyl Isobutyl Ketone	2017/11/22	NC		%	50
			Methyl t-butyl ether (MTBE)	2017/11/22	NC		%	50
			Styrene	2017/11/22	NC		%	50
			1,1,1,2-Tetrachloroethane	2017/11/22	NC		%	50
			1,1,2,2-Tetrachloroethane	2017/11/22	NC		%	50
			Tetrachloroethylene	2017/11/22	NC		%	50
			Toluene	2017/11/22	NC		%	50
			1,1,1-Trichloroethane	2017/11/22	NC		%	50
			1,1,2-Trichloroethane	2017/11/22	NC		%	50
			Trichloroethylene	2017/11/22	NC		%	50
			Trichlorofluoromethane (FREON 11)	2017/11/22	NC		%	50
			Vinyl Chloride	2017/11/22	NC		%	50
			p+m-Xylene	2017/11/22	NC		%	50
			o-Xylene	2017/11/22	NC		%	50
			Total Xylenes	2017/11/22	NC		%	50
			F1 (C6-C10)	2017/11/22	NC		%	30
			F1 (C6-C10) - BTEX	2017/11/22	NC		%	30
5276173	CYN	RPD	Moisture	2017/11/21	4.8		%	20
5277936	SAC	Matrix Spike [FOU267-01]	Chromium (VI)	2017/11/23		76	%	75 - 125
5277936	SAC	Spiked Blank	Chromium (VI)	2017/11/23		89	%	80 - 120
5277936	SAC	Method Blank	Chromium (VI)	2017/11/23	<0.2		ug/g	
5277936	SAC	RPD [FOU267-01]	Chromium (VI)	2017/11/23	4.9		%	35
5278151	JJE	Matrix Spike	o-Terphenyl	2017/11/22		90	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/11/22		83	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2017/11/22		85	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2017/11/22		85	%	50 - 130
5278151	JJE	Spiked Blank	o-Terphenyl	2017/11/22		93	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/11/22		87	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2017/11/22		88	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2017/11/22		85	%	80 - 120
5278151	JJE	Method Blank	o-Terphenyl	2017/11/22		98	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/11/22	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2017/11/22	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2017/11/22	<50		ug/g	
5278151	JJE	RPD	F2 (C10-C16 Hydrocarbons)	2017/11/22	0.50		%	30
			F3 (C16-C34 Hydrocarbons)	2017/11/22	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2017/11/22	NC		%	30
5278171	TA1	Spiked Blank	Available (CaCl2) pH	2017/11/23		99	%	97 - 103
5278171	TA1	RPD [FOU267-01]	Available (CaCl2) pH	2017/11/23	0.028		%	N/A
5278201	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2017/11/23		95	%	75 - 125
			Acid Extractable Arsenic (As)	2017/11/23		102	%	75 - 125
			Acid Extractable Barium (Ba)	2017/11/23		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2017/11/23		101	%	75 - 125
			Acid Extractable Boron (B)	2017/11/23		92	%	75 - 125
			Acid Extractable Cadmium (Cd)	2017/11/23		100	%	75 - 125
			Acid Extractable Chromium (Cr)	2017/11/23		108	%	75 - 125
			Acid Extractable Cobalt (Co)	2017/11/23		100	%	75 - 125
			Acid Extractable Copper (Cu)	2017/11/23		101	%	75 - 125
			Acid Extractable Lead (Pb)	2017/11/23		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2017/11/23		99	%	75 - 125
			Acid Extractable Nickel (Ni)	2017/11/23		101	%	75 - 125
			Acid Extractable Selenium (Se)	2017/11/23		98	%	75 - 125
			Acid Extractable Silver (Ag)	2017/11/23		103	%	75 - 125

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Thallium (Tl)	2017/11/23		101	%	75 - 125
			Acid Extractable Uranium (U)	2017/11/23		101	%	75 - 125
			Acid Extractable Vanadium (V)	2017/11/23		NC	%	75 - 125
			Acid Extractable Zinc (Zn)	2017/11/23		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2017/11/23		103	%	75 - 125
5278201	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2017/11/23		104	%	80 - 120
			Acid Extractable Arsenic (As)	2017/11/23		100	%	80 - 120
			Acid Extractable Barium (Ba)	2017/11/23		100	%	80 - 120
			Acid Extractable Beryllium (Be)	2017/11/23		97	%	80 - 120
			Acid Extractable Boron (B)	2017/11/23		100	%	80 - 120
			Acid Extractable Cadmium (Cd)	2017/11/23		100	%	80 - 120
			Acid Extractable Chromium (Cr)	2017/11/23		97	%	80 - 120
			Acid Extractable Cobalt (Co)	2017/11/23		99	%	80 - 120
			Acid Extractable Copper (Cu)	2017/11/23		101	%	80 - 120
			Acid Extractable Lead (Pb)	2017/11/23		102	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2017/11/23		101	%	80 - 120
			Acid Extractable Nickel (Ni)	2017/11/23		99	%	80 - 120
			Acid Extractable Selenium (Se)	2017/11/23		102	%	80 - 120
			Acid Extractable Silver (Ag)	2017/11/23		101	%	80 - 120
			Acid Extractable Thallium (Tl)	2017/11/23		101	%	80 - 120
			Acid Extractable Uranium (U)	2017/11/23		100	%	80 - 120
			Acid Extractable Vanadium (V)	2017/11/23		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2017/11/23		102	%	80 - 120
			Acid Extractable Mercury (Hg)	2017/11/23		102	%	80 - 120
5278201	DT1	Method Blank	Acid Extractable Antimony (Sb)	2017/11/23	<0.20		ug/g	
			Acid Extractable Arsenic (As)	2017/11/23	<1.0		ug/g	
			Acid Extractable Barium (Ba)	2017/11/23	<0.50		ug/g	
			Acid Extractable Beryllium (Be)	2017/11/23	<0.20		ug/g	
			Acid Extractable Boron (B)	2017/11/23	<5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2017/11/23	<0.10		ug/g	
			Acid Extractable Chromium (Cr)	2017/11/23	<1.0		ug/g	
			Acid Extractable Cobalt (Co)	2017/11/23	<0.10		ug/g	
			Acid Extractable Copper (Cu)	2017/11/23	<0.50		ug/g	
			Acid Extractable Lead (Pb)	2017/11/23	<1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2017/11/23	<0.50		ug/g	
			Acid Extractable Nickel (Ni)	2017/11/23	<0.50		ug/g	
			Acid Extractable Selenium (Se)	2017/11/23	<0.50		ug/g	
			Acid Extractable Silver (Ag)	2017/11/23	<0.20		ug/g	
			Acid Extractable Thallium (Tl)	2017/11/23	<0.050		ug/g	
			Acid Extractable Uranium (U)	2017/11/23	<0.050		ug/g	
			Acid Extractable Vanadium (V)	2017/11/23	<5.0		ug/g	
			Acid Extractable Zinc (Zn)	2017/11/23	<5.0		ug/g	
			Acid Extractable Mercury (Hg)	2017/11/23	<0.050		ug/g	
5278201	DT1	RPD	Acid Extractable Antimony (Sb)	2017/11/23	7.6		%	30
			Acid Extractable Arsenic (As)	2017/11/23	7.9		%	30
			Acid Extractable Barium (Ba)	2017/11/23	3.4		%	30
			Acid Extractable Beryllium (Be)	2017/11/23	0.058		%	30
			Acid Extractable Boron (B)	2017/11/23	3.1		%	30
			Acid Extractable Cadmium (Cd)	2017/11/23	3.4		%	30
			Acid Extractable Chromium (Cr)	2017/11/23	2.7		%	30
			Acid Extractable Cobalt (Co)	2017/11/23	4.3		%	30
			Acid Extractable Copper (Cu)	2017/11/23	3.5		%	30
			Acid Extractable Lead (Pb)	2017/11/23	9.8		%	30
			Acid Extractable Molybdenum (Mo)	2017/11/23	6.5		%	30

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Nickel (Ni)	2017/11/23	3.2		%	30
			Acid Extractable Selenium (Se)	2017/11/23	NC		%	30
			Acid Extractable Silver (Ag)	2017/11/23	NC		%	30
			Acid Extractable Thallium (Tl)	2017/11/23	3.2		%	30
			Acid Extractable Uranium (U)	2017/11/23	2.8		%	30
			Acid Extractable Vanadium (V)	2017/11/23	4.8		%	30
			Acid Extractable Zinc (Zn)	2017/11/23	1.7		%	30
			Acid Extractable Mercury (Hg)	2017/11/23	NC		%	30
5278409	SUK	Matrix Spike	Hot Water Ext. Boron (B)	2017/11/22		98	%	75 - 125
5278409	SUK	Spiked Blank	Hot Water Ext. Boron (B)	2017/11/22		101	%	75 - 125
5278409	SUK	Method Blank	Hot Water Ext. Boron (B)	2017/11/22	<0.050		ug/g	
5278409	SUK	RPD	Hot Water Ext. Boron (B)	2017/11/22	2.0		%	40
5278446	LHA	Matrix Spike [FOU267-01]	WAD Cyanide (Free)	2017/11/23		98	%	75 - 125
5278446	LHA	Spiked Blank	WAD Cyanide (Free)	2017/11/23		99	%	80 - 120
5278446	LHA	Method Blank	WAD Cyanide (Free)	2017/11/23	<0.01		ug/g	
5278446	LHA	RPD [FOU267-01]	WAD Cyanide (Free)	2017/11/23	NC		%	35
5278493	NS3	RPD [FOU263-01]	Moisture	2017/11/22	1.5		%	20
5278538	CYN	RPD	Moisture	2017/11/22	0.94		%	20
5279152	NS3	QC Standard	Sieve - #200 (<0.075mm)	2017/11/23		56	%	53 - 58
			Sieve - #200 (>0.075mm)	2017/11/23		44	%	42 - 47
5279152	NS3	RPD	Sieve - #200 (<0.075mm)	2017/11/23	1.4		%	20
			Sieve - #200 (>0.075mm)	2017/11/23	5.8		%	20
5279476	RAJ	Matrix Spike [FOU267-02]	D10-Anthracene	2017/11/23		94	%	50 - 130
			D14-Terphenyl (FS)	2017/11/23		94	%	50 - 130
			D8-Acenaphthylene	2017/11/23		93	%	50 - 130
			Acenaphthene	2017/11/23		90	%	50 - 130
			Acenaphthylene	2017/11/23		88	%	50 - 130
			Anthracene	2017/11/23		87	%	50 - 130
			Benzo(a)anthracene	2017/11/23		94	%	50 - 130
			Benzo(a)pyrene	2017/11/23		87	%	50 - 130
			Benzo(b/j)fluoranthene	2017/11/23		89	%	50 - 130
			Benzo(g,h,i)perylene	2017/11/23		93	%	50 - 130
			Benzo(k)fluoranthene	2017/11/23		83	%	50 - 130
			Chrysene	2017/11/23		98	%	50 - 130
			Dibenz(a,h)anthracene	2017/11/23		93	%	50 - 130
			Fluoranthene	2017/11/23		85	%	50 - 130
			Fluorene	2017/11/23		92	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2017/11/23		91	%	50 - 130
			1-Methylnaphthalene	2017/11/23		98	%	50 - 130
			2-Methylnaphthalene	2017/11/23		86	%	50 - 130
			Naphthalene	2017/11/23		85	%	50 - 130
			Phenanthrene	2017/11/23		90	%	50 - 130
			Pyrene	2017/11/23		99	%	50 - 130
5279476	RAJ	Spiked Blank	D10-Anthracene	2017/11/22		93	%	50 - 130
			D14-Terphenyl (FS)	2017/11/22		102	%	50 - 130
			D8-Acenaphthylene	2017/11/22		92	%	50 - 130
			Acenaphthene	2017/11/22		89	%	50 - 130
			Acenaphthylene	2017/11/22		83	%	50 - 130
			Anthracene	2017/11/22		84	%	50 - 130
			Benzo(a)anthracene	2017/11/22		89	%	50 - 130
			Benzo(a)pyrene	2017/11/22		88	%	50 - 130
			Benzo(b/j)fluoranthene	2017/11/22		94	%	50 - 130
			Benzo(g,h,i)perylene	2017/11/22		94	%	50 - 130
			Benzo(k)fluoranthene	2017/11/22		95	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chrysene	2017/11/22		98	%	50 - 130
			Dibenz(a,h)anthracene	2017/11/22		96	%	50 - 130
			Fluoranthene	2017/11/22		101	%	50 - 130
			Fluorene	2017/11/22		90	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2017/11/22		91	%	50 - 130
			1-Methylnaphthalene	2017/11/22		85	%	50 - 130
			2-Methylnaphthalene	2017/11/22		73	%	50 - 130
			Naphthalene	2017/11/22		85	%	50 - 130
			Phenanthrene	2017/11/22		91	%	50 - 130
			Pyrene	2017/11/22		95	%	50 - 130
5279476	RAJ	Method Blank	D10-Anthracene	2017/11/22		95	%	50 - 130
			D14-Terphenyl (FS)	2017/11/22		96	%	50 - 130
			D8-Acenaphthylene	2017/11/22		87	%	50 - 130
			Acenaphthene	2017/11/22	<0.0050		ug/g	
			Acenaphthylene	2017/11/22	<0.0050		ug/g	
			Anthracene	2017/11/22	<0.0050		ug/g	
			Benzo(a)anthracene	2017/11/22	<0.0050		ug/g	
			Benzo(a)pyrene	2017/11/22	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2017/11/22	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2017/11/22	<0.0050		ug/g	
			Benzo(k)fluoranthene	2017/11/22	<0.0050		ug/g	
			Chrysene	2017/11/22	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2017/11/22	<0.0050		ug/g	
			Fluoranthene	2017/11/22	<0.0050		ug/g	
			Fluorene	2017/11/22	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2017/11/22	<0.0050		ug/g	
			1-Methylnaphthalene	2017/11/22	<0.0050		ug/g	
			2-Methylnaphthalene	2017/11/22	<0.0050		ug/g	
			Naphthalene	2017/11/22	<0.0050		ug/g	
			Phenanthrene	2017/11/22	<0.0050		ug/g	
			Pyrene	2017/11/22	<0.0050		ug/g	
5279476	RAJ	RPD [FOU267-02]	Acenaphthene	2017/11/22	NC		%	40
			Acenaphthylene	2017/11/22	NC		%	40
			Anthracene	2017/11/22	NC		%	40
			Benzo(a)anthracene	2017/11/22	NC		%	40
			Benzo(a)pyrene	2017/11/22	NC		%	40
			Benzo(b/j)fluoranthene	2017/11/22	NC		%	40
			Benzo(g,h,i)perylene	2017/11/22	NC		%	40
			Benzo(k)fluoranthene	2017/11/22	NC		%	40
			Chrysene	2017/11/22	NC		%	40
			Dibenz(a,h)anthracene	2017/11/22	NC		%	40
			Fluoranthene	2017/11/22	NC		%	40
			Fluorene	2017/11/22	NC		%	40
			Indeno(1,2,3-cd)pyrene	2017/11/22	NC		%	40
			1-Methylnaphthalene	2017/11/22	NC		%	40
			2-Methylnaphthalene	2017/11/22	NC		%	40
			Naphthalene	2017/11/22	NC		%	40
			Phenanthrene	2017/11/22	NC		%	40
			Pyrene	2017/11/22	NC		%	40
5280147	ZZ	Matrix Spike	o-Terphenyl	2017/11/23		103	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/11/23		NC	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2017/11/23		NC	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2017/11/23		94	%	50 - 130
5280147	ZZ	Spiked Blank	o-Terphenyl	2017/11/22		96	%	60 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F2 (C10-C16 Hydrocarbons)	2017/11/22		90	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2017/11/22		96	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2017/11/22		90	%	80 - 120
5280147	ZZ	Method Blank	o-Terphenyl	2017/11/22		96	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/11/22	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2017/11/22	<50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2017/11/22	<50		ug/g	
5280147	ZZ	RPD	F2 (C10-C16 Hydrocarbons)	2017/11/23	5.7		%	30
			F3 (C16-C34 Hydrocarbons)	2017/11/23	0.73		%	30
			F4 (C34-C50 Hydrocarbons)	2017/11/23	NC		%	30
5280155	RAJ	Matrix Spike	D10-Anthracene	2017/11/23		89	%	50 - 130
			D14-Terphenyl (FS)	2017/11/23		84	%	50 - 130
			D8-Acenaphthylene	2017/11/23		92	%	50 - 130
			Acenaphthene	2017/11/23		102	%	50 - 130
			Acenaphthylene	2017/11/23		99	%	50 - 130
			Anthracene	2017/11/23		87	%	50 - 130
			Benzo(a)anthracene	2017/11/23		88	%	50 - 130
			Benzo(a)pyrene	2017/11/23		84	%	50 - 130
			Benzo(b/j)fluoranthene	2017/11/23		87	%	50 - 130
			Benzo(g,h,i)perylene	2017/11/23		99	%	50 - 130
			Benzo(k)fluoranthene	2017/11/23		87	%	50 - 130
			Chrysene	2017/11/23		92	%	50 - 130
			Dibenz(a,h)anthracene	2017/11/23		96	%	50 - 130
			Fluoranthene	2017/11/23		94	%	50 - 130
			Fluorene	2017/11/23		96	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2017/11/23		84	%	50 - 130
			1-Methylnaphthalene	2017/11/23		98	%	50 - 130
			2-Methylnaphthalene	2017/11/23		88	%	50 - 130
			Naphthalene	2017/11/23		96	%	50 - 130
			Phenanthrene	2017/11/23		94	%	50 - 130
			Pyrene	2017/11/23		77	%	50 - 130
5280155	RAJ	Spiked Blank	D10-Anthracene	2017/11/23		89	%	50 - 130
			D14-Terphenyl (FS)	2017/11/23		104	%	50 - 130
			D8-Acenaphthylene	2017/11/23		87	%	50 - 130
			Acenaphthene	2017/11/23		85	%	50 - 130
			Acenaphthylene	2017/11/23		79	%	50 - 130
			Anthracene	2017/11/23		78	%	50 - 130
			Benzo(a)anthracene	2017/11/23		86	%	50 - 130
			Benzo(a)pyrene	2017/11/23		86	%	50 - 130
			Benzo(b/j)fluoranthene	2017/11/23		95	%	50 - 130
			Benzo(g,h,i)perylene	2017/11/23		86	%	50 - 130
			Benzo(k)fluoranthene	2017/11/23		94	%	50 - 130
			Chrysene	2017/11/23		96	%	50 - 130
			Dibenz(a,h)anthracene	2017/11/23		94	%	50 - 130
			Fluoranthene	2017/11/23		90	%	50 - 130
			Fluorene	2017/11/23		90	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2017/11/23		86	%	50 - 130
			1-Methylnaphthalene	2017/11/23		126	%	50 - 130
			2-Methylnaphthalene	2017/11/23		108	%	50 - 130
			Naphthalene	2017/11/23		83	%	50 - 130
			Phenanthrene	2017/11/23		92	%	50 - 130
			Pyrene	2017/11/23		101	%	50 - 130
5280155	RAJ	Method Blank	D10-Anthracene	2017/11/23		90	%	50 - 130
			D14-Terphenyl (FS)	2017/11/23		97	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			D8-Acenaphthylene	2017/11/23		86	%	50 - 130
			Acenaphthene	2017/11/23	<0.0050		ug/g	
			Acenaphthylene	2017/11/23	<0.0050		ug/g	
			Anthracene	2017/11/23	<0.0050		ug/g	
			Benzo(a)anthracene	2017/11/23	<0.0050		ug/g	
			Benzo(a)pyrene	2017/11/23	<0.0050		ug/g	
			Benzo(b/j)fluoranthene	2017/11/23	<0.0050		ug/g	
			Benzo(g,h,i)perylene	2017/11/23	<0.0050		ug/g	
			Benzo(k)fluoranthene	2017/11/23	<0.0050		ug/g	
			Chrysene	2017/11/23	<0.0050		ug/g	
			Dibenz(a,h)anthracene	2017/11/23	<0.0050		ug/g	
			Fluoranthene	2017/11/23	<0.0050		ug/g	
			Fluorene	2017/11/23	<0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2017/11/23	<0.0050		ug/g	
			1-Methylnaphthalene	2017/11/23	<0.0050		ug/g	
			2-Methylnaphthalene	2017/11/23	<0.0050		ug/g	
			Naphthalene	2017/11/23	<0.0050		ug/g	
			Phenanthrene	2017/11/23	<0.0050		ug/g	
			Pyrene	2017/11/23	<0.0050		ug/g	
5280155	RAJ	RPD	Acenaphthene	2017/11/23	8.3		%	40
			Acenaphthylene	2017/11/23	NC (1)		%	40
			Anthracene	2017/11/23	6.2		%	40
			Benzo(a)anthracene	2017/11/23	NC		%	40
			Benzo(a)pyrene	2017/11/23	NC		%	40
			Benzo(b/j)fluoranthene	2017/11/23	NC		%	40
			Benzo(g,h,i)perylene	2017/11/23	NC		%	40
			Benzo(k)fluoranthene	2017/11/23	NC		%	40
			Chrysene	2017/11/23	NC		%	40
			Dibenz(a,h)anthracene	2017/11/23	NC		%	40
			Fluoranthene	2017/11/23	NC		%	40
			Fluorene	2017/11/23	7.9		%	40
			Indeno(1,2,3-cd)pyrene	2017/11/23	NC		%	40
			1-Methylnaphthalene	2017/11/23	3.4		%	40
			2-Methylnaphthalene	2017/11/23	5.2		%	40
			Naphthalene	2017/11/23	29		%	40
			Phenanthrene	2017/11/23	6.6		%	40
			Pyrene	2017/11/23	6.1		%	40
5280344	NYS	Spiked Blank	Conductivity	2017/11/23		100	%	90 - 110
5280344	NYS	Method Blank	Conductivity	2017/11/23	<0.002		mS/cm	
5280344	NYS	RPD	Conductivity	2017/11/23	0.47		%	10
5280479	BG1	Matrix Spike	Leachable 4-Bromofluorobenzene	2017/11/23		87	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2017/11/23		96	%	70 - 130
			Leachable D8-Toluene	2017/11/23		108	%	70 - 130
			Leachable Benzene	2017/11/23		113	%	70 - 130
			Leachable Carbon Tetrachloride	2017/11/23		97	%	70 - 130
			Leachable Chlorobenzene	2017/11/23		98	%	70 - 130
			Leachable Chloroform	2017/11/23		99	%	70 - 130
			Leachable 1,2-Dichlorobenzene	2017/11/23		97	%	70 - 130
			Leachable 1,4-Dichlorobenzene	2017/11/23		100	%	70 - 130
			Leachable 1,2-Dichloroethane	2017/11/23		97	%	70 - 130
			Leachable 1,1-Dichloroethylene	2017/11/23		112	%	70 - 130
			Leachable Methylene Chloride(Dichloromethan	2017/11/23		107	%	70 - 130
			Leachable Methyl Ethyl Ketone (2-Butanone)	2017/11/23		91	%	60 - 140
			Leachable Tetrachloroethylene	2017/11/23		97	%	70 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Leachable Trichloroethylene	2017/11/23		97	%	70 - 130
			Leachable Vinyl Chloride	2017/11/23		109	%	70 - 130
5280479	BG1	Spiked Blank	Leachable 4-Bromofluorobenzene	2017/11/23		104	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2017/11/23		96	%	70 - 130
			Leachable D8-Toluene	2017/11/23		108	%	70 - 130
			Leachable Benzene	2017/11/23		114	%	70 - 130
			Leachable Carbon Tetrachloride	2017/11/23		98	%	70 - 130
			Leachable Chlorobenzene	2017/11/23		99	%	70 - 130
			Leachable Chloroform	2017/11/23		99	%	70 - 130
			Leachable 1,2-Dichlorobenzene	2017/11/23		98	%	70 - 130
			Leachable 1,4-Dichlorobenzene	2017/11/23		100	%	70 - 130
			Leachable 1,2-Dichloroethane	2017/11/23		97	%	70 - 130
			Leachable 1,1-Dichloroethylene	2017/11/23		114	%	70 - 130
			Leachable Methylene Chloride(Dichloromethan	2017/11/23		107	%	70 - 130
			Leachable Methyl Ethyl Ketone (2-Butanone)	2017/11/23		99	%	60 - 140
			Leachable Tetrachloroethylene	2017/11/23		99	%	70 - 130
			Leachable Trichloroethylene	2017/11/23		99	%	70 - 130
			Leachable Vinyl Chloride	2017/11/23		111	%	70 - 130
5280479	BG1	Method Blank	Leachable 4-Bromofluorobenzene	2017/11/23		75	%	70 - 130
			Leachable D4-1,2-Dichloroethane	2017/11/23		105	%	70 - 130
			Leachable D8-Toluene	2017/11/23		90	%	70 - 130
			Leachable Benzene	2017/11/23	<0.020		mg/L	
			Leachable Carbon Tetrachloride	2017/11/23	<0.020		mg/L	
			Leachable Chlorobenzene	2017/11/23	<0.020		mg/L	
			Leachable Chloroform	2017/11/23	<0.020		mg/L	
			Leachable 1,2-Dichlorobenzene	2017/11/23	<0.050		mg/L	
			Leachable 1,4-Dichlorobenzene	2017/11/23	<0.050		mg/L	
			Leachable 1,2-Dichloroethane	2017/11/23	<0.050		mg/L	
			Leachable 1,1-Dichloroethylene	2017/11/23	<0.020		mg/L	
			Leachable Methylene Chloride(Dichloromethan	2017/11/23	<0.20		mg/L	
			Leachable Methyl Ethyl Ketone (2-Butanone)	2017/11/23	<1.0		mg/L	
			Leachable Tetrachloroethylene	2017/11/23	<0.020		mg/L	
			Leachable Trichloroethylene	2017/11/23	<0.020		mg/L	
			Leachable Vinyl Chloride	2017/11/23	<0.020		mg/L	
5280479	BG1	RPD	Leachable Benzene	2017/11/23	NC		%	30
			Leachable Carbon Tetrachloride	2017/11/23	NC		%	30
			Leachable Chlorobenzene	2017/11/23	NC		%	30
			Leachable Chloroform	2017/11/23	NC		%	30
			Leachable 1,2-Dichlorobenzene	2017/11/23	NC		%	30
			Leachable 1,4-Dichlorobenzene	2017/11/23	NC		%	30
			Leachable 1,2-Dichloroethane	2017/11/23	NC		%	30
			Leachable 1,1-Dichloroethylene	2017/11/23	NC		%	30
			Leachable Methylene Chloride(Dichloromethan	2017/11/23	NC		%	30
			Leachable Methyl Ethyl Ketone (2-Butanone)	2017/11/23	NC		%	30
			Leachable Tetrachloroethylene	2017/11/23	NC		%	30
			Leachable Trichloroethylene	2017/11/23	NC		%	30
			Leachable Vinyl Chloride	2017/11/23	NC		%	30
5280861	ADA	Matrix Spike	Leachable Arsenic (As)	2017/11/23		95	%	80 - 120
			Leachable Barium (Ba)	2017/11/23		102	%	80 - 120
			Leachable Boron (B)	2017/11/23		101	%	80 - 120
			Leachable Cadmium (Cd)	2017/11/23		101	%	80 - 120
			Leachable Chromium (Cr)	2017/11/23		93	%	80 - 120
			Leachable Lead (Pb)	2017/11/23		95	%	80 - 120
			Leachable Selenium (Se)	2017/11/23		96	%	80 - 120

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Leachable Silver (Ag)	2017/11/23		97	%	80 - 120
5280861	ADA	Leachate Blank	Leachable Arsenic (As)	2017/11/23	<0.2		mg/L	
			Leachable Barium (Ba)	2017/11/23	<0.2		mg/L	
			Leachable Boron (B)	2017/11/23	<0.1		mg/L	
			Leachable Cadmium (Cd)	2017/11/23	<0.05		mg/L	
			Leachable Chromium (Cr)	2017/11/23	<0.1		mg/L	
			Leachable Lead (Pb)	2017/11/23	<0.1		mg/L	
			Leachable Selenium (Se)	2017/11/23	<0.1		mg/L	
			Leachable Silver (Ag)	2017/11/23	<0.01		mg/L	
5280861	ADA	Spiked Blank	Leachable Arsenic (As)	2017/11/23		97	%	80 - 120
			Leachable Barium (Ba)	2017/11/23		102	%	80 - 120
			Leachable Boron (B)	2017/11/23		102	%	80 - 120
			Leachable Cadmium (Cd)	2017/11/23		100	%	80 - 120
			Leachable Chromium (Cr)	2017/11/23		95	%	80 - 120
			Leachable Lead (Pb)	2017/11/23		96	%	80 - 120
			Leachable Selenium (Se)	2017/11/23		96	%	80 - 120
			Leachable Silver (Ag)	2017/11/23		98	%	80 - 120
5280861	ADA	RPD	Leachable Arsenic (As)	2017/11/23	NC		%	35
			Leachable Barium (Ba)	2017/11/23	NC		%	35
			Leachable Boron (B)	2017/11/23	NC		%	35
			Leachable Cadmium (Cd)	2017/11/23	NC		%	35
			Leachable Chromium (Cr)	2017/11/23	NC		%	35
			Leachable Lead (Pb)	2017/11/23	NC		%	35
			Leachable Selenium (Se)	2017/11/23	NC		%	35
			Leachable Silver (Ag)	2017/11/23	NC		%	35
5280883	RON	Matrix Spike	Leachable Mercury (Hg)	2017/11/24		105	%	75 - 125
5280883	RON	Leachate Blank	Leachable Mercury (Hg)	2017/11/24	<0.0010		mg/L	
5280883	RON	Spiked Blank	Leachable Mercury (Hg)	2017/11/24		100	%	80 - 120
5280883	RON	Method Blank	Leachable Mercury (Hg)	2017/11/24	<0.0010		mg/L	
5280883	RON	RPD	Leachable Mercury (Hg)	2017/11/24	NC		%	25
5280893	XQI	Matrix Spike	Leachable WAD Cyanide (Free)	2017/11/23		93	%	80 - 120
5280893	XQI	Leachate Blank	Leachable WAD Cyanide (Free)	2017/11/23	<0.010		mg/L	
5280893	XQI	Spiked Blank	Leachable WAD Cyanide (Free)	2017/11/23		102	%	80 - 120
5280893	XQI	Method Blank	Leachable WAD Cyanide (Free)	2017/11/23	<0.0020		mg/L	
5280893	XQI	RPD	Leachable WAD Cyanide (Free)	2017/11/23	NC		%	20
5280894	SAU	Matrix Spike	Leachable Fluoride (F-)	2017/11/23		94	%	80 - 120
5280894	SAU	Leachate Blank	Leachable Fluoride (F-)	2017/11/23	<0.10		mg/L	
5280894	SAU	Spiked Blank	Leachable Fluoride (F-)	2017/11/23		104	%	80 - 120
5280894	SAU	Method Blank	Leachable Fluoride (F-)	2017/11/23	<0.10		mg/L	

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5280894	SAU	RPD	Leachable Fluoride (F-)	2017/11/23	NC		%	25

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Detection Limit was raised due to matrix interferences.

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Maxxam Job #: B7Q0135
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: CC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

Cristina Carriere, Scientific Service Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.maxxam.ca

17-Nov-17 15:30
Antonella Brasil
B7Q0135
PS4 ENV-648

Page 1 of 2

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#14134 AEL Environment	Company Name:	AEL Environment	Quotation #:	B71396
Attention:	Accounting	Attention:	Reporting Group	P.O. #:	
Address:	1705 Argentia Rd Unit 3 Mississauga ON L5N 3A9	Address:		Project:	10869
				Project Name:	
Tel:	(416) 657-2367 x Fax: (416) 647-2367 x	Tel:	Fax:	Site #:	
Email:	twilson@aelenv.com	Email:	lab@aeonegmond.com	Sampled By:	

Laboratory Use Only:
Bottle Order #: 638033 (C#638033-01-01)
Project Manager: Antonella Brasil

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine; ☐ Table 2 ☒ Ind/Comm ☐ Coarse; ☒ Table 3 ☐ Agri/Other ☒ For RSC; ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw; ☐ Reg 558 ☐ Storm Sewer Bylaw; ☐ MISA Municipality ______; ☐ PWQO; ☐ Other ______

Special Instructions:

Include Criteria on Certificate of Analysis (Y/N)? ______

Turnaround Time (TAT) Required: Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ______ Time Required: ______
Rush Confirmation Number: ______ (call lab for #)

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

#	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	PAHs (Soil)	VOCs by HS (Soil)	Sieve, 75um (Fine VS Coarse)	OReg153 PHCs (F1 to F4)/BTEX	OReg153 metals & inorganics (ICPMS, HWSB, CrVI, EC, SAR, pH, Free CN)	TCLP					# of Bottles	Comments
1	A0299	MW1	2017/11/15	9:14	Soil		✓	✓		✓							5	
2	A0442	MW1	2017/11/15	9:14	Soil		✓	✓		✓							5	
3	A0300	MW1	2017/11/15	9:14	Soil						✓						1	
4	A0441	MW1	2017/11/15	9:14	Soil						✓						1	
5	A0432	MW4	2017/11/16	10:00	Soil						✓						1	
6	A0435	MW4	2017/11/16	10:05	Soil		✓	✓		✓							5	
7	A0452	BH2	11	2:10	11		✓				✓						2	RECEIVED IN OTTAWA
8	A0456	BH2	11	2:19	11			✓		✓							4	
9	A0522	TCLP	11									✓					2	
10	A0565		11						✓								1	ON Ice

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
[signature]	17/11/17	3:30	[signature]	2017/11/17	15:30	
			Paramjit Singh	2017/11/18	07:57	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	4, 4, 3	Present		
		Intact	X	

White: Maxxam Yellow: Client

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

5|6|5

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6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.maxxam.ca

CHAIN OF CUSTODY RECORD

Page 1 of 2

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#14134 AEL Environment	Company Name:		Quotation #:	B71396	Maxxam Job #:	Bottle Order #:
Attention:	Accounting	Attention:	Reporting group	P.O. #:			626936
Address:	1705 Argentia Rd Unit 3	Address:		Project:	~~10521~~ 10869	COC #:	Project Manager:
	Mississauga ON L5N 3A9			Project Name:			
Tel:	(416) 657-2367 x Fax: (416) 647-2367 x	Tel:	Fax:	Site #:		C#626936-04-01	Antonella Brasil
Email:	twilson@aelenv.com	Email:	lab@aeraegmond.com	Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☐ Res/Park ☐ Medium/Fine
- ☐ Table 2 ☒ Ind/Comm ☐ Coarse
- ☒ Table 3 ☐ Agri/Other ☒ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558 ☐ Storm Sewer Bylaw
- ☐ MISA Municipality _____
- ☐ PWQO
- ☐ Other _____

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? _____

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: _____ Time Required: _____ ☐
Rush Confirmation Number: _____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 Petroleum Hydrocarbons (Soil) F1-F4+BTEX	O.Reg 153 Metals & Inorganics Pkg (Soil)	VOCs	PAH						# of Bottles	Comments
1	A0462	BH3	2017/11/16	1:20	SOIL		✓		✓							4	
2	A0459	BH3	"	1:15	SOIL			✓		✓						2	
3	A0466	BH5	"	3:15	SOIL			✓	✓	✓						2	
4	A0469	BH5	"	3:25	SOIL		✓		✓							4	
5					SOIL												
6																	
7																	
8																	RECEIVED IN OTTAWA
9																	
10																	ON ICE

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
[signature]	17/11/17	3:30	[signature] Project MARAMS Diana	2017/11/18	15:30	
				2017/11/18	07:37	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	4|4|3	Present		
		Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

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** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

White: Maxxa Yellow: Client

5|6|5

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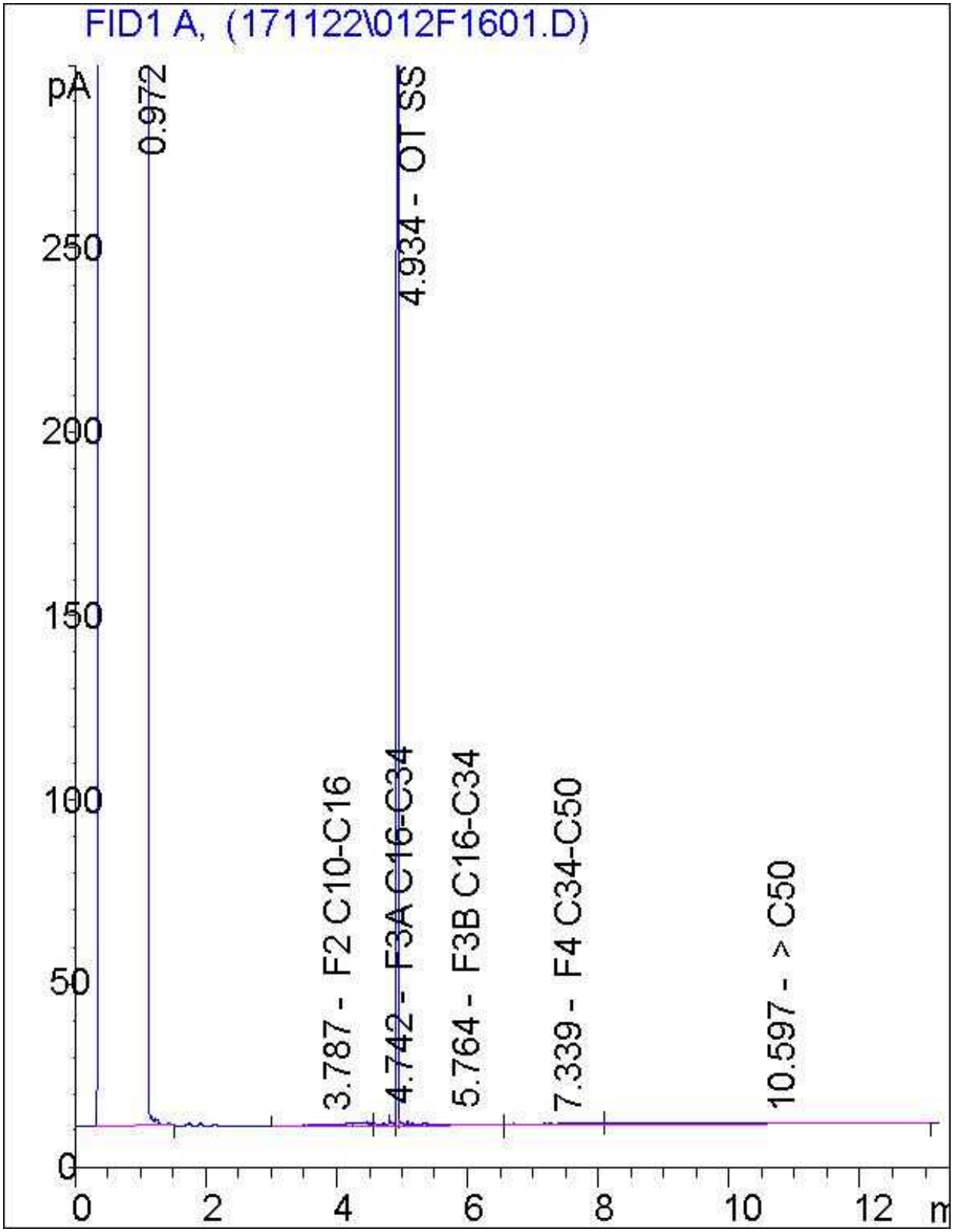
Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

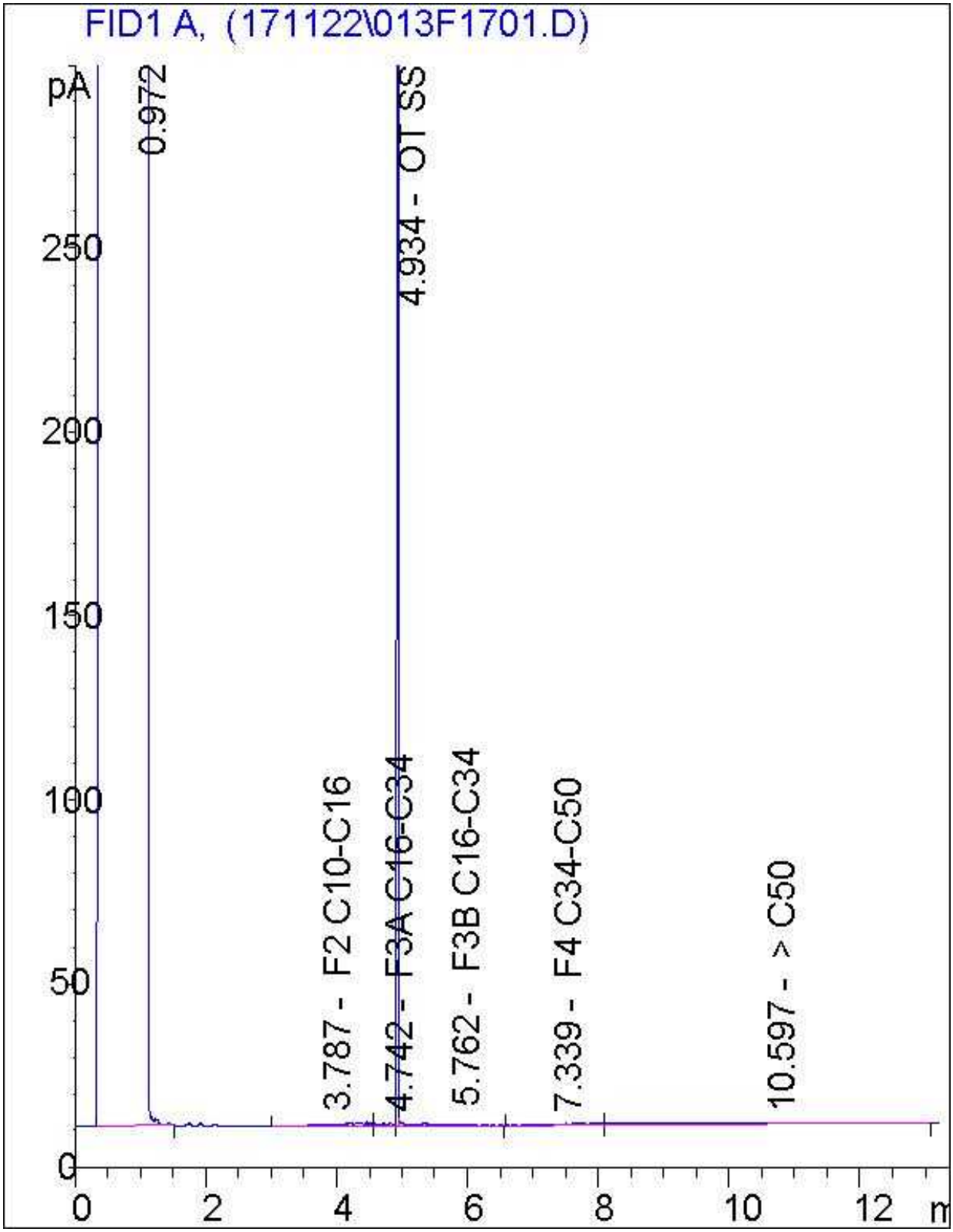


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B7Q0135
Report Date: 2017/11/24
Maxxam Sample: FOU262

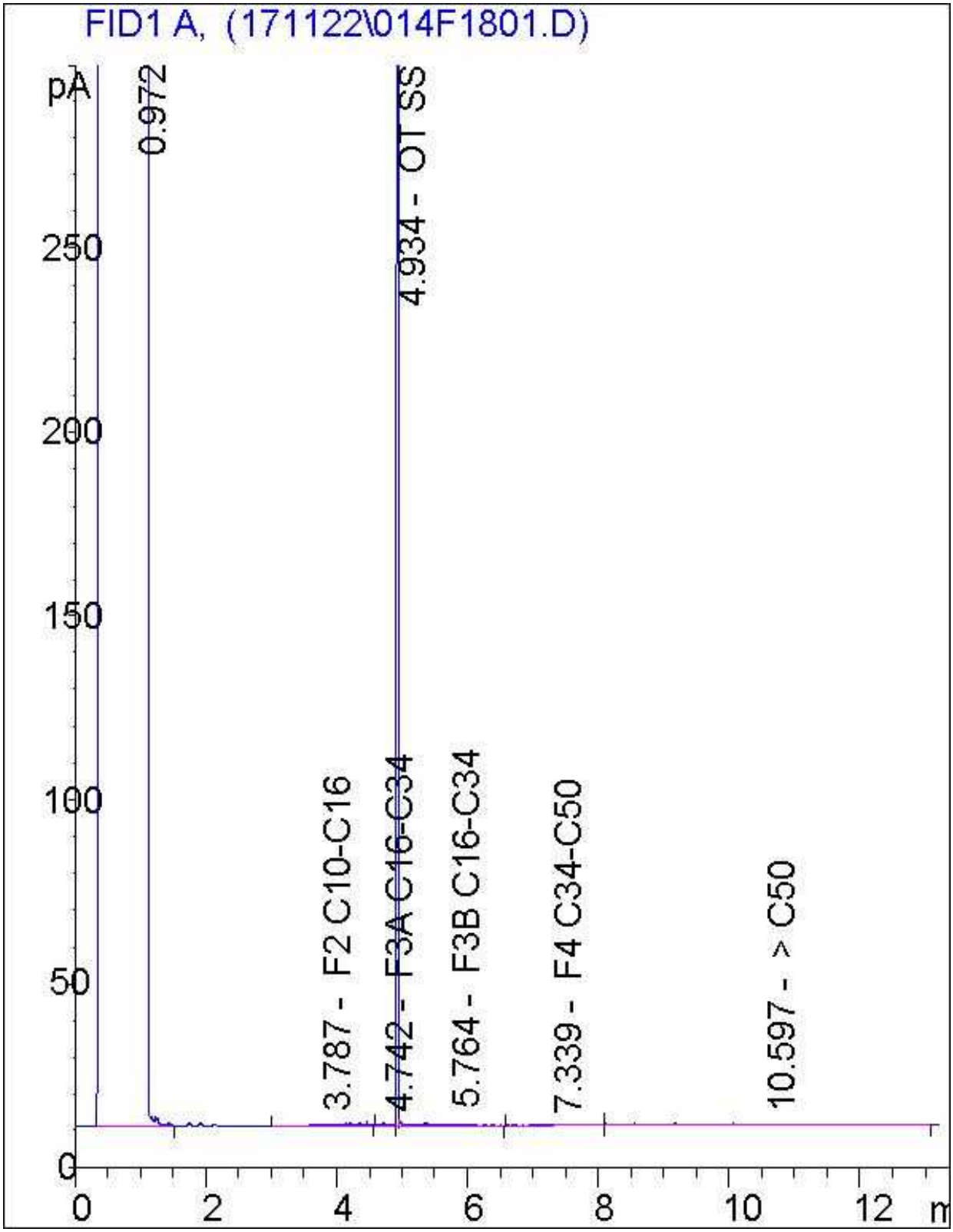
AEL Environment
Client Project #: 10869
Client ID: A0442 MW1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

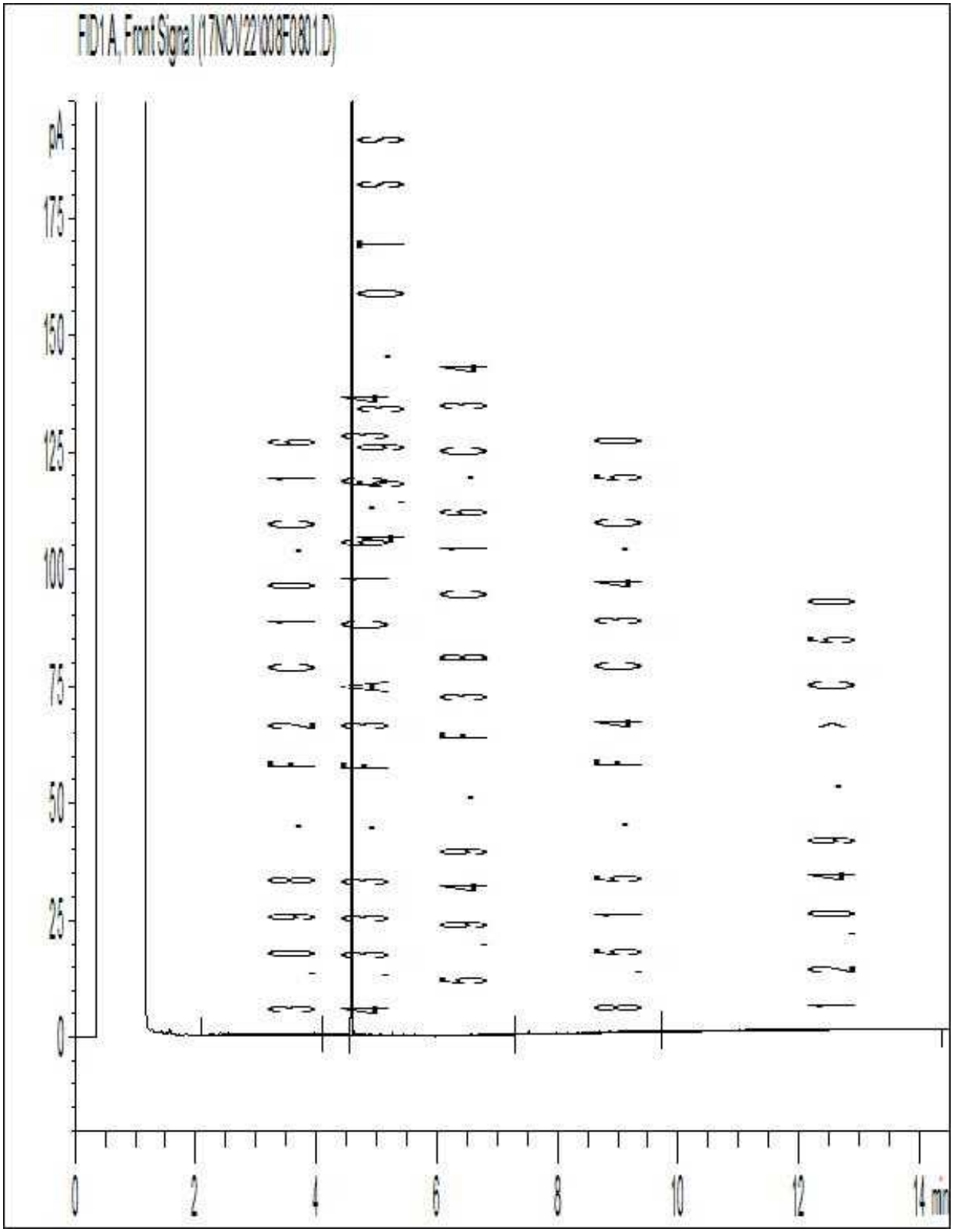


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B7Q0135
Report Date: 2017/11/24
Maxxam Sample: FOU268

AEL Environment
Client Project #: 10869
Client ID: A0456 BH2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

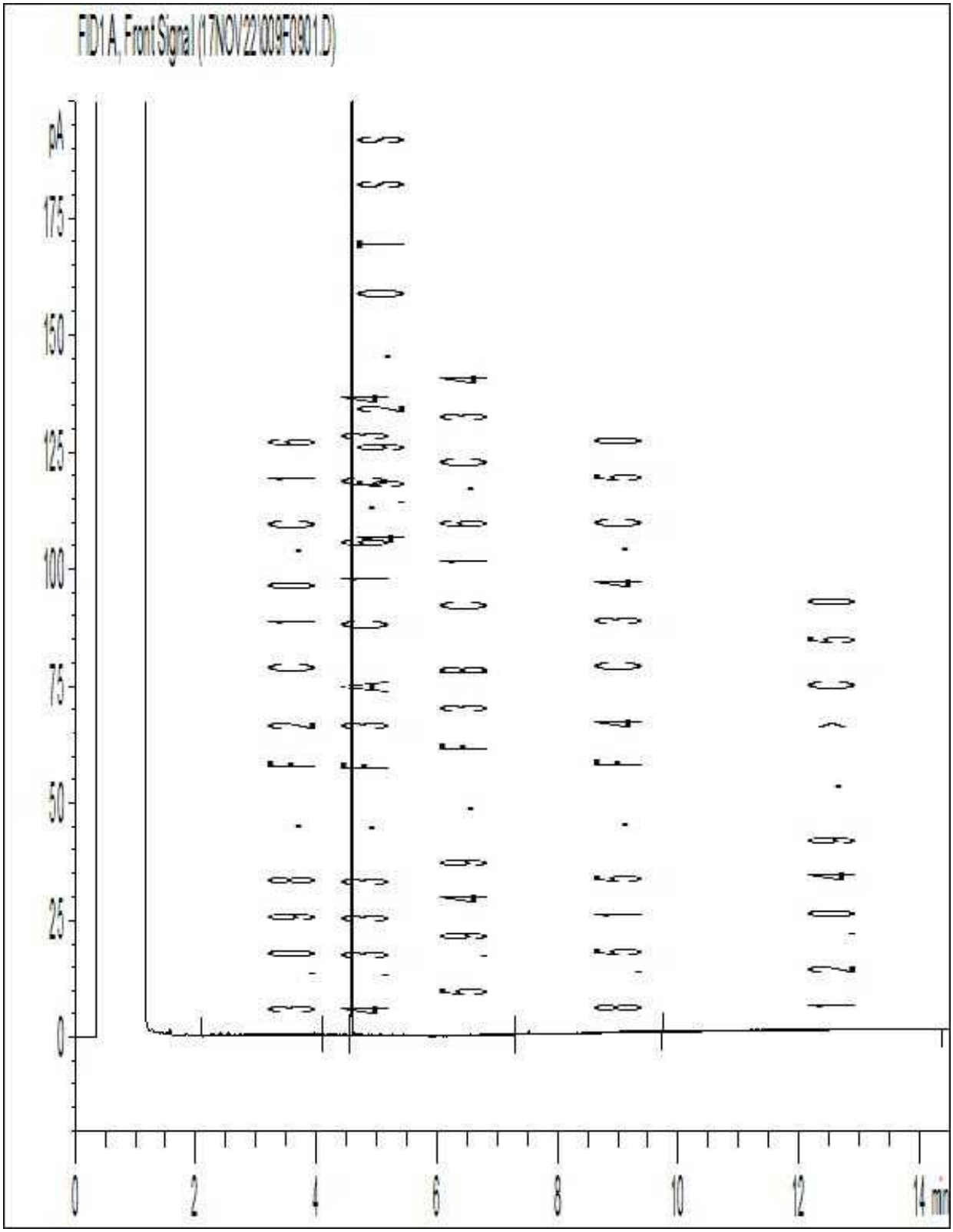


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B7Q0135
Report Date: 2017/11/24
Maxxam Sample: FOU271

AEL Environment
Client Project #: 10869
Client ID: A0462 BH3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

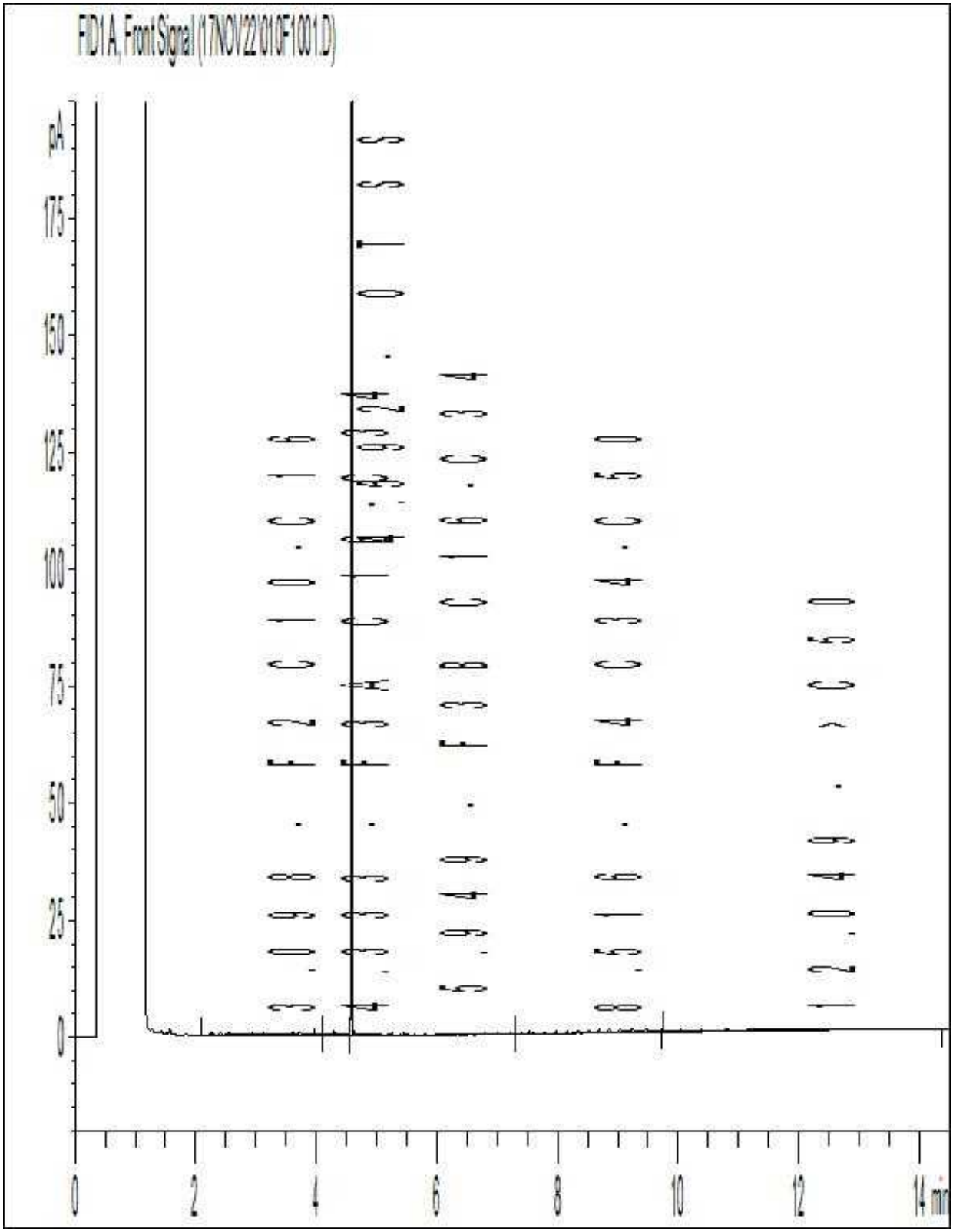


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B7Q0135
Report Date: 2017/11/24
Maxxam Sample: FOU274

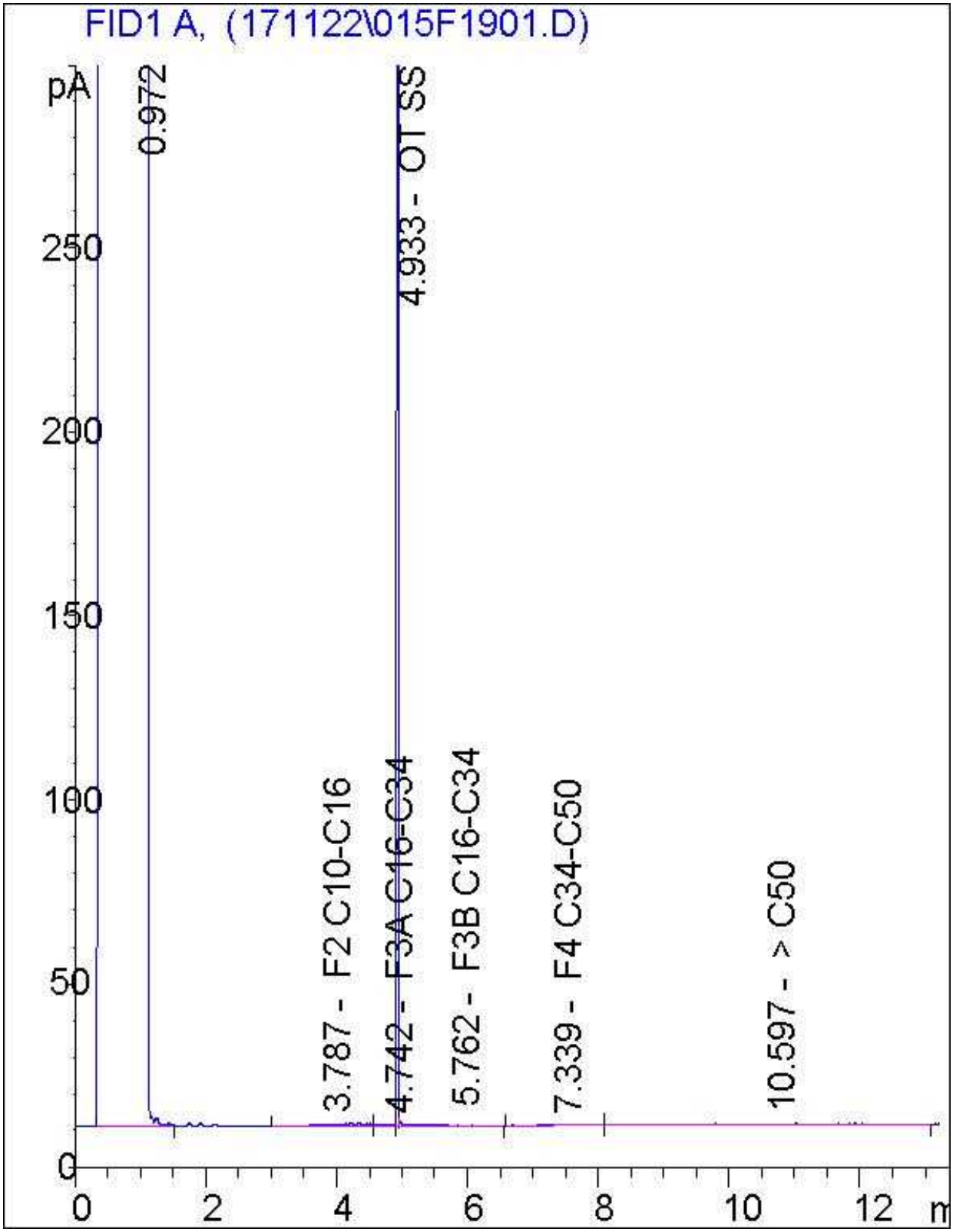
AEL Environment
Client Project #: 10869
Client ID: A0469 BH5

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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A Bureau Veritas Group Company

Your Project #: 10869
Your C.O.C. #: 638032-01-01

Attention:Reporting Group

AEL Environment
1705 Argentia Rd
Unit 3
Mississauga, ON
CANADA L5N 3A9

Report Date: 2017/11/24
Report #: R4874676
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7Q0656
Received: 2017/11/17, 15:30

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	4	N/A	2017/11/23	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	1	N/A	2017/11/23		EPA 8260C m
Chloride by Automated Colourimetry	4	N/A	2017/11/22	CAM SOP-00463	EPA 325.2 m
Chromium (VI) in Water	4	N/A	2017/11/23	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide	3	N/A	2017/11/22	CAM SOP-00457	OMOE E3015 m
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	3	2017/11/20	2017/11/21	OTT SOP-00001	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	1	2017/11/21	2017/11/21	OTT SOP-00001	CCME Hydrocarbons
Mercury	4	2017/11/22	2017/11/23	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	4	N/A	2017/11/23	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM) (1)	4	2017/11/21	2017/11/22	OTT SOP-00011	EPA 8270D m
Volatile Organic Compounds and F1 PHCs	4	N/A	2017/11/22	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Water	1	N/A	2017/11/22	CAM SOP-00228	EPA 8260C m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Your Project #: 10869
Your C.O.C. #: 638032-01-01

Attention:Reporting Group

AEL Environment
1705 Argentia Rd
Unit 3
Mississauga, ON
CANADA L5N 3A9

Report Date: 2017/11/24
Report #: R4874676
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7Q0656

Received: 2017/11/17, 15:30

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Ottawa
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		FOX969	FOX970	FOX971	FOX972			
Sampling Date		2017/11/17 14:10	2017/11/17 12:15	2017/11/17 12:15	2017/11/17 10:35			
COC Number		638032-01-01	638032-01-01	638032-01-01	638032-01-01			
	UNITS	A0564/MW4	A0562/MW1	A0563/MW1	A0561/MW6	RDL	MDL	QC Batch
Volatile Organics								
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	10	1.0	5276809
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.020	5276809
Bromodichloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
Bromoform	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	0.10	5276809
Bromomethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.10	5276809
Carbon Tetrachloride	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.050	5276809
Chlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.010	5276809
Chloroform	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.050	5276809
Dibromochloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	0.050	5276809
1,1-Dichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.050	5276809
1,2-Dichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.020	5276809
1,1-Dichloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.050	5276809
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
1,2-Dichloropropane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.050	5276809
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	<0.30	<0.30	0.30	0.050	5276809
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	0.050	5276809
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.010	5276809
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.050	5276809
Hexane	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	0.10	5276809
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	0.10	5276809
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	<10	<10	<10	10	0.50	5276809
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	0.10	5276809
Methyl t-butyl ether (MTBE)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
Styrene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809
Tetrachloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.050	5276809
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.010	5276809
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.050	5276809
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.050	5276809

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		FOX969	FOX970	FOX971	FOX972			
Sampling Date		2017/11/17 14:10	2017/11/17 12:15	2017/11/17 12:15	2017/11/17 10:35			
COC Number		638032-01-01	638032-01-01	638032-01-01	638032-01-01			
	UNITS	A0564/MW4	A0562/MW1	A0563/MW1	A0561/MW6	RDL	MDL	QC Batch
Trichloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.050	5276809
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	0.10	5276809
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.050	5276809
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.010	5276809
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.010	5276809
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	0.010	5276809
F1 (C6-C10)	ug/L	<25	<25	<25	<25	25	N/A	5276809
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	25	N/A	5276809
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	97	98	96	97			5276809
D4-1,2-Dichloroethane	%	104	105	106	103			5276809
D8-Toluene	%	99	100	99	99			5276809

RDL = Reportable Detection Limit
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N/A = Not Applicable

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		FOX969	FOX969	FOX970	FOX971	FOX972			
Sampling Date		2017/11/17 14:10	2017/11/17 14:10	2017/11/17 12:15	2017/11/17 12:15	2017/11/17 10:35			
COC Number		638032-01-01	638032-01-01	638032-01-01	638032-01-01	638032-01-01			
	UNITS	A0564/MW4	A0564/MW4 Lab-Dup	A0562/MW1	A0563/MW1	A0561/MW6	RDL	MDL	QC Batch
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	<100	100	N/A	5276044
F3 (C16-C34 Hydrocarbons)	ug/L	<200	380	250	<200	330	200	N/A	5276044
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	200	N/A	5276044
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	Yes			5276044
Surrogate Recovery (%)									
o-Terphenyl	%	94	90	92	92	96			5276044

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

O.REG 153 METALS & INORGANICS PKG (WTR)

Maxxam ID		FOX969				FOX969			
Sampling Date		2017/11/17 14:10				2017/11/17 14:10			
COC Number		638032-01-01				638032-01-01			
	UNITS	A0564/MW4	RDL	MDL	QC Batch	A0564/MW4 Lab-Dup	RDL	MDL	QC Batch
Inorganics									
WAD Cyanide (Free)	ug/L	<1	1	0.4	5278237				
Dissolved Chloride (Cl)	mg/L	170	2.0	0.60	5277623				
Metals									
Chromium (VI)	ug/L	<0.50	0.50	0.30	5280865	<0.50	0.50	0.30	5280865
Mercury (Hg)	ug/L	<0.1	0.1	0.02	5279185				
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	0.50	5278800				
Dissolved Arsenic (As)	ug/L	<1.0	1.0	1.0	5278800				
Dissolved Barium (Ba)	ug/L	120	2.0	2.0	5278800				
Dissolved Beryllium (Be)	ug/L	<0.50	0.50	0.50	5278800				
Dissolved Boron (B)	ug/L	27	10	10	5278800				
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	0.10	5278800				
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	5.0	5278800				
Dissolved Cobalt (Co)	ug/L	0.78	0.50	0.50	5278800				
Dissolved Copper (Cu)	ug/L	2.7	1.0	1.0	5278800				
Dissolved Lead (Pb)	ug/L	<0.50	0.50	0.50	5278800				
Dissolved Molybdenum (Mo)	ug/L	2.9	0.50	0.50	5278800				
Dissolved Nickel (Ni)	ug/L	2.1	1.0	1.0	5278800				
Dissolved Selenium (Se)	ug/L	<2.0	2.0	2.0	5278800				
Dissolved Silver (Ag)	ug/L	<0.10	0.10	0.10	5278800				
Dissolved Sodium (Na)	ug/L	140000	100	100	5278800				
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	0.050	5278800				
Dissolved Uranium (U)	ug/L	2.3	0.10	0.10	5278800				
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	5278800				
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	5.0	5278800				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

O.REG 153 METALS & INORGANICS PKG (WTR)

Maxxam ID		FOX970				FOX970			
Sampling Date		2017/11/17 12:15				2017/11/17 12:15			
COC Number		638032-01-01				638032-01-01			
	UNITS	A0562/MW1	RDL	MDL	QC Batch	A0562/MW1 Lab-Dup	RDL	MDL	QC Batch
Inorganics									
WAD Cyanide (Free)	ug/L	3	1	0.4	5278237				
Dissolved Chloride (Cl)	mg/L	2700	30	9.0	5277623				
Metals									
Chromium (VI)	ug/L	<0.50	0.50	0.30	5280865				
Mercury (Hg)	ug/L	<0.1	0.1	0.02	5279185				
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	0.50	5278800	<0.50	0.50	0.50	5278800
Dissolved Arsenic (As)	ug/L	<1.0	1.0	1.0	5278800	<1.0	1.0	1.0	5278800
Dissolved Barium (Ba)	ug/L	310	2.0	2.0	5278800	310	2.0	2.0	5278800
Dissolved Beryllium (Be)	ug/L	<0.50	0.50	0.50	5278800	<0.50	0.50	0.50	5278800
Dissolved Boron (B)	ug/L	40	10	10	5278800	39	10	10	5278800
Dissolved Cadmium (Cd)	ug/L	0.16	0.10	0.10	5278800	0.22	0.10	0.10	5278800
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	5.0	5278800	<5.0	5.0	5.0	5278800
Dissolved Cobalt (Co)	ug/L	2.6	0.50	0.50	5278800	2.7	0.50	0.50	5278800
Dissolved Copper (Cu)	ug/L	7.5	1.0	1.0	5278800	7.8	1.0	1.0	5278800
Dissolved Lead (Pb)	ug/L	<0.50	0.50	0.50	5278800	<0.50	0.50	0.50	5278800
Dissolved Molybdenum (Mo)	ug/L	6.1	0.50	0.50	5278800	5.8	0.50	0.50	5278800
Dissolved Nickel (Ni)	ug/L	4.8	1.0	1.0	5278800	4.8	1.0	1.0	5278800
Dissolved Selenium (Se)	ug/L	<2.0	2.0	2.0	5278800	<2.0	2.0	2.0	5278800
Dissolved Silver (Ag)	ug/L	<0.10	0.10	0.10	5278800	<0.10	0.10	0.10	5278800
Dissolved Sodium (Na)	ug/L	1700000	500	500	5278800	1600000	500	500	5278800
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	0.050	5278800	<0.050	0.050	0.050	5278800
Dissolved Uranium (U)	ug/L	3.1	0.10	0.10	5278800	3.0	0.10	0.10	5278800
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	5278800	<0.50	0.50	0.50	5278800
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	5.0	5278800	<5.0	5.0	5.0	5278800

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

O.REG 153 METALS & INORGANICS PKG (WTR)

Maxxam ID		FOX971				FOX972			
Sampling Date		2017/11/17 12:15				2017/11/17 10:35			
COC Number		638032-01-01				638032-01-01			
	UNITS	A0563/MW1	RDL	MDL	QC Batch	A0561/MW6	RDL	MDL	QC Batch
Inorganics									
WAD Cyanide (Free)	ug/L					<1	1	0.4	5278237
Dissolved Chloride (Cl)	mg/L	2700	30	9.0	5277623	180	2.0	0.60	5277623
Metals									
Chromium (VI)	ug/L	<0.50	0.50	0.30	5280865	<0.50	0.50	0.30	5280865
Mercury (Hg)	ug/L	<0.1	0.1	0.02	5279185	<0.1	0.1	0.02	5279185
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	0.50	5278800	1.1	0.50	0.50	5278800
Dissolved Arsenic (As)	ug/L	<1.0	1.0	1.0	5278800	<1.0	1.0	1.0	5278800
Dissolved Barium (Ba)	ug/L	310	2.0	2.0	5278800	150	2.0	2.0	5278800
Dissolved Beryllium (Be)	ug/L	<0.50	0.50	0.50	5278800	<0.50	0.50	0.50	5278800
Dissolved Boron (B)	ug/L	40	10	10	5278800	47	10	10	5278800
Dissolved Cadmium (Cd)	ug/L	0.21	0.10	0.10	5278800	<0.10	0.10	0.10	5278800
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	5.0	5278800	<5.0	5.0	5.0	5278800
Dissolved Cobalt (Co)	ug/L	2.6	0.50	0.50	5278800	4.5	0.50	0.50	5278800
Dissolved Copper (Cu)	ug/L	8.1	1.0	1.0	5278800	<1.0	1.0	1.0	5278800
Dissolved Lead (Pb)	ug/L	<0.50	0.50	0.50	5278800	<0.50	0.50	0.50	5278800
Dissolved Molybdenum (Mo)	ug/L	6.3	0.50	0.50	5278800	0.67	0.50	0.50	5278800
Dissolved Nickel (Ni)	ug/L	5.1	1.0	1.0	5278800	2.4	1.0	1.0	5278800
Dissolved Selenium (Se)	ug/L	<2.0	2.0	2.0	5278800	<2.0	2.0	2.0	5278800
Dissolved Silver (Ag)	ug/L	<0.10	0.10	0.10	5278800	<0.10	0.10	0.10	5278800
Dissolved Sodium (Na)	ug/L	1700000	500	500	5278800	110000	100	100	5278800
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	0.050	5278800	<0.050	0.050	0.050	5278800
Dissolved Uranium (U)	ug/L	3.0	0.10	0.10	5278800	0.27	0.10	0.10	5278800
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	5278800	1.9	0.50	0.50	5278800
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	5.0	5278800	<5.0	5.0	5.0	5278800

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 PAHS (WATER)

Maxxam ID		FOX969				FOX969			
Sampling Date		2017/11/17 14:10				2017/11/17 14:10			
COC Number		638032-01-01				638032-01-01			
	UNITS	A0564/MW4	RDL	MDL	QC Batch	A0564/MW4 Lab-Dup	RDL	MDL	QC Batch
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/L	<0.071	0.071	N/A	5274361				
Polyaromatic Hydrocarbons									
Acenaphthene	ug/L	<0.050	0.050	0.00040	5276041	<0.050	0.050	0.00040	5276041
Acenaphthylene	ug/L	<0.050	0.050	0.00030	5276041	<0.050	0.050	0.00030	5276041
Anthracene	ug/L	<0.050	0.050	0.0010	5276041	<0.050	0.050	0.0010	5276041
Benzo(a)anthracene	ug/L	<0.050	0.050	0.00040	5276041	<0.050	0.050	0.00040	5276041
Benzo(a)pyrene	ug/L	<0.010	0.010	0.00030	5276041	<0.010	0.010	0.00030	5276041
Benzo(b/j)fluoranthene	ug/L	<0.050	0.050	0.00060	5276041	<0.050	0.050	0.00060	5276041
Benzo(g,h,i)perylene	ug/L	<0.050	0.050	0.0010	5276041	<0.050	0.050	0.0010	5276041
Benzo(k)fluoranthene	ug/L	<0.050	0.050	0.00050	5276041	<0.050	0.050	0.00050	5276041
Chrysene	ug/L	<0.050	0.050	0.00040	5276041	<0.050	0.050	0.00040	5276041
Dibenz(a,h)anthracene	ug/L	<0.050	0.050	0.00090	5276041	<0.050	0.050	0.00090	5276041
Fluoranthene	ug/L	<0.050	0.050	0.00060	5276041	<0.050	0.050	0.00060	5276041
Fluorene	ug/L	<0.050	0.050	0.00050	5276041	<0.050	0.050	0.00050	5276041
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	0.050	0.00070	5276041	<0.050	0.050	0.00070	5276041
1-Methylnaphthalene	ug/L	<0.050	0.050	0.00040	5276041	<0.050	0.050	0.00040	5276041
2-Methylnaphthalene	ug/L	<0.050	0.050	0.00040	5276041	<0.050	0.050	0.00040	5276041
Naphthalene	ug/L	<0.050	0.050	0.00040	5276041	<0.050	0.050	0.00040	5276041
Phenanthrene	ug/L	<0.030	0.030	0.00060	5276041	<0.030	0.030	0.00060	5276041
Pyrene	ug/L	<0.050	0.050	0.00060	5276041	<0.050	0.050	0.00060	5276041
Surrogate Recovery (%)									
D10-Anthracene	%	97			5276041	104			5276041
D14-Terphenyl (FS)	%	100			5276041	104			5276041
D8-Acenaphthylene	%	103			5276041	100			5276041

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Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

O.REG 153 PAHS (WATER)

Maxxam ID		FOX970	FOX971	FOX972			
Sampling Date		2017/11/17 12:15	2017/11/17 12:15	2017/11/17 10:35			
COC Number		638032-01-01	638032-01-01	638032-01-01			
	UNITS	A0562/MW1	A0563/MW1	A0561/MW6	RDL	MDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	<0.071	<0.071	<0.071	0.071	N/A	5274361
Polyaromatic Hydrocarbons							
Acenaphthene	ug/L	<0.050	<0.050	<0.050	0.050	0.00040	5276041
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	0.050	0.00030	5276041
Anthracene	ug/L	<0.050	<0.050	<0.050	0.050	0.0010	5276041
Benzo(a)anthracene	ug/L	<0.050	<0.050	<0.050	0.050	0.00040	5276041
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	0.010	0.00030	5276041
Benzo(b/j)fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050	0.00060	5276041
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	0.050	0.0010	5276041
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050	0.00050	5276041
Chrysene	ug/L	<0.050	<0.050	<0.050	0.050	0.00040	5276041
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	0.050	0.00090	5276041
Fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050	0.00060	5276041
Fluorene	ug/L	<0.050	<0.050	<0.050	0.050	0.00050	5276041
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	0.050	0.00070	5276041
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.050	0.00040	5276041
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.050	0.00040	5276041
Naphthalene	ug/L	<0.050	<0.050	<0.050	0.050	0.00040	5276041
Phenanthrene	ug/L	<0.030	<0.030	<0.030	0.030	0.00060	5276041
Pyrene	ug/L	<0.050	<0.050	<0.050	0.050	0.00060	5276041
Surrogate Recovery (%)							
D10-Anthracene	%	99	100	97			5276041
D14-Terphenyl (FS)	%	101	105	99			5276041
D8-Acenaphthylene	%	103	104	98			5276041

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

O.REG 153 VOCS BY HS (WATER)

Maxxam ID		FOX973			
Sampling Date		2017/10/16			
COC Number		638032-01-01			
	UNITS	TRIP BLANK LOT #3464	RDL	MDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	0.50	0.50	5274233
Volatile Organics					
Acetone (2-Propanone)	ug/L	<10	10	1.0	5276175
Benzene	ug/L	<0.20	0.20	0.020	5276175
Bromodichloromethane	ug/L	<0.50	0.50	0.050	5276175
Bromoform	ug/L	<1.0	1.0	0.10	5276175
Bromomethane	ug/L	<0.50	0.50	0.10	5276175
Carbon Tetrachloride	ug/L	<0.20	0.20	0.050	5276175
Chlorobenzene	ug/L	<0.20	0.20	0.010	5276175
Chloroform	ug/L	<0.20	0.20	0.050	5276175
Dibromochloromethane	ug/L	<0.50	0.50	0.050	5276175
1,2-Dichlorobenzene	ug/L	<0.50	0.50	0.050	5276175
1,3-Dichlorobenzene	ug/L	<0.50	0.50	0.050	5276175
1,4-Dichlorobenzene	ug/L	<0.50	0.50	0.050	5276175
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	1.0	0.050	5276175
1,1-Dichloroethane	ug/L	<0.20	0.20	0.050	5276175
1,2-Dichloroethane	ug/L	<0.50	0.50	0.020	5276175
1,1-Dichloroethylene	ug/L	<0.20	0.20	0.050	5276175
cis-1,2-Dichloroethylene	ug/L	<0.50	0.50	0.050	5276175
trans-1,2-Dichloroethylene	ug/L	<0.50	0.50	0.050	5276175
1,2-Dichloropropane	ug/L	<0.20	0.20	0.050	5276175
cis-1,3-Dichloropropene	ug/L	<0.30	0.30	0.050	5276175
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	0.050	5276175
Ethylbenzene	ug/L	<0.20	0.20	0.010	5276175
Ethylene Dibromide	ug/L	<0.20	0.20	0.050	5276175
Hexane	ug/L	<1.0	1.0	0.10	5276175
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	0.10	5276175
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	10	0.50	5276175
Methyl Isobutyl Ketone	ug/L	<5.0	5.0	0.10	5276175
Methyl t-butyl ether (MTBE)	ug/L	<0.50	0.50	0.050	5276175
Styrene	ug/L	<0.50	0.50	0.050	5276175
1,1,1,2-Tetrachloroethane	ug/L	<0.50	0.50	0.050	5276175
1,1,2,2-Tetrachloroethane	ug/L	<0.50	0.50	0.050	5276175
Tetrachloroethylene	ug/L	<0.20	0.20	0.050	5276175
Toluene	ug/L	<0.20	0.20	0.010	5276175

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

O.REG 153 VOCS BY HS (WATER)

Maxxam ID		FOX973			
Sampling Date		2017/10/16			
COC Number		638032-01-01			
	UNITS	TRIP BLANK LOT #3464	RDL	MDL	QC Batch
1,1,1-Trichloroethane	ug/L	<0.20	0.20	0.050	5276175
1,1,2-Trichloroethane	ug/L	<0.50	0.50	0.050	5276175
Trichloroethylene	ug/L	<0.20	0.20	0.050	5276175
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	0.50	0.10	5276175
Vinyl Chloride	ug/L	<0.20	0.20	0.050	5276175
p+m-Xylene	ug/L	<0.20	0.20	0.010	5276175
o-Xylene	ug/L	<0.20	0.20	0.010	5276175
Total Xylenes	ug/L	<0.20	0.20	0.010	5276175
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	73			5276175
D4-1,2-Dichloroethane	%	113			5276175
D8-Toluene	%	89			5276175

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

TEST SUMMARY

Maxxam ID: FOX969
Sample ID: A0564/MW4
Matrix: Water

Collected: 2017/11/17
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274361	N/A	2017/11/23	Liliana Gaburici
Chloride by Automated Colourimetry	KONE	5277623	N/A	2017/11/22	Deonarine Ramnarine
Chromium (VI) in Water	IC	5280865	N/A	2017/11/23	Lang Le
Free (WAD) Cyanide	SKAL/CN	5278237	N/A	2017/11/22	Xuanhong Qiu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5276044	2017/11/20	2017/11/21	Arezoo Habibagahi
Mercury	CV/AA	5279185	2017/11/22	2017/11/23	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5278800	N/A	2017/11/23	Thao Nguyen
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5276041	2017/11/21	2017/11/22	Liliana Gaburici
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5276809	N/A	2017/11/22	Manpreet Sarao

Maxxam ID: FOX969 Dup
Sample ID: A0564/MW4
Matrix: Water

Collected: 2017/11/17
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	5280865	N/A	2017/11/23	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5276044	2017/11/21	2017/11/21	Arezoo Habibagahi
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5276041	2017/11/21	2017/11/22	Liliana Gaburici

Maxxam ID: FOX970
Sample ID: A0562/MW1
Matrix: Water

Collected: 2017/11/17
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274361	N/A	2017/11/23	Liliana Gaburici
Chloride by Automated Colourimetry	KONE	5277623	N/A	2017/11/22	Deonarine Ramnarine
Chromium (VI) in Water	IC	5280865	N/A	2017/11/23	Lang Le
Free (WAD) Cyanide	SKAL/CN	5278237	N/A	2017/11/22	Xuanhong Qiu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5276044	2017/11/20	2017/11/21	Arezoo Habibagahi
Mercury	CV/AA	5279185	2017/11/22	2017/11/23	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5278800	N/A	2017/11/23	Thao Nguyen
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5276041	2017/11/21	2017/11/22	Liliana Gaburici
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5276809	N/A	2017/11/22	Manpreet Sarao

Maxxam ID: FOX970 Dup
Sample ID: A0562/MW1
Matrix: Water

Collected: 2017/11/17
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	5278800	N/A	2017/11/23	Thao Nguyen

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

TEST SUMMARY

Maxxam ID: FOX971
Sample ID: A0563/MW1
Matrix: Water

Collected: 2017/11/17
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274361	N/A	2017/11/23	Liliana Gaburici
Chloride by Automated Colourimetry	KONE	5277623	N/A	2017/11/22	Deonarine Ramnarine
Chromium (VI) in Water	IC	5280865	N/A	2017/11/23	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5276044	2017/11/20	2017/11/21	Arezoo Habibagahi
Mercury	CV/AA	5279185	2017/11/22	2017/11/23	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5278800	N/A	2017/11/23	Thao Nguyen
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5276041	2017/11/21	2017/11/22	Liliana Gaburici
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5276809	N/A	2017/11/22	Manpreet Sarao

Maxxam ID: FOX972
Sample ID: A0561/MW6
Matrix: Water

Collected: 2017/11/17
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	5274361	N/A	2017/11/23	Liliana Gaburici
Chloride by Automated Colourimetry	KONE	5277623	N/A	2017/11/22	Deonarine Ramnarine
Chromium (VI) in Water	IC	5280865	N/A	2017/11/23	Lang Le
Free (WAD) Cyanide	SKAL/CN	5278237	N/A	2017/11/22	Xuanhong Qiu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5276044	2017/11/21	2017/11/21	Arezoo Habibagahi
Mercury	CV/AA	5279185	2017/11/22	2017/11/23	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5278800	N/A	2017/11/23	Thao Nguyen
PAH Compounds in Water by GC/MS (SIM)	GC/MS	5276041	2017/11/21	2017/11/22	Liliana Gaburici
Volatile Organic Compounds and F1 PHCs	GC/MSFD	5276809	N/A	2017/11/22	Manpreet Sarao

Maxxam ID: FOX973
Sample ID: TRIP BLANK LOT #3464
Matrix: Water

Collected: 2017/10/16
Shipped:
Received: 2017/11/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	5274233	N/A	2017/11/23	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	5276175	N/A	2017/11/22	Blair Gannon

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C

1 of 3 40mL vials for VOC analysis contained visible sediment for sample A0561/MW6

Sample FOX969 [A0564/MW4] : F2-F4 Analysis: Duplicate results exceeded RPD acceptance criteria for flagged analytes. This is likely due to sample heterogeneity.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5276041	LGA	Matrix Spike [FOX970-03]	D10-Anthracene	2017/11/22		106	%	50 - 130
			D14-Terphenyl (FS)	2017/11/22		111	%	50 - 130
			D8-Acenaphthylene	2017/11/22		116	%	50 - 130
			Acenaphthene	2017/11/22		99	%	50 - 130
			Acenaphthylene	2017/11/22		107	%	50 - 130
			Anthracene	2017/11/22		93	%	50 - 130
			Benzo(a)anthracene	2017/11/22		106	%	50 - 130
			Benzo(a)pyrene	2017/11/22		95	%	50 - 130
			Benzo(b/j)fluoranthene	2017/11/22		89	%	50 - 130
			Benzo(g,h,i)perylene	2017/11/22		90	%	50 - 130
			Benzo(k)fluoranthene	2017/11/22		93	%	50 - 130
			Chrysene	2017/11/22		107	%	50 - 130
			Dibenz(a,h)anthracene	2017/11/22		82	%	50 - 130
			Fluoranthene	2017/11/22		110	%	50 - 130
			Fluorene	2017/11/22		114	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2017/11/22		105	%	50 - 130
			1-Methylnaphthalene	2017/11/22		102	%	50 - 130
			2-Methylnaphthalene	2017/11/22		105	%	50 - 130
			Naphthalene	2017/11/22		72	%	50 - 130
			Phenanthrene	2017/11/22		88	%	50 - 130
			Pyrene	2017/11/22		100	%	50 - 130
5276041	LGA	Spiked Blank	D10-Anthracene	2017/11/22		103	%	50 - 130
			D14-Terphenyl (FS)	2017/11/22		109	%	50 - 130
			D8-Acenaphthylene	2017/11/22		109	%	50 - 130
			Acenaphthene	2017/11/22		100	%	50 - 130
			Acenaphthylene	2017/11/22		106	%	50 - 130
			Anthracene	2017/11/22		92	%	50 - 130
			Benzo(a)anthracene	2017/11/22		100	%	50 - 130
			Benzo(a)pyrene	2017/11/22		97	%	50 - 130
			Benzo(b/j)fluoranthene	2017/11/22		93	%	50 - 130
			Benzo(g,h,i)perylene	2017/11/22		78	%	50 - 130
			Benzo(k)fluoranthene	2017/11/22		102	%	50 - 130
			Chrysene	2017/11/22		102	%	50 - 130
			Dibenz(a,h)anthracene	2017/11/22		83	%	50 - 130
			Fluoranthene	2017/11/22		104	%	50 - 130
			Fluorene	2017/11/22		109	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2017/11/22		101	%	50 - 130
			1-Methylnaphthalene	2017/11/22		101	%	50 - 130
			2-Methylnaphthalene	2017/11/22		104	%	50 - 130
			Naphthalene	2017/11/22		75	%	50 - 130
			Phenanthrene	2017/11/22		87	%	50 - 130
			Pyrene	2017/11/22		95	%	50 - 130
5276041	LGA	Method Blank	D10-Anthracene	2017/11/22		102	%	50 - 130
			D14-Terphenyl (FS)	2017/11/22		101	%	50 - 130
			D8-Acenaphthylene	2017/11/22		103	%	50 - 130
			Acenaphthene	2017/11/22	<0.050		ug/L	
			Acenaphthylene	2017/11/22	<0.050		ug/L	
			Anthracene	2017/11/22	<0.050		ug/L	
			Benzo(a)anthracene	2017/11/22	<0.050		ug/L	
			Benzo(a)pyrene	2017/11/22	<0.010		ug/L	
			Benzo(b/j)fluoranthene	2017/11/22	<0.050		ug/L	
			Benzo(g,h,i)perylene	2017/11/22	<0.050		ug/L	
			Benzo(k)fluoranthene	2017/11/22	<0.050		ug/L	
			Chrysene	2017/11/22	<0.050		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibenz(a,h)anthracene	2017/11/22	<0.050		ug/L	
			Fluoranthene	2017/11/22	<0.050		ug/L	
			Fluorene	2017/11/22	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/11/22	<0.050		ug/L	
			1-Methylnaphthalene	2017/11/22	<0.050		ug/L	
			2-Methylnaphthalene	2017/11/22	<0.050		ug/L	
			Naphthalene	2017/11/22	<0.050		ug/L	
			Phenanthrene	2017/11/22	<0.030		ug/L	
			Pyrene	2017/11/22	<0.050		ug/L	
5276041	LGA	RPD [FOX969-03]	Acenaphthene	2017/11/22	NC		%	30
			Acenaphthylene	2017/11/22	NC		%	30
			Anthracene	2017/11/22	NC		%	30
			Benzo(a)anthracene	2017/11/22	NC		%	30
			Benzo(a)pyrene	2017/11/22	NC		%	30
			Benzo(b/j)fluoranthene	2017/11/22	NC		%	30
			Benzo(g,h,i)perylene	2017/11/22	NC		%	30
			Benzo(k)fluoranthene	2017/11/22	NC		%	30
			Chrysene	2017/11/22	NC		%	30
			Dibenz(a,h)anthracene	2017/11/22	NC		%	30
			Fluoranthene	2017/11/22	NC		%	30
			Fluorene	2017/11/22	NC		%	30
			Indeno(1,2,3-cd)pyrene	2017/11/22	NC		%	30
			1-Methylnaphthalene	2017/11/22	NC		%	30
			2-Methylnaphthalene	2017/11/22	NC		%	30
			Naphthalene	2017/11/22	NC		%	30
			Phenanthrene	2017/11/22	NC		%	30
			Pyrene	2017/11/22	NC		%	30
5276044	AH1	Matrix Spike [FOX970-01]	o-Terphenyl	2017/11/21		94	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2017/11/21		88	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2017/11/21		88	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2017/11/21		88	%	50 - 130
5276044	AH1	Spiked Blank	o-Terphenyl	2017/11/21		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2017/11/21		90	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2017/11/21		90	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2017/11/21		90	%	80 - 120
5276044	AH1	Method Blank	o-Terphenyl	2017/11/21		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2017/11/21	<100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2017/11/21	<200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2017/11/21	<200		ug/L	
5276044	AH1	RPD [FOX969-01]	F2 (C10-C16 Hydrocarbons)	2017/11/21	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2017/11/21	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2017/11/21	NC		%	50
5276175	BG1	Matrix Spike	4-Bromofluorobenzene	2017/11/22		87	%	70 - 130
			D4-1,2-Dichloroethane	2017/11/22		106	%	70 - 130
			D8-Toluene	2017/11/22		106	%	70 - 130
			Acetone (2-Propanone)	2017/11/22		109	%	60 - 140
			Benzene	2017/11/22		113	%	70 - 130
			Bromodichloromethane	2017/11/22		99	%	70 - 130
			Bromoform	2017/11/22		106	%	70 - 130
			Bromomethane	2017/11/22		96	%	60 - 140
			Carbon Tetrachloride	2017/11/22		94	%	70 - 130
			Chlorobenzene	2017/11/22		97	%	70 - 130
			Chloroform	2017/11/22		101	%	70 - 130
			Dibromochloromethane	2017/11/22		103	%	70 - 130

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,2-Dichlorobenzene	2017/11/22		95	%	70 - 130
			1,3-Dichlorobenzene	2017/11/22		93	%	70 - 130
			1,4-Dichlorobenzene	2017/11/22		95	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2017/11/22		102	%	60 - 140
			1,1-Dichloroethane	2017/11/22		109	%	70 - 130
			1,2-Dichloroethane	2017/11/22		105	%	70 - 130
			1,1-Dichloroethylene	2017/11/22		109	%	70 - 130
			cis-1,2-Dichloroethylene	2017/11/22		101	%	70 - 130
			trans-1,2-Dichloroethylene	2017/11/22		105	%	70 - 130
			1,2-Dichloropropane	2017/11/22		102	%	70 - 130
			cis-1,3-Dichloropropene	2017/11/22		104	%	70 - 130
			trans-1,3-Dichloropropene	2017/11/22		110	%	70 - 130
			Ethylbenzene	2017/11/22		92	%	70 - 130
			Ethylene Dibromide	2017/11/22		107	%	70 - 130
			Hexane	2017/11/22		116	%	70 - 130
			Methylene Chloride(Dichloromethane)	2017/11/22		111	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22		114	%	60 - 140
			Methyl Isobutyl Ketone	2017/11/22		116	%	70 - 130
			Methyl t-butyl ether (MTBE)	2017/11/22		95	%	70 - 130
			Styrene	2017/11/22		97	%	70 - 130
			1,1,1,2-Tetrachloroethane	2017/11/22		104	%	70 - 130
			1,1,2,2-Tetrachloroethane	2017/11/22		109	%	70 - 130
			Tetrachloroethylene	2017/11/22		91	%	70 - 130
			Toluene	2017/11/22		95	%	70 - 130
			1,1,1-Trichloroethane	2017/11/22		96	%	70 - 130
			1,1,2-Trichloroethane	2017/11/22		107	%	70 - 130
			Trichloroethylene	2017/11/22		95	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2017/11/22		95	%	70 - 130
			Vinyl Chloride	2017/11/22		106	%	70 - 130
			p+m-Xylene	2017/11/22		100	%	70 - 130
			o-Xylene	2017/11/22		92	%	70 - 130
5276175	BG1	Spiked Blank	4-Bromofluorobenzene	2017/11/22		88	%	70 - 130
			D4-1,2-Dichloroethane	2017/11/22		122	%	70 - 130
			D8-Toluene	2017/11/22		106	%	70 - 130
			Acetone (2-Propanone)	2017/11/22		98	%	60 - 140
			Benzene	2017/11/22		112	%	70 - 130
			Bromodichloromethane	2017/11/22		96	%	70 - 130
			Bromoform	2017/11/22		100	%	70 - 130
			Bromomethane	2017/11/22		104	%	60 - 140
			Carbon Tetrachloride	2017/11/22		95	%	70 - 130
			Chlorobenzene	2017/11/22		96	%	70 - 130
			Chloroform	2017/11/22		98	%	70 - 130
			Dibromochloromethane	2017/11/22		99	%	70 - 130
			1,2-Dichlorobenzene	2017/11/22		94	%	70 - 130
			1,3-Dichlorobenzene	2017/11/22		93	%	70 - 130
			1,4-Dichlorobenzene	2017/11/22		95	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2017/11/22		102	%	60 - 140
			1,1-Dichloroethane	2017/11/22		107	%	70 - 130
			1,2-Dichloroethane	2017/11/22		99	%	70 - 130
			1,1-Dichloroethylene	2017/11/22		110	%	70 - 130
			cis-1,2-Dichloroethylene	2017/11/22		98	%	70 - 130
			trans-1,2-Dichloroethylene	2017/11/22		105	%	70 - 130
			1,2-Dichloropropane	2017/11/22		99	%	70 - 130
			cis-1,3-Dichloropropene	2017/11/22		99	%	70 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			trans-1,3-Dichloropropene	2017/11/22		103	%	70 - 130
			Ethylbenzene	2017/11/22		95	%	70 - 130
			Ethylene Dibromide	2017/11/22		101	%	70 - 130
			Hexane	2017/11/22		119	%	70 - 130
			Methylene Chloride(Dichloromethane)	2017/11/22		107	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22		102	%	60 - 140
			Methyl Isobutyl Ketone	2017/11/22		107	%	70 - 130
			Methyl t-butyl ether (MTBE)	2017/11/22		94	%	70 - 130
			Styrene	2017/11/22		102	%	70 - 130
			1,1,1,2-Tetrachloroethane	2017/11/22		103	%	70 - 130
			1,1,2,2-Tetrachloroethane	2017/11/22		102	%	70 - 130
			Tetrachloroethylene	2017/11/22		93	%	70 - 130
			Toluene	2017/11/22		96	%	70 - 130
			1,1,1-Trichloroethane	2017/11/22		96	%	70 - 130
			1,1,2-Trichloroethane	2017/11/22		101	%	70 - 130
			Trichloroethylene	2017/11/22		96	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2017/11/22		97	%	70 - 130
			Vinyl Chloride	2017/11/22		107	%	70 - 130
			p+m-Xylene	2017/11/22		104	%	70 - 130
			o-Xylene	2017/11/22		100	%	70 - 130
5276175	BG1	Method Blank	4-Bromofluorobenzene	2017/11/22		79	%	70 - 130
			D4-1,2-Dichloroethane	2017/11/22		108	%	70 - 130
			D8-Toluene	2017/11/22		88	%	70 - 130
			Acetone (2-Propanone)	2017/11/22	<10		ug/L	
			Benzene	2017/11/22	<0.20		ug/L	
			Bromodichloromethane	2017/11/22	<0.50		ug/L	
			Bromoform	2017/11/22	<1.0		ug/L	
			Bromomethane	2017/11/22	<0.50		ug/L	
			Carbon Tetrachloride	2017/11/22	<0.20		ug/L	
			Chlorobenzene	2017/11/22	<0.20		ug/L	
			Chloroform	2017/11/22	<0.20		ug/L	
			Dibromochloromethane	2017/11/22	<0.50		ug/L	
			1,2-Dichlorobenzene	2017/11/22	<0.50		ug/L	
			1,3-Dichlorobenzene	2017/11/22	<0.50		ug/L	
			1,4-Dichlorobenzene	2017/11/22	<0.50		ug/L	
			Dichlorodifluoromethane (FREON 12)	2017/11/22	<1.0		ug/L	
			1,1-Dichloroethane	2017/11/22	<0.20		ug/L	
			1,2-Dichloroethane	2017/11/22	<0.50		ug/L	
			1,1-Dichloroethylene	2017/11/22	<0.20		ug/L	
			cis-1,2-Dichloroethylene	2017/11/22	<0.50		ug/L	
			trans-1,2-Dichloroethylene	2017/11/22	<0.50		ug/L	
			1,2-Dichloropropane	2017/11/22	<0.20		ug/L	
			cis-1,3-Dichloropropene	2017/11/22	<0.30		ug/L	
			trans-1,3-Dichloropropene	2017/11/22	<0.40		ug/L	
			Ethylbenzene	2017/11/22	<0.20		ug/L	
			Ethylene Dibromide	2017/11/22	<0.20		ug/L	
			Hexane	2017/11/22	<1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2017/11/22	<2.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22	<10		ug/L	
			Methyl Isobutyl Ketone	2017/11/22	<5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2017/11/22	<0.50		ug/L	
			Styrene	2017/11/22	<0.50		ug/L	
			1,1,1,2-Tetrachloroethane	2017/11/22	<0.50		ug/L	
			1,1,2,2-Tetrachloroethane	2017/11/22	<0.50		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Tetrachloroethylene	2017/11/22	<0.20		ug/L	
			Toluene	2017/11/22	<0.20		ug/L	
			1,1,1-Trichloroethane	2017/11/22	<0.20		ug/L	
			1,1,2-Trichloroethane	2017/11/22	<0.50		ug/L	
			Trichloroethylene	2017/11/22	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2017/11/22	<0.50		ug/L	
			Vinyl Chloride	2017/11/22	<0.20		ug/L	
			p+m-Xylene	2017/11/22	<0.20		ug/L	
			o-Xylene	2017/11/22	<0.20		ug/L	
			Total Xylenes	2017/11/22	<0.20		ug/L	
5276175	BG1	RPD	Acetone (2-Propanone)	2017/11/22	NC		%	30
			Benzene	2017/11/22	NC		%	30
			Bromodichloromethane	2017/11/22	NC		%	30
			Bromoform	2017/11/22	NC		%	30
			Bromomethane	2017/11/22	NC		%	30
			Carbon Tetrachloride	2017/11/22	NC		%	30
			Chlorobenzene	2017/11/22	NC		%	30
			Chloroform	2017/11/22	NC		%	30
			Dibromochloromethane	2017/11/22	NC		%	30
			1,2-Dichlorobenzene	2017/11/22	NC		%	30
			1,3-Dichlorobenzene	2017/11/22	NC		%	30
			1,4-Dichlorobenzene	2017/11/22	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2017/11/22	NC		%	30
			1,1-Dichloroethane	2017/11/22	NC		%	30
			1,2-Dichloroethane	2017/11/22	NC		%	30
			1,1-Dichloroethylene	2017/11/22	NC		%	30
			cis-1,2-Dichloroethylene	2017/11/22	NC		%	30
			trans-1,2-Dichloroethylene	2017/11/22	NC		%	30
			1,2-Dichloropropane	2017/11/22	NC		%	30
			cis-1,3-Dichloropropene	2017/11/22	NC		%	30
			trans-1,3-Dichloropropene	2017/11/22	NC		%	30
			Ethylbenzene	2017/11/22	NC		%	30
			Ethylene Dibromide	2017/11/22	NC		%	30
			Hexane	2017/11/22	NC		%	30
			Methylene Chloride(Dichloromethane)	2017/11/22	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22	NC		%	30
			Methyl Isobutyl Ketone	2017/11/22	NC		%	30
			Methyl t-butyl ether (MTBE)	2017/11/22	NC		%	30
			Styrene	2017/11/22	NC		%	30
			1,1,1,2-Tetrachloroethane	2017/11/22	NC		%	30
			1,1,2,2-Tetrachloroethane	2017/11/22	NC		%	30
			Tetrachloroethylene	2017/11/22	NC		%	30
			Toluene	2017/11/22	NC		%	30
			1,1,1-Trichloroethane	2017/11/22	NC		%	30
			1,1,2-Trichloroethane	2017/11/22	NC		%	30
			Trichloroethylene	2017/11/22	NC		%	30
			Trichlorofluoromethane (FREON 11)	2017/11/22	NC		%	30
			Vinyl Chloride	2017/11/22	NC		%	30
			p+m-Xylene	2017/11/22	NC		%	30
			o-Xylene	2017/11/22	NC		%	30
			Total Xylenes	2017/11/22	NC		%	30
5276809	MS4	Matrix Spike	4-Bromofluorobenzene	2017/11/22		102	%	70 - 130
			D4-1,2-Dichloroethane	2017/11/22		101	%	70 - 130
			D8-Toluene	2017/11/22		101	%	70 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acetone (2-Propanone)	2017/11/22		105	%	60 - 140
			Benzene	2017/11/22		98	%	70 - 130
			Bromodichloromethane	2017/11/22		95	%	70 - 130
			Bromoform	2017/11/22		103	%	70 - 130
			Bromomethane	2017/11/22		95	%	60 - 140
			Carbon Tetrachloride	2017/11/22		94	%	70 - 130
			Chlorobenzene	2017/11/22		96	%	70 - 130
			Chloroform	2017/11/22		95	%	70 - 130
			Dibromochloromethane	2017/11/22		101	%	70 - 130
			1,2-Dichlorobenzene	2017/11/22		93	%	70 - 130
			1,3-Dichlorobenzene	2017/11/22		99	%	70 - 130
			1,4-Dichlorobenzene	2017/11/22		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2017/11/22		91	%	60 - 140
			1,1-Dichloroethane	2017/11/22		101	%	70 - 130
			1,2-Dichloroethane	2017/11/22		98	%	70 - 130
			1,1-Dichloroethylene	2017/11/22		106	%	70 - 130
			cis-1,2-Dichloroethylene	2017/11/22		96	%	70 - 130
			trans-1,2-Dichloroethylene	2017/11/22		99	%	70 - 130
			1,2-Dichloropropane	2017/11/22		94	%	70 - 130
			cis-1,3-Dichloropropene	2017/11/22		95	%	70 - 130
			trans-1,3-Dichloropropene	2017/11/22		100	%	70 - 130
			Ethylbenzene	2017/11/22		97	%	70 - 130
			Ethylene Dibromide	2017/11/22		103	%	70 - 130
			Hexane	2017/11/22		101	%	70 - 130
			Methylene Chloride(Dichloromethane)	2017/11/22		89	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22		98	%	60 - 140
			Methyl Isobutyl Ketone	2017/11/22		95	%	70 - 130
			Methyl t-butyl ether (MTBE)	2017/11/22		97	%	70 - 130
			Styrene	2017/11/22		95	%	70 - 130
			1,1,1,2-Tetrachloroethane	2017/11/22		101	%	70 - 130
			1,1,2,2-Tetrachloroethane	2017/11/22		101	%	70 - 130
			Tetrachloroethylene	2017/11/22		93	%	70 - 130
			Toluene	2017/11/22		91	%	70 - 130
			1,1,1-Trichloroethane	2017/11/22		94	%	70 - 130
			1,1,2-Trichloroethane	2017/11/22		100	%	70 - 130
			Trichloroethylene	2017/11/22		94	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2017/11/22		96	%	70 - 130
			Vinyl Chloride	2017/11/22		96	%	70 - 130
			p+m-Xylene	2017/11/22		98	%	70 - 130
			o-Xylene	2017/11/22		96	%	70 - 130
			F1 (C6-C10)	2017/11/22		87	%	60 - 140
5276809	MS4	Spiked Blank	4-Bromofluorobenzene	2017/11/22		103	%	70 - 130
			D4-1,2-Dichloroethane	2017/11/22		100	%	70 - 130
			D8-Toluene	2017/11/22		101	%	70 - 130
			Acetone (2-Propanone)	2017/11/22		108	%	60 - 140
			Benzene	2017/11/22		100	%	70 - 130
			Bromodichloromethane	2017/11/22		95	%	70 - 130
			Bromoform	2017/11/22		103	%	70 - 130
			Bromomethane	2017/11/22		95	%	60 - 140
			Carbon Tetrachloride	2017/11/22		95	%	70 - 130
			Chlorobenzene	2017/11/22		97	%	70 - 130
			Chloroform	2017/11/22		96	%	70 - 130
			Dibromochloromethane	2017/11/22		101	%	70 - 130
			1,2-Dichlorobenzene	2017/11/22		94	%	70 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,3-Dichlorobenzene	2017/11/22		101	%	70 - 130
			1,4-Dichlorobenzene	2017/11/22		99	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2017/11/22		95	%	60 - 140
			1,1-Dichloroethane	2017/11/22		102	%	70 - 130
			1,2-Dichloroethane	2017/11/22		98	%	70 - 130
			1,1-Dichloroethylene	2017/11/22		109	%	70 - 130
			cis-1,2-Dichloroethylene	2017/11/22		97	%	70 - 130
			trans-1,2-Dichloroethylene	2017/11/22		101	%	70 - 130
			1,2-Dichloropropane	2017/11/22		95	%	70 - 130
			cis-1,3-Dichloropropene	2017/11/22		94	%	70 - 130
			trans-1,3-Dichloropropene	2017/11/22		96	%	70 - 130
			Ethylbenzene	2017/11/22		98	%	70 - 130
			Ethylene Dibromide	2017/11/22		102	%	70 - 130
			Hexane	2017/11/22		102	%	70 - 130
			Methylene Chloride(Dichloromethane)	2017/11/22		88	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22		99	%	60 - 140
			Methyl Isobutyl Ketone	2017/11/22		95	%	70 - 130
			Methyl t-butyl ether (MTBE)	2017/11/22		99	%	70 - 130
			Styrene	2017/11/22		97	%	70 - 130
			1,1,1,2-Tetrachloroethane	2017/11/22		101	%	70 - 130
			1,1,2,2-Tetrachloroethane	2017/11/22		99	%	70 - 130
			Tetrachloroethylene	2017/11/22		95	%	70 - 130
			Toluene	2017/11/22		92	%	70 - 130
			1,1,1-Trichloroethane	2017/11/22		96	%	70 - 130
			1,1,2-Trichloroethane	2017/11/22		100	%	70 - 130
			Trichloroethylene	2017/11/22		97	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2017/11/22		98	%	70 - 130
			Vinyl Chloride	2017/11/22		96	%	70 - 130
			p+m-Xylene	2017/11/22		100	%	70 - 130
			o-Xylene	2017/11/22		98	%	70 - 130
			F1 (C6-C10)	2017/11/22		89	%	60 - 140
5276809	MS4	Method Blank	4-Bromofluorobenzene	2017/11/22		99	%	70 - 130
			D4-1,2-Dichloroethane	2017/11/22		100	%	70 - 130
			D8-Toluene	2017/11/22		99	%	70 - 130
			Acetone (2-Propanone)	2017/11/22	<10		ug/L	
			Benzene	2017/11/22	<0.20		ug/L	
			Bromodichloromethane	2017/11/22	<0.50		ug/L	
			Bromoform	2017/11/22	<1.0		ug/L	
			Bromomethane	2017/11/22	<0.50		ug/L	
			Carbon Tetrachloride	2017/11/22	<0.20		ug/L	
			Chlorobenzene	2017/11/22	<0.20		ug/L	
			Chloroform	2017/11/22	<0.20		ug/L	
			Dibromochloromethane	2017/11/22	<0.50		ug/L	
			1,2-Dichlorobenzene	2017/11/22	<0.50		ug/L	
			1,3-Dichlorobenzene	2017/11/22	<0.50		ug/L	
			1,4-Dichlorobenzene	2017/11/22	<0.50		ug/L	
			Dichlorodifluoromethane (FREON 12)	2017/11/22	<1.0		ug/L	
			1,1-Dichloroethane	2017/11/22	<0.20		ug/L	
			1,2-Dichloroethane	2017/11/22	<0.50		ug/L	
			1,1-Dichloroethylene	2017/11/22	<0.20		ug/L	
			cis-1,2-Dichloroethylene	2017/11/22	<0.50		ug/L	
			trans-1,2-Dichloroethylene	2017/11/22	<0.50		ug/L	
			1,2-Dichloropropane	2017/11/22	<0.20		ug/L	
			cis-1,3-Dichloropropene	2017/11/22	<0.30		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			trans-1,3-Dichloropropene	2017/11/22	<0.40		ug/L	
			Ethylbenzene	2017/11/22	<0.20		ug/L	
			Ethylene Dibromide	2017/11/22	<0.20		ug/L	
			Hexane	2017/11/22	<1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2017/11/22	<2.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22	<10		ug/L	
			Methyl Isobutyl Ketone	2017/11/22	<5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2017/11/22	<0.50		ug/L	
			Styrene	2017/11/22	<0.50		ug/L	
			1,1,1,2-Tetrachloroethane	2017/11/22	<0.50		ug/L	
			1,1,2,2-Tetrachloroethane	2017/11/22	<0.50		ug/L	
			Tetrachloroethylene	2017/11/22	<0.20		ug/L	
			Toluene	2017/11/22	<0.20		ug/L	
			1,1,1-Trichloroethane	2017/11/22	<0.20		ug/L	
			1,1,2-Trichloroethane	2017/11/22	<0.50		ug/L	
			Trichloroethylene	2017/11/22	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2017/11/22	<0.50		ug/L	
			Vinyl Chloride	2017/11/22	<0.20		ug/L	
			p+m-Xylene	2017/11/22	<0.20		ug/L	
			o-Xylene	2017/11/22	<0.20		ug/L	
			Total Xylenes	2017/11/22	<0.20		ug/L	
			F1 (C6-C10)	2017/11/22	<25		ug/L	
			F1 (C6-C10) - BTEX	2017/11/22	<25		ug/L	
5276809	MS4	RPD	Acetone (2-Propanone)	2017/11/22	NC		%	30
			Benzene	2017/11/22	NC		%	30
			Bromodichloromethane	2017/11/22	NC		%	30
			Bromoform	2017/11/22	NC		%	30
			Bromomethane	2017/11/22	NC		%	30
			Carbon Tetrachloride	2017/11/22	NC		%	30
			Chlorobenzene	2017/11/22	NC		%	30
			Chloroform	2017/11/22	NC		%	30
			Dibromochloromethane	2017/11/22	NC		%	30
			1,2-Dichlorobenzene	2017/11/22	NC		%	30
			1,3-Dichlorobenzene	2017/11/22	NC		%	30
			1,4-Dichlorobenzene	2017/11/22	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2017/11/22	NC		%	30
			1,1-Dichloroethane	2017/11/22	NC		%	30
			1,2-Dichloroethane	2017/11/22	NC		%	30
			1,1-Dichloroethylene	2017/11/22	NC		%	30
			cis-1,2-Dichloroethylene	2017/11/22	NC		%	30
			trans-1,2-Dichloroethylene	2017/11/22	NC		%	30
			1,2-Dichloropropane	2017/11/22	NC		%	30
			cis-1,3-Dichloropropene	2017/11/22	NC		%	30
			trans-1,3-Dichloropropene	2017/11/22	NC		%	30
			Ethylbenzene	2017/11/22	NC		%	30
			Ethylene Dibromide	2017/11/22	NC		%	30
			Hexane	2017/11/22	NC		%	30
			Methylene Chloride(Dichloromethane)	2017/11/22	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2017/11/22	NC		%	30
			Methyl Isobutyl Ketone	2017/11/22	NC		%	30
			Methyl t-butyl ether (MTBE)	2017/11/22	NC		%	30
			Styrene	2017/11/22	NC		%	30
			1,1,1,2-Tetrachloroethane	2017/11/22	NC		%	30
			1,1,2,2-Tetrachloroethane	2017/11/22	NC		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Tetrachloroethylene	2017/11/22	NC		%	30
			Toluene	2017/11/22	0.34		%	30
			1,1,1-Trichloroethane	2017/11/22	NC		%	30
			1,1,2-Trichloroethane	2017/11/22	NC		%	30
			Trichloroethylene	2017/11/22	NC		%	30
			Trichlorofluoromethane (FREON 11)	2017/11/22	NC		%	30
			Vinyl Chloride	2017/11/22	NC		%	30
			p+m-Xylene	2017/11/22	NC		%	30
			o-Xylene	2017/11/22	NC		%	30
			Total Xylenes	2017/11/22	NC		%	30
			F1 (C6-C10)	2017/11/22	NC		%	30
			F1 (C6-C10) - BTEX	2017/11/22	NC		%	30
5277623	DRM	Matrix Spike	Dissolved Chloride (Cl)	2017/11/22		100	%	80 - 120
5277623	DRM	Spiked Blank	Dissolved Chloride (Cl)	2017/11/22		103	%	80 - 120
5277623	DRM	Method Blank	Dissolved Chloride (Cl)	2017/11/22	<1.0		mg/L	
5277623	DRM	RPD	Dissolved Chloride (Cl)	2017/11/22	0.68		%	20
5278237	XQI	Matrix Spike	WAD Cyanide (Free)	2017/11/22		95	%	80 - 120
5278237	XQI	Spiked Blank	WAD Cyanide (Free)	2017/11/22		96	%	80 - 120
5278237	XQI	Method Blank	WAD Cyanide (Free)	2017/11/22	<1		ug/L	
5278237	XQI	RPD	WAD Cyanide (Free)	2017/11/22	9.5		%	20
5278800	TNG	Matrix Spike [FOX970-06]	Dissolved Antimony (Sb)	2017/11/23		110	%	80 - 120
			Dissolved Arsenic (As)	2017/11/23		105	%	80 - 120
			Dissolved Barium (Ba)	2017/11/23		102	%	80 - 120
			Dissolved Beryllium (Be)	2017/11/23		106	%	80 - 120
			Dissolved Boron (B)	2017/11/23		107	%	80 - 120
			Dissolved Cadmium (Cd)	2017/11/23		102	%	80 - 120
			Dissolved Chromium (Cr)	2017/11/23		103	%	80 - 120
			Dissolved Cobalt (Co)	2017/11/23		100	%	80 - 120
			Dissolved Copper (Cu)	2017/11/23		108	%	80 - 120
			Dissolved Lead (Pb)	2017/11/23		93	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/11/23		113	%	80 - 120
			Dissolved Nickel (Ni)	2017/11/23		99	%	80 - 120
			Dissolved Selenium (Se)	2017/11/23		100	%	80 - 120
			Dissolved Silver (Ag)	2017/11/23		97	%	80 - 120
			Dissolved Sodium (Na)	2017/11/23		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/11/23		91	%	80 - 120
			Dissolved Uranium (U)	2017/11/23		97	%	80 - 120
			Dissolved Vanadium (V)	2017/11/23		105	%	80 - 120
			Dissolved Zinc (Zn)	2017/11/23		94	%	80 - 120
5278800	TNG	Spiked Blank	Dissolved Antimony (Sb)	2017/11/23		101	%	80 - 120
			Dissolved Arsenic (As)	2017/11/23		96	%	80 - 120
			Dissolved Barium (Ba)	2017/11/23		96	%	80 - 120
			Dissolved Beryllium (Be)	2017/11/23		99	%	80 - 120
			Dissolved Boron (B)	2017/11/23		98	%	80 - 120
			Dissolved Cadmium (Cd)	2017/11/23		100	%	80 - 120
			Dissolved Chromium (Cr)	2017/11/23		96	%	80 - 120
			Dissolved Cobalt (Co)	2017/11/23		96	%	80 - 120
			Dissolved Copper (Cu)	2017/11/23		100	%	80 - 120
			Dissolved Lead (Pb)	2017/11/23		94	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/11/23		100	%	80 - 120
			Dissolved Nickel (Ni)	2017/11/23		97	%	80 - 120
			Dissolved Selenium (Se)	2017/11/23		99	%	80 - 120
			Dissolved Silver (Ag)	2017/11/23		98	%	80 - 120
			Dissolved Sodium (Na)	2017/11/23		96	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Thallium (Tl)	2017/11/23		93	%	80 - 120
			Dissolved Uranium (U)	2017/11/23		93	%	80 - 120
			Dissolved Vanadium (V)	2017/11/23		95	%	80 - 120
			Dissolved Zinc (Zn)	2017/11/23		97	%	80 - 120
5278800	TNG	Method Blank	Dissolved Antimony (Sb)	2017/11/23	<0.50		ug/L	
			Dissolved Arsenic (As)	2017/11/23	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/11/23	<2.0		ug/L	
			Dissolved Beryllium (Be)	2017/11/23	<0.50		ug/L	
			Dissolved Boron (B)	2017/11/23	<10		ug/L	
			Dissolved Cadmium (Cd)	2017/11/23	<0.10		ug/L	
			Dissolved Chromium (Cr)	2017/11/23	<5.0		ug/L	
			Dissolved Cobalt (Co)	2017/11/23	<0.50		ug/L	
			Dissolved Copper (Cu)	2017/11/23	<1.0		ug/L	
			Dissolved Lead (Pb)	2017/11/23	<0.50		ug/L	
			Dissolved Molybdenum (Mo)	2017/11/23	<0.50		ug/L	
			Dissolved Nickel (Ni)	2017/11/23	<1.0		ug/L	
			Dissolved Selenium (Se)	2017/11/23	<2.0		ug/L	
			Dissolved Silver (Ag)	2017/11/23	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/11/23	<100		ug/L	
			Dissolved Thallium (Tl)	2017/11/23	<0.050		ug/L	
			Dissolved Uranium (U)	2017/11/23	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/11/23	<0.50		ug/L	
			Dissolved Zinc (Zn)	2017/11/23	<5.0		ug/L	
5278800	TNG	RPD [FOX970-06]	Dissolved Antimony (Sb)	2017/11/23	NC		%	20
			Dissolved Arsenic (As)	2017/11/23	NC		%	20
			Dissolved Barium (Ba)	2017/11/23	0.18		%	20
			Dissolved Beryllium (Be)	2017/11/23	NC		%	20
			Dissolved Boron (B)	2017/11/23	2.5		%	20
			Dissolved Cadmium (Cd)	2017/11/23	NC		%	20
			Dissolved Chromium (Cr)	2017/11/23	NC		%	20
			Dissolved Cobalt (Co)	2017/11/23	1.2		%	20
			Dissolved Copper (Cu)	2017/11/23	3.5		%	20
			Dissolved Lead (Pb)	2017/11/23	NC		%	20
			Dissolved Molybdenum (Mo)	2017/11/23	5.2		%	20
			Dissolved Nickel (Ni)	2017/11/23	1.1		%	20
			Dissolved Selenium (Se)	2017/11/23	NC		%	20
			Dissolved Silver (Ag)	2017/11/23	NC		%	20
			Dissolved Sodium (Na)	2017/11/23	0.50		%	20
			Dissolved Thallium (Tl)	2017/11/23	NC		%	20
			Dissolved Uranium (U)	2017/11/23	1.4		%	20
			Dissolved Vanadium (V)	2017/11/23	NC		%	20
			Dissolved Zinc (Zn)	2017/11/23	NC		%	20
5279185	RON	Matrix Spike	Mercury (Hg)	2017/11/23		106	%	75 - 125
5279185	RON	Spiked Blank	Mercury (Hg)	2017/11/23		98	%	80 - 120
5279185	RON	Method Blank	Mercury (Hg)	2017/11/23	<0.1		ug/L	
5279185	RON	RPD	Mercury (Hg)	2017/11/23	NC		%	20
5280865	LLE	Matrix Spike [FOX969-07]	Chromium (VI)	2017/11/23		106	%	80 - 120
5280865	LLE	Spiked Blank	Chromium (VI)	2017/11/23		104	%	80 - 120
5280865	LLE	Method Blank	Chromium (VI)	2017/11/23	<0.50		ug/L	

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5280865	LLE	RPD [FOX969-07]	Chromium (VI)	2017/11/23	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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Maxxam Job #: B7Q0656
Report Date: 2017/11/24

AEL Environment
Client Project #: 10869
Sampler Initials: OM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

Cristina Carriere, Scientific Service Specialist

Steve Roberts, Ottawa Lab Manager

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#14134 AEL Environment	Company Name:		Quotation #:	B71396	Maxxam Job #:	Bottle Order #: 638032
Attention:	Accounting	Attention:	Reporting Group	P.O. #:			
Address:	1705 Argentia Rd Unit 3 Mississauga ON L5N 3A9	Address:		Project:	10869	COC #:	Project Manager:
Tel:	(416) 657-2367 x Fax: (416) 647-2367 x	Tel:	Fax:	Project Name:		C#638032-01-01	Antonella Brasil
Email:	twilson@aelenv.com	Email:	lab@aeonegmond.com	Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☐ Res/Park ☐ Medium/Fine
- ☐ Table 2 ☒ Ind/Comm ☐ Coarse
- ☒ Table 3 ☐ Agri/Other ☑ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558 ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO
- ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	PAHs (Water)	Metals & Inorganics Pkg (Wtr)	VOCs by HS (Water)	PHC (F1-F4)/BTEX						# of Bottles	Comments
1	A0564	MW4	2017/11/17	2:10	GW	✓	✓	✓	✓	✓						12	
2	A0562	MW1	"	12:15	GW	✓	✓	✓	✓	✓						12	
3	A0563	MW1	"	12:15	GW	✓	✓	✓	✓	✓						12	
4	A0561	MW6	"	10:35	GW	✓	✓	✓	✓	✓						12	
5	Trip blank								✓							2	
6																	
7																	
8																	RECEIVED IN OTTAWA
9																	
10																	ON Ice

17-Nov-17 15:30
Antonella Brasil
B7Q0656
MVA OTT-001

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
[signature]	17/11/17	3:30	Kevin Jansen MX	2017/11/17	15:30	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	1.2, 1	Present		
		Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

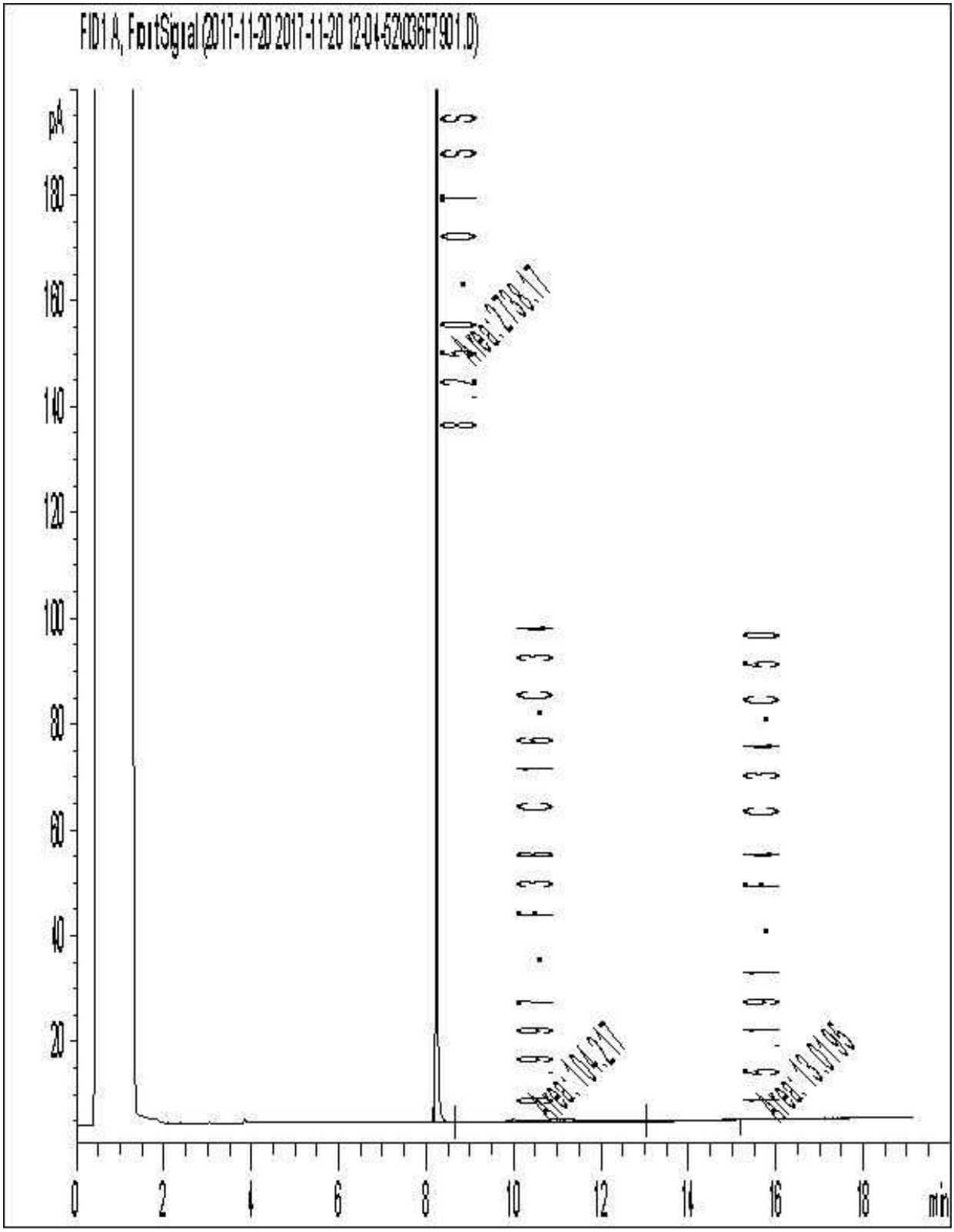
White: Maxxa Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam Job #: B7Q0656
Report Date: 2017/11/24
Maxxam Sample: FOX969

AEL Environment
Client Project #: 10869
Client ID: A0564/MW4

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

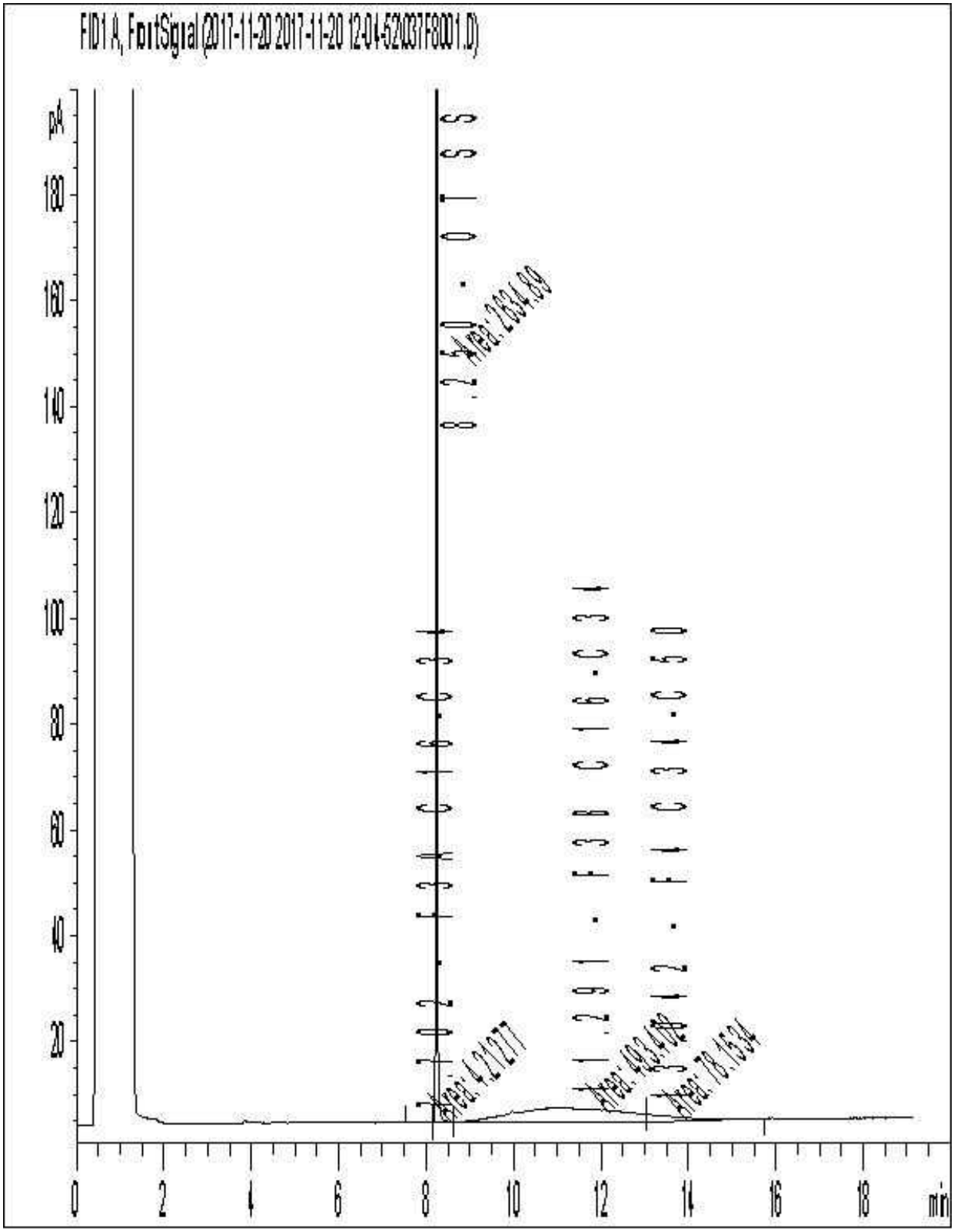


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B7Q0656
Report Date: 2017/11/24
Maxxam Sample: FOX969 Lab-Dup

AEL Environment
Client Project #: 10869
Client ID: A0564/MW4

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

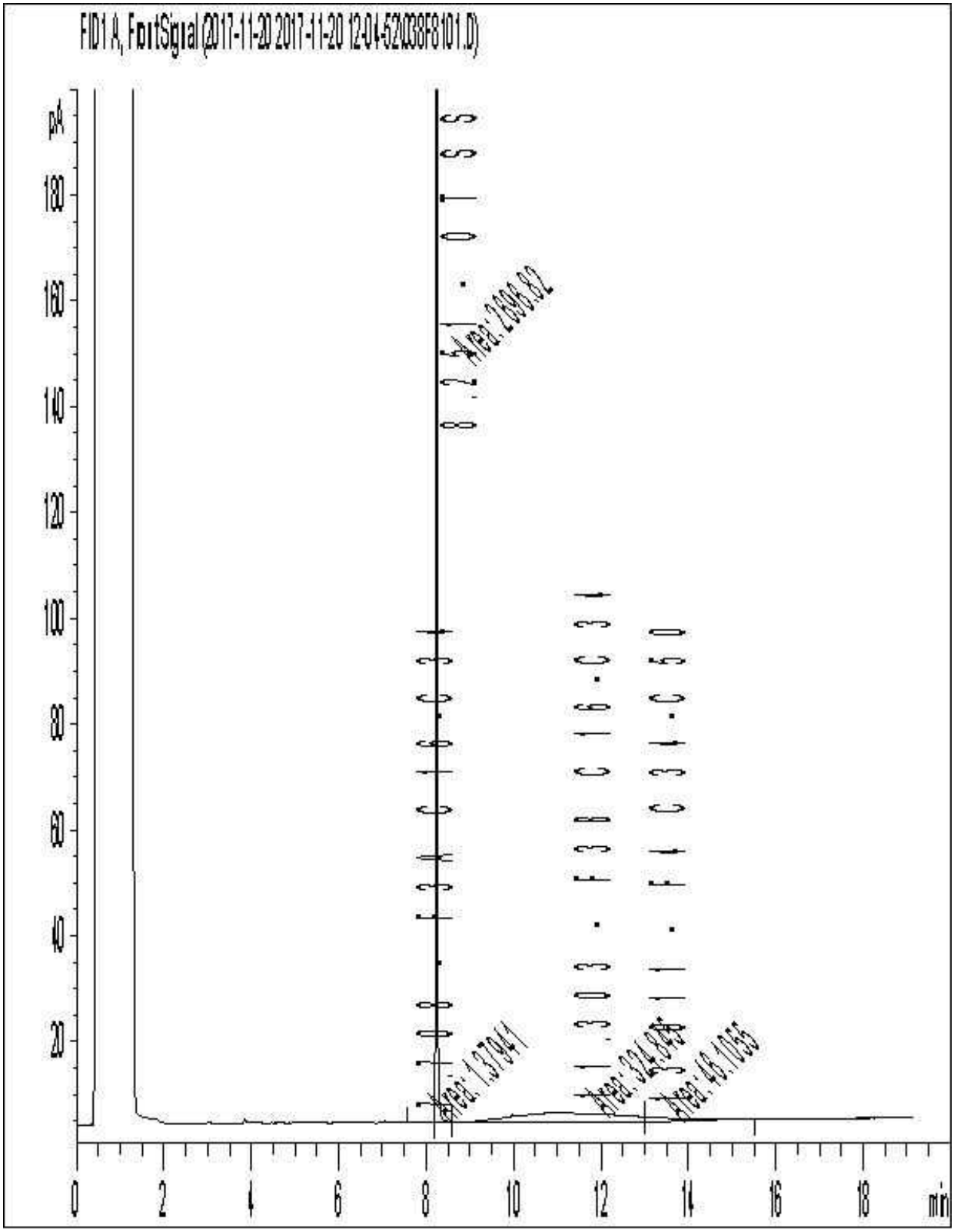


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B7Q0656
Report Date: 2017/11/24
Maxxam Sample: FOX970

AEL Environment
Client Project #: 10869
Client ID: A0562/MW1

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

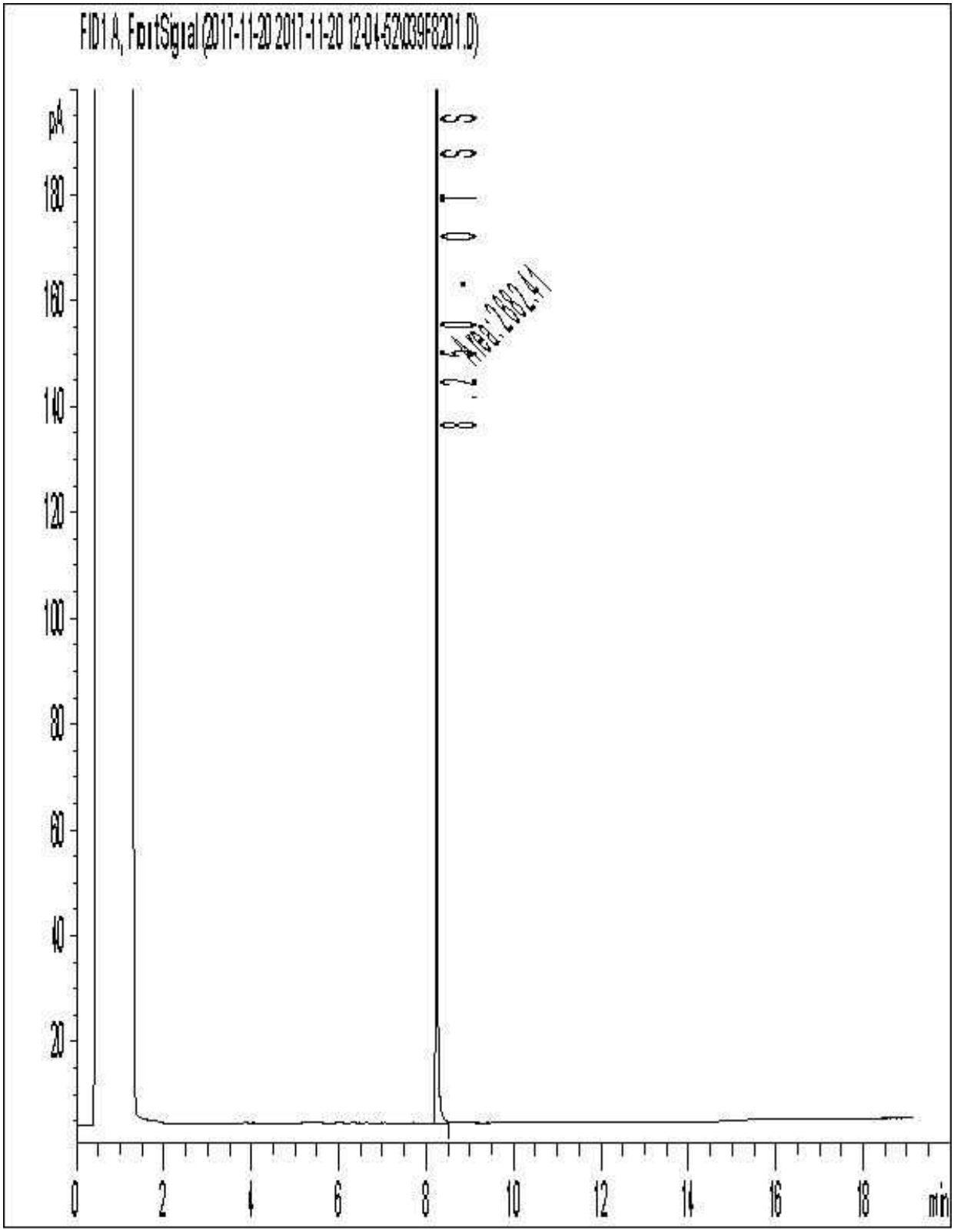


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B7Q0656
Report Date: 2017/11/24
Maxxam Sample: FOX971

AEL Environment
Client Project #: 10869
Client ID: A0563/MW1

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

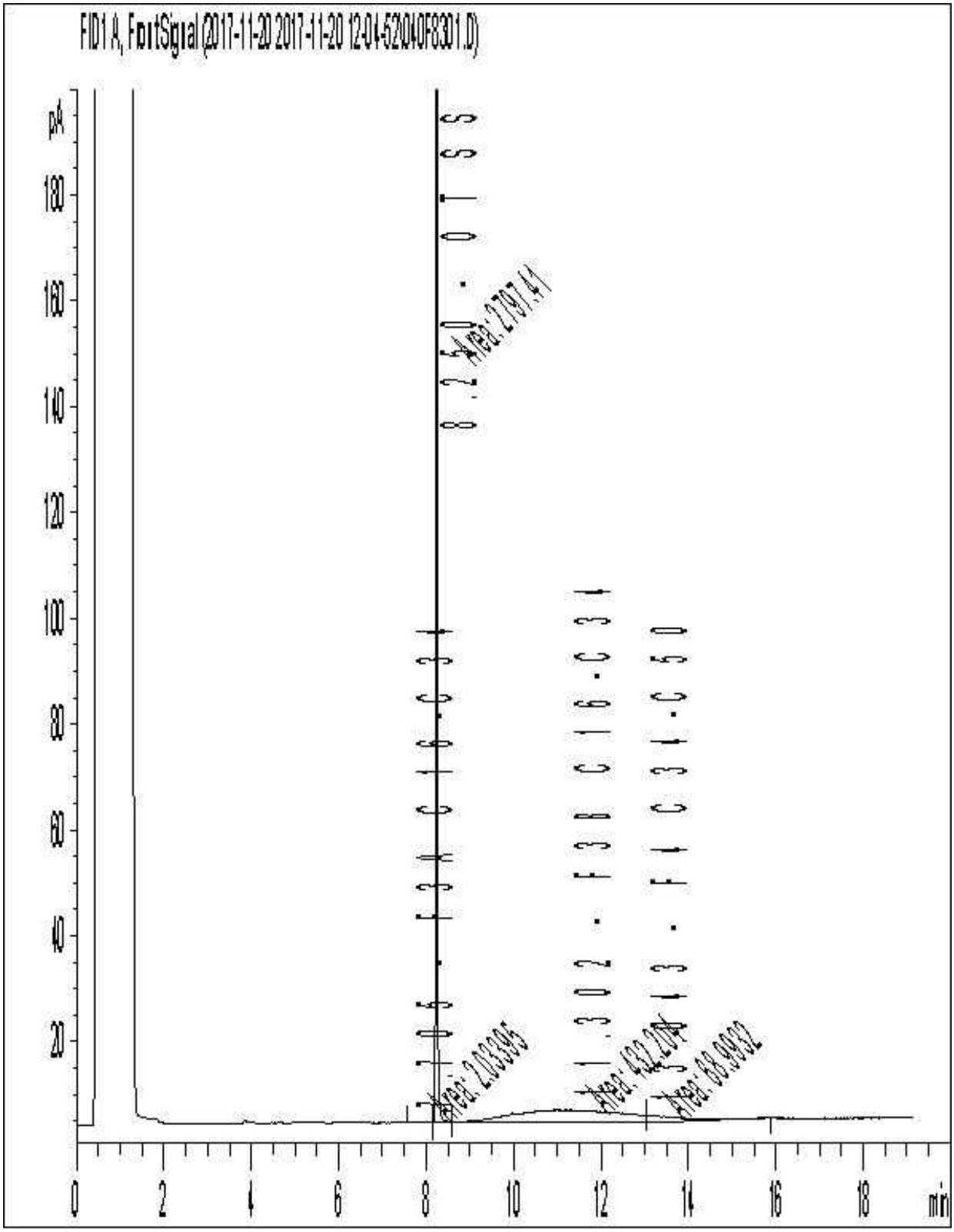


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B7Q0656
Report Date: 2017/11/24
Maxxam Sample: FOX972

AEL Environment
Client Project #: 10869
Client ID: A0561/MW6

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam
A Bureau Veritas Group Company

Your Project #: 10869
Site Location: 1871 MERIVALE RD OTTAWA
Your C.O.C. #: 631294-01-01

Attention: Reporting Group

AEL Environment
1705 Argentia Rd
Unit 3
Mississauga, ON
CANADA L5N 3A9

Report Date: 2018/02/07
Report #: R4973280
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B823857
Received: 2018/01/31, 12:45

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
1,3-Dichloropropene Sum (1)	1	N/A	2018/02/06		EPA 8260C m
Chloride by Automated Colourimetry (1)	2	N/A	2018/02/05	CAM SOP-00463	EPA 325.2 m
Chromium (VI) in Water (1)	2	N/A	2018/02/05	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide (1)	2	N/A	2018/02/05	CAM SOP-00457	OMOE E3015 m
Mercury (1)	2	2018/02/02	2018/02/05	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS (1)	2	N/A	2018/02/05	CAM SOP-00447	EPA 6020B m
Volatile Organic Compounds in Water (1)	1	N/A	2018/02/05	CAM SOP-00228	EPA 8260C m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Maxxam Analytics Mississauga

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Your Project #: 10869
Site Location: 1871 MERIVALE RD OTTAWA
Your C.O.C. #: 631294-01-01

Attention: Reporting Group

AEL Environment
1705 Argentia Rd
Unit 3
Mississauga, ON
CANADA L5N 3A9

Report Date: 2018/02/07
Report #: R4973280
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B823857
Received: 2018/01/31, 12:45

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B823857
Report Date: 2018/02/07

AEL Environment
Client Project #: 10869
Site Location: 1871 MERIVALE RD OTTAWA
Sampler Initials: SR

O.REG 153 METALS & INORGANICS PKG (WTR)

Maxxam ID		GAC469				GAC469			
Sampling Date		2018/01/31 12:30				2018/01/31 12:30			
COC Number		631294-01-01				631294-01-01			
	UNITS	A0475	RDL	MDL	QC Batch	A0475 Lab-Dup	RDL	MDL	QC Batch
Inorganics									
WAD Cyanide (Free)	ug/L	<1	1	0.4	5384402				
Dissolved Chloride (Cl)	mg/L	130	1.0	0.30	5381894				
Metals									
Chromium (VI)	ug/L	<0.50	0.50	0.30	5381811				
Mercury (Hg)	ug/L	<0.1	0.1	0.02	5382545				
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	0.50	5382406	<0.50	0.50	0.50	5382406
Dissolved Arsenic (As)	ug/L	<1.0	1.0	1.0	5382406	<1.0	1.0	1.0	5382406
Dissolved Barium (Ba)	ug/L	120	2.0	2.0	5382406	120	2.0	2.0	5382406
Dissolved Beryllium (Be)	ug/L	<0.50	0.50	0.50	5382406	<0.50	0.50	0.50	5382406
Dissolved Boron (B)	ug/L	49	10	10	5382406	50	10	10	5382406
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	0.10	5382406	<0.10	0.10	0.10	5382406
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	5.0	5382406	<5.0	5.0	5.0	5382406
Dissolved Cobalt (Co)	ug/L	1.5	0.50	0.50	5382406	1.5	0.50	0.50	5382406
Dissolved Copper (Cu)	ug/L	1.4	1.0	1.0	5382406	1.4	1.0	1.0	5382406
Dissolved Lead (Pb)	ug/L	<0.50	0.50	0.50	5382406	<0.50	0.50	0.50	5382406
Dissolved Molybdenum (Mo)	ug/L	0.58	0.50	0.50	5382406	0.57	0.50	0.50	5382406
Dissolved Nickel (Ni)	ug/L	1.6	1.0	1.0	5382406	1.9	1.0	1.0	5382406
Dissolved Selenium (Se)	ug/L	<2.0	2.0	2.0	5382406	<2.0	2.0	2.0	5382406
Dissolved Silver (Ag)	ug/L	<0.10	0.10	0.10	5382406	<0.10	0.10	0.10	5382406
Dissolved Sodium (Na)	ug/L	130000	100	100	5382406	130000	100	100	5382406
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	0.050	5382406	<0.050	0.050	0.050	5382406
Dissolved Uranium (U)	ug/L	0.22	0.10	0.10	5382406	0.20	0.10	0.10	5382406
Dissolved Vanadium (V)	ug/L	1.5	0.50	0.50	5382406	1.5	0.50	0.50	5382406
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	5.0	5382406	<5.0	5.0	5.0	5382406

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B823857
Report Date: 2018/02/07

AEL Environment
Client Project #: 10869
Site Location: 1871 MERIVALE RD OTTAWA
Sampler Initials: SR

O.REG 153 METALS & INORGANICS PKG (WTR)

Maxxam ID		GAC470				GAC470			
Sampling Date		2018/01/31 12:30				2018/01/31 12:30			
COC Number		631294-01-01				631294-01-01			
	UNITS	A0480	RDL	MDL	QC Batch	A0480 Lab-Dup	RDL	MDL	QC Batch
Inorganics									
WAD Cyanide (Free)	ug/L	<1	1	0.4	5384402				
Dissolved Chloride (Cl)	mg/L	130	1.0	0.30	5381894	140	1.0	0.30	5381894
Metals									
Chromium (VI)	ug/L	<0.50	0.50	0.30	5381811				
Mercury (Hg)	ug/L	<0.1	0.1	0.02	5382545				
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	0.50	5382406				
Dissolved Arsenic (As)	ug/L	<1.0	1.0	1.0	5382406				
Dissolved Barium (Ba)	ug/L	120	2.0	2.0	5382406				
Dissolved Beryllium (Be)	ug/L	<0.50	0.50	0.50	5382406				
Dissolved Boron (B)	ug/L	49	10	10	5382406				
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	0.10	5382406				
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	5.0	5382406				
Dissolved Cobalt (Co)	ug/L	1.6	0.50	0.50	5382406				
Dissolved Copper (Cu)	ug/L	2.5	1.0	1.0	5382406				
Dissolved Lead (Pb)	ug/L	<0.50	0.50	0.50	5382406				
Dissolved Molybdenum (Mo)	ug/L	0.62	0.50	0.50	5382406				
Dissolved Nickel (Ni)	ug/L	1.5	1.0	1.0	5382406				
Dissolved Selenium (Se)	ug/L	<2.0	2.0	2.0	5382406				
Dissolved Silver (Ag)	ug/L	<0.10	0.10	0.10	5382406				
Dissolved Sodium (Na)	ug/L	130000	100	100	5382406				
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	0.050	5382406				
Dissolved Uranium (U)	ug/L	0.23	0.10	0.10	5382406				
Dissolved Vanadium (V)	ug/L	0.95	0.50	0.50	5382406				
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	5.0	5382406				

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Maxxam Job #: B823857
Report Date: 2018/02/07

AEL Environment
Client Project #: 10869
Site Location: 1871 MERIVALE RD OTTAWA
Sampler Initials: SR

O.REG 153 VOCS BY HS (WATER)

Maxxam ID		GAC471			
Sampling Date		2018/01/31			
COC Number		631294-01-01			
	UNITS	TRIP BLANK	RDL	MDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	0.50	0.50	5379370
Volatile Organics					
Acetone (2-Propanone)	ug/L	<10	10	1.0	5384306
Benzene	ug/L	<0.20	0.20	0.020	5384306
Bromodichloromethane	ug/L	<0.50	0.50	0.050	5384306
Bromoform	ug/L	<1.0	1.0	0.10	5384306
Bromomethane	ug/L	<0.50	0.50	0.10	5384306
Carbon Tetrachloride	ug/L	<0.20	0.20	0.050	5384306
Chlorobenzene	ug/L	<0.20	0.20	0.010	5384306
Chloroform	ug/L	<0.20	0.20	0.050	5384306
Dibromochloromethane	ug/L	<0.50	0.50	0.050	5384306
1,2-Dichlorobenzene	ug/L	<0.50	0.50	0.050	5384306
1,3-Dichlorobenzene	ug/L	<0.50	0.50	0.050	5384306
1,4-Dichlorobenzene	ug/L	<0.50	0.50	0.050	5384306
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	1.0	0.050	5384306
1,1-Dichloroethane	ug/L	<0.20	0.20	0.050	5384306
1,2-Dichloroethane	ug/L	<0.50	0.50	0.020	5384306
1,1-Dichloroethylene	ug/L	<0.20	0.20	0.050	5384306
cis-1,2-Dichloroethylene	ug/L	<0.50	0.50	0.050	5384306
trans-1,2-Dichloroethylene	ug/L	<0.50	0.50	0.050	5384306
1,2-Dichloropropane	ug/L	<0.20	0.20	0.050	5384306
cis-1,3-Dichloropropene	ug/L	<0.30	0.30	0.050	5384306
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	0.050	5384306
Ethylbenzene	ug/L	<0.20	0.20	0.010	5384306
Ethylene Dibromide	ug/L	<0.20	0.20	0.050	5384306
Hexane	ug/L	<1.0	1.0	0.10	5384306
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	0.10	5384306
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	10	0.50	5384306
Methyl Isobutyl Ketone	ug/L	<5.0	5.0	0.10	5384306
Methyl t-butyl ether (MTBE)	ug/L	<0.50	0.50	0.050	5384306
Styrene	ug/L	<0.50	0.50	0.050	5384306
1,1,1,2-Tetrachloroethane	ug/L	<0.50	0.50	0.050	5384306
1,1,2,2-Tetrachloroethane	ug/L	<0.50	0.50	0.050	5384306
Tetrachloroethylene	ug/L	<0.20	0.20	0.050	5384306

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Report Date: 2018/02/07

AEL Environment
Client Project #: 10869
Site Location: 1871 MERIVALE RD OTTAWA
Sampler Initials: SR

O.REG 153 VOCS BY HS (WATER)

Maxxam ID		GAC471			
Sampling Date		2018/01/31			
COC Number		631294-01-01			
	UNITS	TRIP BLANK	RDL	MDL	QC Batch
Toluene	ug/L	<0.20	0.20	0.010	5384306
1,1,1-Trichloroethane	ug/L	<0.20	0.20	0.050	5384306
1,1,2-Trichloroethane	ug/L	<0.50	0.50	0.050	5384306
Trichloroethylene	ug/L	<0.20	0.20	0.050	5384306
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	0.50	0.10	5384306
Vinyl Chloride	ug/L	<0.20	0.20	0.050	5384306
p+m-Xylene	ug/L	<0.20	0.20	0.010	5384306
o-Xylene	ug/L	<0.20	0.20	0.010	5384306
Total Xylenes	ug/L	<0.20	0.20	0.010	5384306
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	101			5384306
D4-1,2-Dichloroethane	%	99			5384306
D8-Toluene	%	97			5384306

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QC Batch = Quality Control Batch

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Maxxam Job #: B823857
Report Date: 2018/02/07

AEL Environment
Client Project #: 10869
Site Location: 1871 MERIVALE RD OTTAWA
Sampler Initials: SR

TEST SUMMARY

Maxxam ID: GAC469
Sample ID: A0475
Matrix: Water

Collected: 2018/01/31
Shipped:
Received: 2018/01/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	5381894	N/A	2018/02/05	Deonarine Ramnarine
Chromium (VI) in Water	IC	5381811	N/A	2018/02/05	Lang Le
Free (WAD) Cyanide	SKAL/CN	5384402	N/A	2018/02/05	Louise Harding
Mercury	CV/AA	5382545	2018/02/02	2018/02/05	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5382406	N/A	2018/02/05	Matthew Ritenburg

Maxxam ID: GAC469 Dup
Sample ID: A0475
Matrix: Water

Collected: 2018/01/31
Shipped:
Received: 2018/01/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	5382406	N/A	2018/02/05	Matthew Ritenburg

Maxxam ID: GAC470
Sample ID: A0480
Matrix: Water

Collected: 2018/01/31
Shipped:
Received: 2018/01/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	5381894	N/A	2018/02/05	Deonarine Ramnarine
Chromium (VI) in Water	IC	5381811	N/A	2018/02/05	Lang Le
Free (WAD) Cyanide	SKAL/CN	5384402	N/A	2018/02/05	Louise Harding
Mercury	CV/AA	5382545	2018/02/02	2018/02/05	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	5382406	N/A	2018/02/05	Matthew Ritenburg

Maxxam ID: GAC470 Dup
Sample ID: A0480
Matrix: Water

Collected: 2018/01/31
Shipped:
Received: 2018/01/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	5381894	N/A	2018/02/05	Deonarine Ramnarine

Maxxam ID: GAC471
Sample ID: TRIP BLANK
Matrix: Water

Collected: 2018/01/31
Shipped:
Received: 2018/01/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	5379370	N/A	2018/02/06	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	5384306	N/A	2018/02/05	Juan Pangilinan

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AEL Environment
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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.0°C

Results relate only to the items tested.

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Site Location: 1871 MERIVALE RD OTTAWA
Sampler Initials: SR

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5381811	LLE	Matrix Spike	Chromium (VI)	2018/02/05		97	%	80 - 120
5381811	LLE	Spiked Blank	Chromium (VI)	2018/02/05		99	%	80 - 120
5381811	LLE	Method Blank	Chromium (VI)	2018/02/05	<0.50		ug/L	
5381811	LLE	RPD	Chromium (VI)	2018/02/05	NC		%	20
5381894	DRM	Matrix Spike [GAC470-01]	Dissolved Chloride (Cl)	2018/02/05		NC	%	80 - 120
5381894	DRM	Spiked Blank	Dissolved Chloride (Cl)	2018/02/05		104	%	80 - 120
5381894	DRM	Method Blank	Dissolved Chloride (Cl)	2018/02/05	<1.0		mg/L	
5381894	DRM	RPD [GAC470-01]	Dissolved Chloride (Cl)	2018/02/05	1.6		%	20
5382406	MRG	Matrix Spike [GAC469-05]	Dissolved Antimony (Sb)	2018/02/05		104	%	80 - 120
			Dissolved Arsenic (As)	2018/02/05		99	%	80 - 120
			Dissolved Barium (Ba)	2018/02/05		99	%	80 - 120
			Dissolved Beryllium (Be)	2018/02/05		102	%	80 - 120
			Dissolved Boron (B)	2018/02/05		103	%	80 - 120
			Dissolved Cadmium (Cd)	2018/02/05		100	%	80 - 120
			Dissolved Chromium (Cr)	2018/02/05		98	%	80 - 120
			Dissolved Cobalt (Co)	2018/02/05		97	%	80 - 120
			Dissolved Copper (Cu)	2018/02/05		101	%	80 - 120
			Dissolved Lead (Pb)	2018/02/05		94	%	80 - 120
			Dissolved Molybdenum (Mo)	2018/02/05		102	%	80 - 120
			Dissolved Nickel (Ni)	2018/02/05		97	%	80 - 120
			Dissolved Selenium (Se)	2018/02/05		94	%	80 - 120
			Dissolved Silver (Ag)	2018/02/05		96	%	80 - 120
			Dissolved Sodium (Na)	2018/02/05		NC	%	80 - 120
			Dissolved Thallium (Tl)	2018/02/05		94	%	80 - 120
			Dissolved Uranium (U)	2018/02/05		94	%	80 - 120
			Dissolved Vanadium (V)	2018/02/05		98	%	80 - 120
			Dissolved Zinc (Zn)	2018/02/05		88	%	80 - 120
5382406	MRG	Spiked Blank	Dissolved Antimony (Sb)	2018/02/05		102	%	80 - 120
			Dissolved Arsenic (As)	2018/02/05		99	%	80 - 120
			Dissolved Barium (Ba)	2018/02/05		98	%	80 - 120
			Dissolved Beryllium (Be)	2018/02/05		100	%	80 - 120
			Dissolved Boron (B)	2018/02/05		103	%	80 - 120
			Dissolved Cadmium (Cd)	2018/02/05		100	%	80 - 120
			Dissolved Chromium (Cr)	2018/02/05		100	%	80 - 120
			Dissolved Cobalt (Co)	2018/02/05		98	%	80 - 120
			Dissolved Copper (Cu)	2018/02/05		102	%	80 - 120
			Dissolved Lead (Pb)	2018/02/05		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2018/02/05		100	%	80 - 120
			Dissolved Nickel (Ni)	2018/02/05		99	%	80 - 120
			Dissolved Selenium (Se)	2018/02/05		99	%	80 - 120
			Dissolved Silver (Ag)	2018/02/05		99	%	80 - 120
			Dissolved Sodium (Na)	2018/02/05		101	%	80 - 120
			Dissolved Thallium (Tl)	2018/02/05		97	%	80 - 120
			Dissolved Uranium (U)	2018/02/05		97	%	80 - 120
			Dissolved Vanadium (V)	2018/02/05		98	%	80 - 120
			Dissolved Zinc (Zn)	2018/02/05		90	%	80 - 120
5382406	MRG	Method Blank	Dissolved Antimony (Sb)	2018/02/05	<0.50		ug/L	
			Dissolved Arsenic (As)	2018/02/05	<1.0		ug/L	
			Dissolved Barium (Ba)	2018/02/05	<2.0		ug/L	
			Dissolved Beryllium (Be)	2018/02/05	<0.50		ug/L	
			Dissolved Boron (B)	2018/02/05	<10		ug/L	
			Dissolved Cadmium (Cd)	2018/02/05	<0.10		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Chromium (Cr)	2018/02/05	<5.0		ug/L	
			Dissolved Cobalt (Co)	2018/02/05	<0.50		ug/L	
			Dissolved Copper (Cu)	2018/02/05	<1.0		ug/L	
			Dissolved Lead (Pb)	2018/02/05	<0.50		ug/L	
			Dissolved Molybdenum (Mo)	2018/02/05	<0.50		ug/L	
			Dissolved Nickel (Ni)	2018/02/05	<1.0		ug/L	
			Dissolved Selenium (Se)	2018/02/05	<2.0		ug/L	
			Dissolved Silver (Ag)	2018/02/05	<0.10		ug/L	
			Dissolved Sodium (Na)	2018/02/05	<100		ug/L	
			Dissolved Thallium (Tl)	2018/02/05	<0.050		ug/L	
			Dissolved Uranium (U)	2018/02/05	<0.10		ug/L	
			Dissolved Vanadium (V)	2018/02/05	<0.50		ug/L	
			Dissolved Zinc (Zn)	2018/02/05	<5.0		ug/L	
5382406	MRG	RPD [GAC469-05]	Dissolved Antimony (Sb)	2018/02/05	NC		%	20
			Dissolved Arsenic (As)	2018/02/05	NC		%	20
			Dissolved Barium (Ba)	2018/02/05	2.2		%	20
			Dissolved Beryllium (Be)	2018/02/05	NC		%	20
			Dissolved Boron (B)	2018/02/05	3.0		%	20
			Dissolved Cadmium (Cd)	2018/02/05	NC		%	20
			Dissolved Chromium (Cr)	2018/02/05	NC		%	20
			Dissolved Cobalt (Co)	2018/02/05	0.067		%	20
			Dissolved Copper (Cu)	2018/02/05	0.50		%	20
			Dissolved Lead (Pb)	2018/02/05	NC		%	20
			Dissolved Molybdenum (Mo)	2018/02/05	1.6		%	20
			Dissolved Nickel (Ni)	2018/02/05	NC		%	20
			Dissolved Selenium (Se)	2018/02/05	NC		%	20
			Dissolved Silver (Ag)	2018/02/05	NC		%	20
			Dissolved Sodium (Na)	2018/02/05	1.1		%	20
			Dissolved Thallium (Tl)	2018/02/05	NC		%	20
			Dissolved Uranium (U)	2018/02/05	12		%	20
			Dissolved Vanadium (V)	2018/02/05	2.5		%	20
			Dissolved Zinc (Zn)	2018/02/05	NC		%	20
5382545	RON	Matrix Spike	Mercury (Hg)	2018/02/05		118	%	75 - 125
5382545	RON	Spiked Blank	Mercury (Hg)	2018/02/05		108	%	80 - 120
5382545	RON	Method Blank	Mercury (Hg)	2018/02/05	<0.1		ug/L	
5382545	RON	RPD	Mercury (Hg)	2018/02/05	NC		%	20
5384306	JPN	Matrix Spike	4-Bromofluorobenzene	2018/02/05		103	%	70 - 130
			D4-1,2-Dichloroethane	2018/02/05		100	%	70 - 130
			D8-Toluene	2018/02/05		98	%	70 - 130
			Acetone (2-Propanone)	2018/02/05		116	%	60 - 140
			Benzene	2018/02/05		102	%	70 - 130
			Bromodichloromethane	2018/02/05		105	%	70 - 130
			Bromoform	2018/02/05		111	%	70 - 130
			Bromomethane	2018/02/05		106	%	60 - 140
			Carbon Tetrachloride	2018/02/05		102	%	70 - 130
			Chlorobenzene	2018/02/05		105	%	70 - 130
			Chloroform	2018/02/05		103	%	70 - 130
			Dibromochloromethane	2018/02/05		107	%	70 - 130
			1,2-Dichlorobenzene	2018/02/05		105	%	70 - 130
			1,3-Dichlorobenzene	2018/02/05		105	%	70 - 130
			1,4-Dichlorobenzene	2018/02/05		106	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2018/02/05		98	%	60 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,1-Dichloroethane	2018/02/05		103	%	70 - 130
			1,2-Dichloroethane	2018/02/05		99	%	70 - 130
			1,1-Dichloroethylene	2018/02/05		101	%	70 - 130
			cis-1,2-Dichloroethylene	2018/02/05		106	%	70 - 130
			trans-1,2-Dichloroethylene	2018/02/05		104	%	70 - 130
			1,2-Dichloropropane	2018/02/05		106	%	70 - 130
			cis-1,3-Dichloropropene	2018/02/05		117	%	70 - 130
			trans-1,3-Dichloropropene	2018/02/05		121	%	70 - 130
			Ethylbenzene	2018/02/05		103	%	70 - 130
			Ethylene Dibromide	2018/02/05		109	%	70 - 130
			Hexane	2018/02/05		101	%	70 - 130
			Methylene Chloride(Dichloromethane)	2018/02/05		104	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2018/02/05		116	%	60 - 140
			Methyl Isobutyl Ketone	2018/02/05		113	%	70 - 130
			Methyl t-butyl ether (MTBE)	2018/02/05		102	%	70 - 130
			Styrene	2018/02/05		109	%	70 - 130
			1,1,1,2-Tetrachloroethane	2018/02/05		106	%	70 - 130
			1,1,2,2-Tetrachloroethane	2018/02/05		110	%	70 - 130
			Tetrachloroethylene	2018/02/05		103	%	70 - 130
			Toluene	2018/02/05		98	%	70 - 130
			1,1,1-Trichloroethane	2018/02/05		103	%	70 - 130
			1,1,2-Trichloroethane	2018/02/05		103	%	70 - 130
			Trichloroethylene	2018/02/05		106	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2018/02/05		100	%	70 - 130
			Vinyl Chloride	2018/02/05		100	%	70 - 130
			p+m-Xylene	2018/02/05		104	%	70 - 130
			o-Xylene	2018/02/05		103	%	70 - 130
5384306	JPN	Spiked Blank	4-Bromofluorobenzene	2018/02/05		102	%	70 - 130
			D4-1,2-Dichloroethane	2018/02/05		94	%	70 - 130
			D8-Toluene	2018/02/05		100	%	70 - 130
			Acetone (2-Propanone)	2018/02/05		88	%	60 - 140
			Benzene	2018/02/05		89	%	70 - 130
			Bromodichloromethane	2018/02/05		91	%	70 - 130
			Bromoform	2018/02/05		93	%	70 - 130
			Bromomethane	2018/02/05		84	%	60 - 140
			Carbon Tetrachloride	2018/02/05		94	%	70 - 130
			Chlorobenzene	2018/02/05		93	%	70 - 130
			Chloroform	2018/02/05		90	%	70 - 130
			Dibromochloromethane	2018/02/05		91	%	70 - 130
			1,2-Dichlorobenzene	2018/02/05		94	%	70 - 130
			1,3-Dichlorobenzene	2018/02/05		96	%	70 - 130
			1,4-Dichlorobenzene	2018/02/05		96	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2018/02/05		88	%	60 - 140
			1,1-Dichloroethane	2018/02/05		91	%	70 - 130
			1,2-Dichloroethane	2018/02/05		82	%	70 - 130
			1,1-Dichloroethylene	2018/02/05		91	%	70 - 130
			cis-1,2-Dichloroethylene	2018/02/05		91	%	70 - 130
			trans-1,2-Dichloroethylene	2018/02/05		93	%	70 - 130
			1,2-Dichloropropane	2018/02/05		91	%	70 - 130
			cis-1,3-Dichloropropene	2018/02/05		85	%	70 - 130
			trans-1,3-Dichloropropene	2018/02/05		79	%	70 - 130
			Ethylbenzene	2018/02/05		94	%	70 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Ethylene Dibromide	2018/02/05		90	%	70 - 130
			Hexane	2018/02/05		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2018/02/05		88	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2018/02/05		89	%	60 - 140
			Methyl Isobutyl Ketone	2018/02/05		90	%	70 - 130
			Methyl t-butyl ether (MTBE)	2018/02/05		89	%	70 - 130
			Styrene	2018/02/05		97	%	70 - 130
			1,1,1,2-Tetrachloroethane	2018/02/05		94	%	70 - 130
			1,1,2,2-Tetrachloroethane	2018/02/05		90	%	70 - 130
			Tetrachloroethylene	2018/02/05		95	%	70 - 130
			Toluene	2018/02/05		89	%	70 - 130
			1,1,1-Trichloroethane	2018/02/05		93	%	70 - 130
			1,1,2-Trichloroethane	2018/02/05		86	%	70 - 130
			Trichloroethylene	2018/02/05		95	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2018/02/05		91	%	70 - 130
			Vinyl Chloride	2018/02/05		89	%	70 - 130
			p+m-Xylene	2018/02/05		96	%	70 - 130
			o-Xylene	2018/02/05		94	%	70 - 130
5384306	JPN	Method Blank	4-Bromofluorobenzene	2018/02/05		102	%	70 - 130
			D4-1,2-Dichloroethane	2018/02/05		98	%	70 - 130
			D8-Toluene	2018/02/05		98	%	70 - 130
			Acetone (2-Propanone)	2018/02/05	<10		ug/L	
			Benzene	2018/02/05	<0.20		ug/L	
			Bromodichloromethane	2018/02/05	<0.50		ug/L	
			Bromoform	2018/02/05	<1.0		ug/L	
			Bromomethane	2018/02/05	<0.50		ug/L	
			Carbon Tetrachloride	2018/02/05	<0.20		ug/L	
			Chlorobenzene	2018/02/05	<0.20		ug/L	
			Chloroform	2018/02/05	<0.20		ug/L	
			Dibromochloromethane	2018/02/05	<0.50		ug/L	
			1,2-Dichlorobenzene	2018/02/05	<0.50		ug/L	
			1,3-Dichlorobenzene	2018/02/05	<0.50		ug/L	
			1,4-Dichlorobenzene	2018/02/05	<0.50		ug/L	
			Dichlorodifluoromethane (FREON 12)	2018/02/05	<1.0		ug/L	
			1,1-Dichloroethane	2018/02/05	<0.20		ug/L	
			1,2-Dichloroethane	2018/02/05	<0.50		ug/L	
			1,1-Dichloroethylene	2018/02/05	<0.20		ug/L	
			cis-1,2-Dichloroethylene	2018/02/05	<0.50		ug/L	
			trans-1,2-Dichloroethylene	2018/02/05	<0.50		ug/L	
			1,2-Dichloropropane	2018/02/05	<0.20		ug/L	
			cis-1,3-Dichloropropene	2018/02/05	<0.30		ug/L	
			trans-1,3-Dichloropropene	2018/02/05	<0.40		ug/L	
			Ethylbenzene	2018/02/05	<0.20		ug/L	
			Ethylene Dibromide	2018/02/05	<0.20		ug/L	
			Hexane	2018/02/05	<1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2018/02/05	<2.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2018/02/05	<10		ug/L	
			Methyl Isobutyl Ketone	2018/02/05	<5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2018/02/05	<0.50		ug/L	
			Styrene	2018/02/05	<0.50		ug/L	
			1,1,1,2-Tetrachloroethane	2018/02/05	<0.50		ug/L	
			1,1,2,2-Tetrachloroethane	2018/02/05	<0.50		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Tetrachloroethylene	2018/02/05	<0.20		ug/L	
			Toluene	2018/02/05	<0.20		ug/L	
			1,1,1-Trichloroethane	2018/02/05	<0.20		ug/L	
			1,1,2-Trichloroethane	2018/02/05	<0.50		ug/L	
			Trichloroethylene	2018/02/05	<0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2018/02/05	<0.50		ug/L	
			Vinyl Chloride	2018/02/05	<0.20		ug/L	
			p+m-Xylene	2018/02/05	<0.20		ug/L	
			o-Xylene	2018/02/05	<0.20		ug/L	
			Total Xylenes	2018/02/05	<0.20		ug/L	
5384306	JPN	RPD	Acetone (2-Propanone)	2018/02/05	NC		%	30
			Benzene	2018/02/05	NC		%	30
			Bromodichloromethane	2018/02/05	NC		%	30
			Bromoform	2018/02/05	NC		%	30
			Bromomethane	2018/02/05	NC		%	30
			Carbon Tetrachloride	2018/02/05	NC		%	30
			Chlorobenzene	2018/02/05	NC		%	30
			Chloroform	2018/02/05	NC		%	30
			Dibromochloromethane	2018/02/05	NC		%	30
			1,2-Dichlorobenzene	2018/02/05	NC		%	30
			1,3-Dichlorobenzene	2018/02/05	NC		%	30
			1,4-Dichlorobenzene	2018/02/05	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2018/02/05	NC		%	30
			1,1-Dichloroethane	2018/02/05	NC		%	30
			1,2-Dichloroethane	2018/02/05	NC		%	30
			1,1-Dichloroethylene	2018/02/05	NC		%	30
			cis-1,2-Dichloroethylene	2018/02/05	NC		%	30
			trans-1,2-Dichloroethylene	2018/02/05	NC		%	30
			1,2-Dichloropropane	2018/02/05	NC		%	30
			cis-1,3-Dichloropropene	2018/02/05	NC		%	30
			trans-1,3-Dichloropropene	2018/02/05	NC		%	30
			Ethylbenzene	2018/02/05	NC		%	30
			Ethylene Dibromide	2018/02/05	NC		%	30
			Hexane	2018/02/05	NC		%	30
			Methylene Chloride(Dichloromethane)	2018/02/05	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2018/02/05	NC		%	30
			Methyl Isobutyl Ketone	2018/02/05	NC		%	30
			Methyl t-butyl ether (MTBE)	2018/02/05	NC		%	30
			Styrene	2018/02/05	NC		%	30
			1,1,1,2-Tetrachloroethane	2018/02/05	NC		%	30
			1,1,2,2-Tetrachloroethane	2018/02/05	NC		%	30
			Tetrachloroethylene	2018/02/05	NC		%	30
			Toluene	2018/02/05	1.8		%	30
			1,1,1-Trichloroethane	2018/02/05	NC		%	30
			1,1,2-Trichloroethane	2018/02/05	NC		%	30
			Trichloroethylene	2018/02/05	NC		%	30
			Trichlorofluoromethane (FREON 11)	2018/02/05	NC		%	30
			Vinyl Chloride	2018/02/05	NC		%	30
			p+m-Xylene	2018/02/05	2.5		%	30
			o-Xylene	2018/02/05	NC		%	30
			Total Xylenes	2018/02/05	2.5		%	30
5384402	LHA	Matrix Spike	WAD Cyanide (Free)	2018/02/05		94	%	80 - 120

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Maxxam Job #: B823857
Report Date: 2018/02/07

AEL Environment
Client Project #: 10869
Site Location: 1871 MERIVALE RD OTTAWA
Sampler Initials: SR

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5384402	LHA	Spiked Blank	WAD Cyanide (Free)	2018/02/05		97	%	80 - 120
5384402	LHA	Method Blank	WAD Cyanide (Free)	2018/02/05	<1		ug/L	
5384402	LHA	RPD	WAD Cyanide (Free)	2018/02/05	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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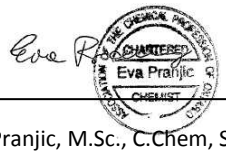
Maxxam Job #: B823857
Report Date: 2018/02/07

AEL Environment
Client Project #: 10869
Site Location: 1871 MERIVALE RD OTTAWA
Sampler Initials: SR

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam
A Bureau Veritas Group Company

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31-Jan-18 12:45
Antonella Brasil
B823857

Page 1 of 1

MAF ENV-1146

Bottle Order #: 631294

Project Manager: Antonella Brasil

C#631294-01-01

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#14134 AEL Environment	Company Name:		Quotation #:	B71396
Attention:	Accounting	Attention:	Reporting Group	P.O. #:	
Address:	1705 Argentia Rd Unit 3 Mississauga ON L5N 3A9	Address:		Project:	~~10892~~ 10869
Tel:	(416) 657-2367 x Fax: (416) 647-2367 x	Tel:	Fax:	Project Name:	1871 HEMLOCK RD OTTAWA
Email:	twilson@aelenv.com	Email:	lab@aeonegmond.com, STEVE-SLTE ON TARIOENS TINET	Site #: Sampled By:	S ROWLAND

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☐ Res/Park ☐ Medium/Fine	☐ CCME ☐ Sanitary Sewer Bylaw	
☒ Table 2 ☒ Ind/Comm ☐ Coarse	☐ Reg 558 ☐ Storm Sewer Bylaw	
☐ Table 3 ☐ Agri/Other ☐ For RSC	☐ MISA Municipality ____	
☐ Table ____	☐ PWQO	
	☐ Other ____	

Include Criteria on Certificate of Analysis (Y/N)? ____

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ____ Time Required: ____ ☐
Rush Confirmation Number: ____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153/04 Metals + Inorganics	VOC	# of Bottles	Comments
1		A0475	2018/01/31	12:30pm	WATER	Y	✓		5	
2		A0480	"	"	WATER	Y	✓	-	5	
3		TRIP BLANK	"	-	-			✓	2	
4										
5						-				
6										
7										
8										
9										
10										ON ICE

RECEIVED IN OTTAWA

RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
STEVEN ROWLAND	18/01/31	12:46	MAXXAM DELIV. DEPOT	2018/02/01	08:00	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	4.1, 4	Present		
		Intact	X	

2|2|2

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

White: Maxxa Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

AELenvironment
A division of Aeon Egmond Ltd.

1705 Argentia Road, Unit 3 | Mississauga, Ontario, L5N 3A9
Tel/Fax: 416-657-2367| Toll free: 1-800-267-4797
info@aelenv.com | www.aelenv.com

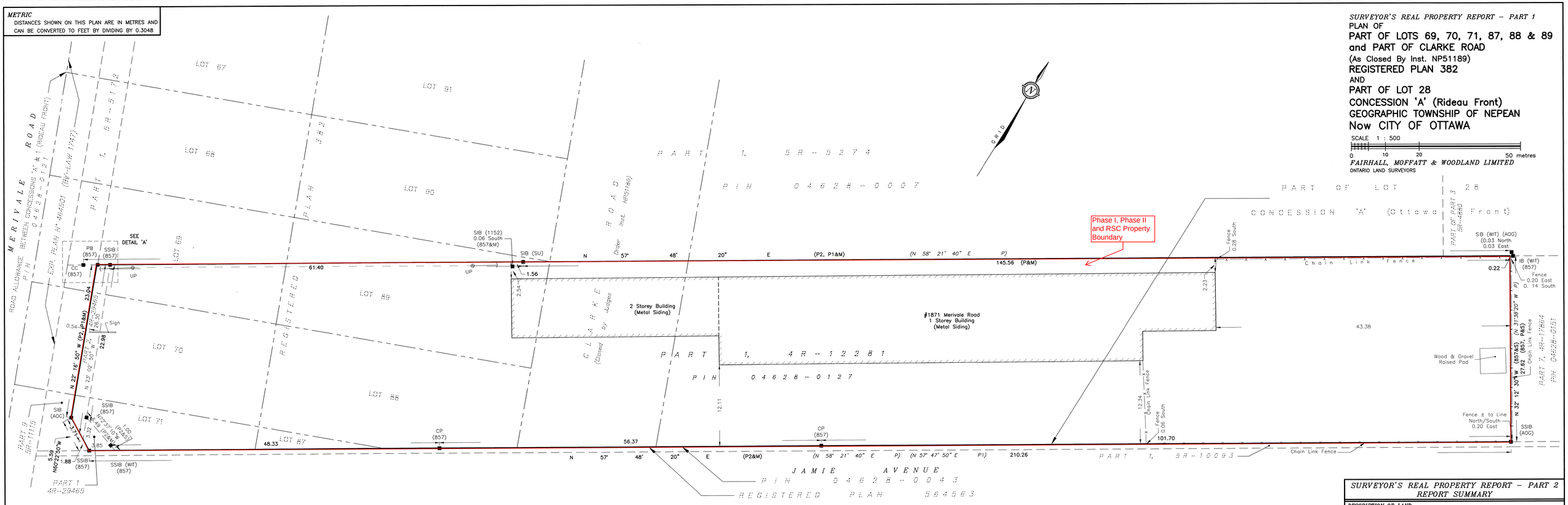
APPENDIX 4
Survey of Phase II Property

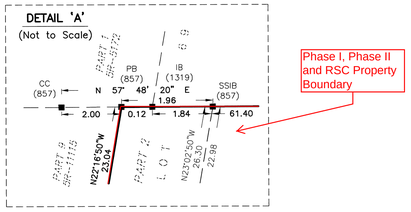
METRIC
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

SURVEYOR'S REAL PROPERTY REPORT – PART 1
PLAN OF
PART OF LOTS 69, 70, 71, 87, 88 & 89 and PART OF CLARKE ROAD
(As Closed By Inst. NP51189)
REGISTERED PLAN 382
AND
PART OF LOT 28
CONCESSION 'A' (Rideau Front)
GEOGRAPHIC TOWNSHIP OF NEPEAN
Now CITY OF OTTAWA

SCALE 1 : 500
0 10 20 50 metres

FAIRHALL, MOFFATT & WOODLAND LIMITED
ONTARIO LAND SURVEYORS





NOTE

BEARINGS ARE GRID, DERIVED FROM NCC HORIZONTAL CONTROL MONUMENTS 019710637 (N 5022465.812, E 365416.840) AND 019861625 (N 5022141.837, E 363270.732) AND ARE REFERRED TO THE CENTRAL MERIDIAN, 76°30'W LONGITUDE MTM ZONE 9, (NAD83 ORIGINAL).

LEGEND

□ – SURVEY MONUMENT SET
■ – SURVEY MONUMENT FOUND
SIB – STANDARD IRON BAR
SSIB – SHORT STANDARD IRON BAR
IB – IRON BAR
PB – PLASTIC BAR
CC – CUT CROSS
CP – CONCRETE PIN
(P) – PLAN 4R–12281
(P1) – PLAN 5R–11115
(P2) – PLAN 4R–29465
(S) – SET
(M) – MEASURED
(857) – FAIRHALL, MOFFATT & WOODLAND LIMITED, O.L.S. (REF. 130 – A (RF) NP & 155 – A (RF) NP)
(1152) – J. E. KIHL, O.L.S.
(1319) – W. J. WEBSTER, O.L.S.
(AOG) – ANNIS, O'SULLIVAN, VOLLEBEKK SURVEYING LTD., O.L.S.
(SU) – SOURCE UNKNOWN
(NCC) – NATIONAL CAPITAL COMMISSION
(WIT) – WITNESS
PIN – PROPERTY IDENTIFIER NUMBER
UP⊗ – UTILITY POLE
⟵ – GUY WIRE & ANCHOR
– – – – OVERHEAD UTILITY WIRES
═══ – CURBING

SURVEYOR'S REAL PROPERTY REPORT – PART 2
REPORT SUMMARY

DESCRIPTION OF LAND
PART OF LOTS 69, 70, 71, 87, 88 & 89 AND PART OF CLARKE ROAD (CLOSED BY JUDGES ORDER, INST. NP51189), REGISTERED PLAN N° 382 AND PART OF LOT 28, CONCESSION 'A' (RIDEAU FRONT), GEOGRAPHIC TOWNSHIP OF NEPEAN, NOW CITY OF OTTAWA, DESIGNATED AS PART 1, 4R–12281 AS IN ALL OF PIN 04628–0127.

REGISTERED EASEMENTS
NONE REGISTERED.

REMARK
PERIMETER FENCES ARE AS SHOWN ON PART 1, THE PLAN.

ZONING
COMPLIANCE WITH ZONING, LAND USE, ENVIRONMENTAL AND BUILDING REGULATIONS NOT CERTIFIED BY THIS REPORT.

THIS REPORT WAS PREPARED FOR
BENSON GROUP INC.
THE UNDERSIGNED ACCEPTS NO RESPONSIBILITY FOR USE BY OTHER PARTIES.

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2024691

SURVEYOR'S CERTIFICATE
I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON JULY 25, 2017.

2017/08/07
DATE

JOHN H. GUTRI
ONTARIO LAND SURVEYOR

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR in accordance with Regulation 1026, Section 29 (3).

Fairhall Moffatt & Woodland
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JOB No.
X 2 8 5 0 0

E 365705, N 5021820

REFERENCE No.
155 (a) – A (RF) NP

S:\JOBS\X28500\DWGS 2017–08–09
UP285X–SR.DWG (nj)

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APPENDIX 5
Ministry of the Environment and Climate Change Standards

TABLE 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Table 2	Soil Standards (other than sediment) µg/g			Potable Ground Water µg/L
Contaminant	Agricultural or Other Property Use	Residential/ Parkland/Institutional Property Use	Industrial/ Commercial/Community Property Use	All Types of Property Use
Acenaphthene	(29) 7.9	(29) 7.9	(29) 21	4.1
Acenaphthylene	(0.17) 0.15	(0.17) 0.15	(0.17) 0.15	1
Acetone	(28) 16	(28) 16	(28) 16	2700
Aldrin	0.05	0.05	(0.11) 0.088	0.35
Anthracene	(0.74) 0.67	(0.74) 0.67	(0.74) 0.67	2.4
Antimony	7.5	7.5	(50) 40	6
Arsenic	11	18	18	25
Barium	390	390	670	1000
Benzene	(0.17) 0.21	(0.17) 0.21	(0.4) 0.32	5
Benz[a]anthracene	(0.63) 0.5	(0.63) 0.5	0.96	1
Benzo[a]pyrene	0.078	0.3	0.3	0.01
Benzo[b]fluoranthene	0.78	0.78	0.96	0.1
Benzo[ghi]perylene	(7.8) 6.6	(7.8) 6.6	9.6	0.2
Benzo[k]fluoranthene	0.78	0.78	0.96	0.1
Beryllium	(5) 4	(5) 4	(10) 8	4
Biphenyl 1,1'-	(1.1) 0.31	(1.1) 0.31	(210) 52	0.5
Bis(2-chloroethyl)ether	0.5	0.5	0.5	5
Bis(2-chloroisopropyl)ether	(1.8) 0.67	(1.8) 0.67	(13) 11	120
Bis(2-ethylhexyl)phthalate	5	5	(35) 28	10
Boron (Hot Water Soluble)*	1.5	1.5	2	NA
Boron (total)	120	120	120	5000
Bromodichloromethane	(1.9) 1.5	(1.9) 1.5	(1.9) 1.5	16
Bromoform	(0.26) 0.27	(0.26) 0.27	(1.7) 0.61	25
Bromomethane	0.05	0.05	0.05	0.89
Cadmium	1	1.2	1.9	2.7
Carbon Tetrachloride	(0.12) 0.05	(0.12) 0.05	(0.71) 0.21	(5) 0.79
Chlordane	0.05	0.05	0.05	7
Chloroaniline p-	(0.53) 0.5	(0.53) 0.5	(0.53) 0.5	10
Chlorobenzene	(2.7) 2.4	(2.7) 2.4	(2.7) 2.4	30
Chloroform	(0.18) 0.05	(0.18) 0.05	(0.18) 0.47	(22) 2.4
Chlorophenol, 2-	(2) 1.6	(2) 1.6	(3.9) 3.1	8.9
Chromium Total	160	160	160	50
Chromium VI	(10) 8	(10) 8	(10) 8	25
Chrysene	(7.8) 7	(7.8) 7	9.6	0.1
Cobalt	22	22	(100) 80	3.8
Copper	(180) 140	(180) 140	(300) 230	87
Cyanide (CN-)	0.051	0.051	0.051	66
Dibenz[a h]anthracene	0.1	0.1	0.1	0.2
Dibromochloromethane	(2.9) 2.3	(2.9) 2.3	(2.9) 2.3	25
Dichlorobenzene, 1,2-	(1.7) 1.2	(1.7) 1.2	(1.7) 1.2	3
Dichlorobenzene, 1,3-	(6) 4.8	(6) 4.8	(12) 9.6	59
Dichlorobenzene, 1,4-	(0.097) 0.083	(0.097) 0.083	(0.57) 0.2	1
Dichlorobenzidine, 3,3'-	1	1	1	0.5
Dichlorodifluoromethane	(25) 16	(25) 16	(25) 16	590
DDD	3.3	3.3	4.6	10
DDE	(0.33) 0.26	(0.33) 0.26	(0.65) 0.52	10
DDT	0.078	1.4	1.4	2.8
Dichloroethane, 1,1-	(0.6) 0.47	(0.6) 0.47	(0.6) 0.47	5
Dichloroethane, 1,2-	0.05	0.05	0.05	(5) 1.6
Dichloroethylene, 1,1-	0.05	0.05	(0.48) 0.064	(14) 1.6
Dichloroethylene, 1,2-cis-	(2.5) 1.9	(2.5) 1.9	(2.5) 1.9	(17) 1.6
Dichloroethylene, 1,2-trans-	(0.75) 0.084	(0.75) 0.084	(2.5) 1.3	(17) 1.6
Dichlorophenol, 2,4-	(0.27) 0.19	(0.27) 0.19	(0.27) 0.19	20
Dichloropropane, 1,2-	(0.085) 0.05	(0.085) 0.05	(0.68) 0.16	5
Dichloropropene,1,3-	(0.081) 0.05	(0.081) 0.05	(0.081) 0.059	0.5
Dieldrin	0.05	0.05	(0.11) 0.088	0.35

Table 2	Soil Standards (other than sediment) µg/g			Potable Ground Water µg/L
Contaminant	Agricultural or Other Property Use	Residential/ Parkland/Institutional Property Use	Industrial/ Commercial/Community Property Use	All Types of Property Use
Diethyl Phthalate	0.5	0.5	0.5	38
Dimethylphthalate	0.5	0.5	0.5	38
Dimethylphenol, 2,4-	(53) 38	(53) 38	(53) 38	59
Dinitrophenol, 2,4-	(2.9) 2	(2.9) 2	(2.9) 2	10
Dinitrotoluene, 2,4 & 2,6-	0.5	0.5	0.5	5
Dioxane, 1,4	0.2	1.8	1.8	50
Dioxin/Furan (TEQ)	0.000013	0.000013	0.000099	0.000015
Endosulfan	0.04	0.04	(0.38) 0.3	1.5
Endrin	0.04	0.04	0.04	0.48
Ethylbenzene	(1.6) 1.1	(1.6) 1.1	(1.6) 1.1	2.4
Ethylene dibromide	0.05	0.05	0.05	0.2
Fluoranthene	0.69	0.69	9.6	0.41
Fluorene	(69) 62	(69) 62	(69) 62	120
Heptachlor	0.15	0.15	0.19	1.5
Heptachlor Epoxide	0.05	0.05	0.05	0.048
Hexachlorobenzene	0.52	0.52	0.66	1
Hexachlorobutadiene	(0.014) 0.012	(0.014) 0.012	(0.095) 0.031	(0.6) 0.44
Hexachlorocyclohexane Gamma-	(0.063) 0.056	(0.063) 0.056	(0.063) 0.056	1.2
Hexachloroethane	(0.071) 0.089	(0.071) 0.089	(0.43) 0.21	2.1
Hexane (n)	(34) 2.8	(34) 2.8	(88) 46	(520) 51
Indeno[1 2 3-cd]pyrene	(0.48) 0.38	(0.48) 0.38	(0.95) 0.76	0.2
Lead	45	120	120	10
Mercury	(1.8) 0.25	(1.8) 0.27	(20) 3.9	(1) 0.29
Methoxychlor	0.13	0.13	1.6	6.5
Methyl Ethyl Ketone	(44) 16	(44) 16	(88) 70	1800
Methyl Isobutyl Ketone	(4.3) 1.7	(4.3) 1.7	(210) 31	640
Methyl Mercury **	(0.0094) 0.0084	(0.0094) 0.0084	(0.0094) 0.0084	0.15
Methyl tert-Butyl Ether (MTBE)	(1.4) 0.75	(1.4) 0.75	(2.3) 1.6	15
Methylene Chloride	(0.96) 0.1	(0.96) 0.1	(2) 1.6	50
Methlynaphthalene, 2-(1-) ***	(3.4) 0.99	(3.4) 0.99	(42) 30	3.2
Molybdenum	6.9	6.9	40	70
Naphthalene	(0.75) 0.6	(0.75) 0.6	(28) 9.6	11
Nickel	(130) 100	(130) 100	(340) 270	100
Pentachlorophenol	0.1	0.1	(3.3) 2.9	30
Petroleum Hydrocarbons F1****	(65) 55	(65) 55	(65) 55	750
Petroleum Hydrocarbons F2	(150) 98	(150) 98	(250) 230	150
Petroleum Hydrocarbons F3	(1300) 300	(1300) 300	(2500) 1700	500
Petroleum Hydrocarbons F4	(5600) 2800	(5600) 2800	(6600) 3300	500
Phenanthrene	(7.8) 6.2	(7.8) 6.2	(16) 12	1
Phenol	9.4	9.4	9.4	890
Polychlorinated Biphenyls	0.35	0.35	1.1	3
Pyrene	78	78	96	4.1
Selenium	2.4	2.4	5.5	10
Silver	(25) 20	(25) 20	(50) 40	1.5
Styrene	(2.2) 0.7	(2.2) 0.7	(43) 34	5.4
Tetrachloroethane, 1,1,1,2-	(0.05) 0.058	(0.05) 0.058	(0.11) 0.087	1.1
Tetrachloroethane, 1,1,2,2-	0.05	0.05	(0.094) 0.05	1
Tetrachloroethylene	(2.3) 0.28	(2.3) 0.28	(2.5) 1.9	(17) 1.6
Thallium	1	1	3.3	2
Toluene	(6) 2.3	(6) 2.3	(9) 6.4	24
Trichlorobenzene, 1,2,4-	(1.4) 0.36	(1.4) 0.36	(16) 3.2	70
Trichloroethane, 1,1,1-	(3.4) 0.38	(3.4) 0.38	(12) 6.1	200
Trichloroethane, 1,1,2-	0.05	0.05	(0.11) 0.05	(5) 4.7
Trichloroethylene	(0.52) 0.061	(0.52) 0.061	(0.61) 0.55	(5) 1.6
Trichlorofluoromethane	(5.8) 4	(5.8) 4	(5.8) 4	150
Trichlorophenol, 2,4,5-	(5.5) 4.4	(5.5) 4.4	(10) 9.1	8.9
Trichlorophenol, 2,4,6-	(2.9) 2.1	(2.9) 2.1	(2.9) 2.1	2
Uranium	23	23	33	20
Vanadium	86	86	86	6.2
Vinyl Chloride	(0.022) 0.02	(0.022) 0.02	(0.25) 0.032	(1.7) 0.5

Table 2	Soil Standards (other than sediment) µg/g			Potable Ground Water µg/L
Contaminant	Agricultural or Other Property Use	Residential/ Parkland/Institutional Property Use	Industrial/ Commercial/Community Property Use	All Types of Property Use
Xylene Mixture	(25) 3.1	(25) 3.1	(30) 26	300
Zinc	340	340	340	1100
Electrical Conductivity (mS/cm)	0.7	0.7	1.4	NA
Chloride	NA	NA	NA	790000
Sodium Adsorption Ratio	5	5	12	NA
Sodium	NA	NA	NA	490000

Notes

( ) Standard in bracket applies to medium and fine textured soils

N/V= No value derived. N/A = Not applicable

* The boron standards are for hot water soluble extract for all surface soils. For subsurface soils the standards are for total boron (mixed strong acid digest), since plant protection for soils below the root zone is not a significant concern.

**Analysis for methyl mercury only applies when mercury (total) standard is exceeded

*** The methyl naphthalene standards are appliable to both 1-methyl naphthallene and 2- methyl naphthalene , with the provision that if both are detected the sum of the two must not exceed the standard.

**** F1 fraction does not include BTEX; however, the proponent has the choice as to whether or not to subtract BTEX from the analytical result.

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APPENDIX 6
Authorization and Terms

Terms of Engagement

GENERAL - Aeon Egmond Ltd. (AEL) and the Client (as described in the attached proposal) agree that any professional services, including subsequent services and charges (collectively the Services) to be provided by AEL relating to the Proposal will be subject to the following Terms and Conditions.

STANDARD OF CARE – Services provided by AEL will be conducted with a level of care ordinarily provided by the engineering and geosciences professions under similar site and time constraints. No warranty, express or implied is made. AEL's work may result in damage to surfaces, the restoration of which is not part of this agreement.

SITE ACCESS – The Client provides right of entry to AEL and their subcontractors to carry out the work.

INFORMATION – The Client warrants that it has provided AEL all information known to, or suspected by the Client relating to the past and existing condition of the Site, including but not limited to soil and groundwater data, hazardous materials and buried utilities. AEL may rely on such information.

SAFETY – AEL is responsible only for its activities and that of its employees.

PAYMENT - Charges for the service(s) rendered will be made in accordance with the Consultant's Schedule of Fees and Disbursements as the services are rendered. Invoices will be due and payable on receipt from the date of the invoice without holdback. Interest on overdue accounts is 2% per month, collection fees being extra and payable on collection (where allowed). If the account is not paid within 60 days from the date of the invoice then AEL shall have the right to suspend all work under this agreement without prejudice.

CHANGES IN WORK SCOPE – AEL and the Client agree that it may be necessary to modify the scope of work, schedule and/or cost estimate proposed in the agreement.

INSURANCE – AEL carries $1,000,000 in commercial general liability, professional liability and automobile coverage. Details on our standard coverage is available on request. AEL maintains worker's compensation coverage to statutory amounts.

LIMITATION OF LIABILITY – The Client agrees to limit the liability of AEL, its employees, officers, directors, agents, consultants and subcontractors to matters which arise directly from AEL's acts, errors or omissions and such that the total aggregate liability of AEL, whether arising in contract, tort, or otherwise, shall not exceed the greater of $50,000 or AEL's total fee for services. Any liability shall expire one year after substantial completion of the services. Neither party shall be responsible for lost revenues, profits, cost of capital, claims of customers, or other special, indirect, consequential or punitive damages.

MUTUAL INDEMNITY – AEL agrees to indemnity, defend and save harmless the Client, its officers, directors, employees, subcontractors and agents from and against all claims, damages, losses and expenses (including but not limited to legal fees) arising from personal injury, death or damage to third party property to the extent arising from the negligent acts, errors and omissions of AEL. The Client agrees to indemnity, defend and save harmless AEL, its officers, directors, employees, subcontractors and agents from and against all claims, damages, losses and expenses (including but not limited to legal fees) arising out of or resulting from the Services or work of AEL including but not limited to, claims made by third parties or any claims against AEL arising from the acts, errors, or omissions of the Client or others. To the fullest extent permitted by law, such indemnifications shall apply regardless of breach of contract or strict liability of AEL. Such indemnity shall not apply to the extent that AEL is finally determined to be negligent.

SUBSURFACE RISKS – Special risks occur whenever engineering or related disciplines are applied to identify subsurface conditions and even a comprehensive sampling and testing program may fail to detect certain conditions. The environmental, geological, geotechnical, geochemical and hydrogeological conditions that AEL interprets to exist between sampling points may differ from those that actually exist. The client agrees to waive any claim against AEL and agrees to defend, indemnify and hold AEL harmless from any claim or liability for injury or loss which may arise as a result of any damage and resulting impacts to subterranean structures, utilities or cross-contamination caused by any subsurface investigation.

DISCOVERY OF HAZARDOUS MATERIALS – The Client recognized that hazardous or suspected hazardous substances may be discovered at the site in the course of the work and that the presence of such substances are not the responsibility of AEL. All contaminated samples, materials, and field equipment that cannot be readily cleaned, shall remain the property and responsibility for the Client for proper handling and disposal. The client agrees that the discovery of any such substances shall constitute a changed condition for which AEL shall be fairly compensated. The client agrees to waive any claim against AEL and agree to defend, indemnify and hold AEL harmless from any claim or liability for injury or loss of any type arising from any alleged or actual discovery of hazardous or suspected hazardous substances.

DOCUMENTS – All reports, plans, data, notes, drawings and other documents prepared by AEL are considered its professional work product and shall remain the copyright property of AEL. The services and documents provided by AEL are intended for one time use only. At the request and expense of the Client, AEL shall provide the Client with copies of such documents. The Client acknowledges that electronic media are susceptible to unauthorised modification deterioration and incompatibility and therefore the Client cannot rely upon the electronic media version.

DELAYS – If site conditions prevent or inhibit performance of the work or unrevealed hazardous waste materials or conditions are encountered services under this Agreement may be delayed. The client shall not hold AEL responsible for damages or delays in performance caused by any such delays, or delays caused by the Client, its subcontractors, acts of God, acts and/or omissions of governmental authorities and regulatory agencies or other events which are beyond the reasonable control of AEL.

LITIGATION - The Client shall reimburse AEL for all direct expenses and time in connection with any disputes, litigation or arbitration involving representatives or documents of AEL arising out of the Services in accordance with AEL's prevailing Schedule of Fees.

PROPERTY TRANSACTIONS – In connection with any contemplated or actual purchase or sale of property related to the work, AEL will not be responsible for the independent conclusions, interpretations, interpolations and/or decisions for the Client or others arising out of data which is directly the product of AEL's services.

MISCELLANEOUS – This agreement supersedes all other agreements, oral or written and contains the entire agreement of at the parties concerning its subject matter. No cancellation, modification, amendment, deletion, addition, waiver or other change in the Agreement shall have effect unless specifically set forth in writing singed by the party to be bound thereby. **The Client acknowledges and agrees that if it accepts this engagement letter, or AEL performs the services contemplated therein, then the above Terms of Engagement shall constitute a binding agreement for the sole benefit of the Client and AEL and that no third party beneficiaries are created by this agreement.**

We're growing! Our new address is:
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