Phase Two Environmental Site Assessment

289 Carling Avenue

Ottawa, Ontario

Prepared for:
The City of Ottawa
Corporate Real Estate Office
5th Floor 110 Laurier Avenue West
Ottawa, Ontario
K1P 1J1

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FINAL REPORT

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DST Consulting Engineers Inc.

2150 Thurston Dr., Suite 203
Ottawa, ON KG 5T9
CANADA

Phone: 613.748.1415
Fax: 613.748.1356
www.dstgroup.com

EXECUTIVE SUMMARY

DST Consulting Engineers Inc. (DST) was retained by the City of Ottawa (the "City") to conduct a Phase Two Environmental Site Assessment (ESA) of the property located at 289 Carling Avenue in Ottawa, Ontario (herein referred to as "the Site" or "Phase Two Property"). The Site Location Map and a Site Plan are provided in Figures 1 and 2, respectively (refer to Appendix A).

The Site is located on the northeast corner of the intersection of Carling Avenue and Bell Street south in Ottawa, Ontario. The Site is an asphalt-paved parking lot with no on-site structures and/ or other facilities and consists of a rectangular parcel of land approximately 0.14 hectares (0.35 acres) in total area. The Site has some landscaping adjacent to the property boundaries.

The objective of the Phase Two ESA was to conduct intrusive investigation with sample collection and analyses to confirm the presence or absence of contaminants of concern (COC) in soils and groundwater, based the APEC identified in a Phase One ESA report entitled "Phase One Environmental Site Assessment, 289 Carling Avenue, Ottawa, Ontario", dated March, 2017. This Phase Two ESA was also conducted to delineate the lateral and vertical extent of COCs impacts in soil and in groundwater.

The scope of the Phase Two ESA generally consisted of the following:

- The advancement of four deep boreholes (MW17-01 to MW17-04) instrumented with groundwater monitoring to a maximum depth of 4.0 meters below ground surface (mbgs) at the north, east and west edges of the property boundaries and in the middle of the Site;
- The advancement of two boreholes (BH17-05 and BH17-06) to a maximum depth of approximately 0.7 mbgs to characterize on-site fill materials in the middle of the site and near the south property boundary;
- The collection of soil samples, including a field duplicate sample, from the six advanced boreholes, for laboratory analysis of COCs;
- The collection of groundwater samples, including a field duplicate sample, from newly installed monitoring wells, for laboratory analysis of COPCs including Petroleum Hydrocarbon(PHC) fractions F1 – F4, Benzene, Toluene, Ethylbenzene and Xylene (BTEX), Polycyclic Aromatic Hydrocarbon (PAHs), metals, inorganic and volatile organic compounds;

Based upon the results of the soil sampling conducted by DST February 11 – 12, 2017, soil exceedances of multiple COCs above applicable Table 7 Site Condition Standard (SCSs) for residential uses were identified in boreholes MW17-01, MW17-02, MW17-03, BH17-05 and BH17-06 (between 0.03 and 0.70 mbgs).

Metal analyses of the soil samples from boreholes/monitoring wells indicated exceedances of the applicable Ministry of the Environment and Climate Change (MOECC) Table 7 SCSs for antimony, arsenic, barium, chromium, lead, molybdenum, silver, zinc, and mercury. Results from the current investigation indicate that concentrations of PHCs F4 and benzene in soil samples from MW17-03 (0.03-0.50 mbgs) and MW17-01 (0.03-0.30 mbgs) exceeded the MOECC Table 7 SCS, respectively. PAHs exceedances of the MOECC Table 7 SCS were also found in soil samples collected from all DST's installed boreholes/monitoring wells with an exception of MW17-

04. Inorganic analyses of the soil samples from boreholes/monitoring wells also exceeded the MOECC Table 7 SCS for conductivity (EC), Sodium Adsorption Ratio (SAR) and free cyanide.

In addition to the above-noted soil exceedances, chloride and sodium impacted groundwater exceeding applicable Table 7 SCSs (for non-potable groundwater and coarse textured shallow soils) was also identified in monitoring well MW17-04 only. It is recommended that one additional round of groundwater monitoring and sampling occurs in the Spring of 2017 to confirm the chloride and sodium concentrations detected in the groundwater at MW17-04.

No free phase hydrocarbons, PHCs, PAHs and/or VOC concentrations were detected in the collected groundwater samples.

It is recommended that the above noted areas of COCs impacted soils be remediated appropriately, via the excavation and off-Site disposal of impacted fill materials on Site. Following the soil remediation, two rounds of confirmatory groundwater testing should be conducted (90 days apart). If groundwater impacts are detected post-remediation, a Site risk assessment for chlorides and sodium concentrations in the groundwater, should be developed.

The proposed remediation program would consist of the following:

- One additional round of groundwater monitoring and sampling in the Spring of 2017 to confirm the chloride and sodium concentrations detected in the groundwater at MW17-04.
- Excavation and disposal of approximately 1,000 m^3 of PAH, benzene, PHC F4 and metal impacted fill down to the bedrock surface;
- Confirmation of the excavation sidewalls if soil and/or fill materials are present; and,
- Two rounds of confirmatory groundwater sampling and testing (90 days apart).

DST also recommends drilling of one set of nested monitoring wells to 3.0 mbgs and one deep monitoring well to the depth of 6.0 mbgs at north side of the Site for post-remedial monitoring of the groundwater.

If the groundwater impacts are detected post-remediation, a site risk assessment for chlorides and sodium concentrations in the groundwater should be conducted.

Subsequent to the successful completion of this remediation program, confirmatory soil sampling and a groundwater monitoring program, a Record of Site Condition would be able to be filed with the MOECC.

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1. INTRODUCTION

DST Consulting Engineers Inc. (DST) was retained by the City of Ottawa (the "City") to conduct a Phase Two Environmental Site Assessment (ESA) of the property located at 289 Carling Avenue in Ottawa, Ontario (herein referred to as "the Site" or "Phase Two Property"). The Site Location Map and a Site Plan are provided in Figures 1 and 2, respectively (refer to Appendix A).

The objective of the Phase Two ESA was to conduct intrusive investigation with sample collection and analyses to confirm the presence or absence of potential contaminants of concern in soils and groundwater, based on Areas of Potential Environmental Concern (APECs) identified within a Phase I ESA report entitled "Phase One Environmental Site Assessment, 289 Carling Avenue, Ottawa, Ontario", dated March 28, 2017.

The investigation was performed in accordance with professional standards and procedures, which generally reflect the guidance provided under Ontario Regulation (O. Reg.) 153/04, as amended. DST understands that the Phase Two ESA must meet the requirements for the filing a Record of Site Condition (RSC).

1.1 Site Description

The Phase Two property is a paved parking lot with some landscaping adjacent to the property boundaries. DST conducted a Site reconnaissance on October 27, 2016, and no on-site structures and/ or other facilities were present. Based on the review of aerial photographs from 1928 to 1950, the property was developed with at least one building during that time; however, the Site appears to have been used as a parking lot from 1958 to present day.

The property is bounded by the following:

- North: residential town houses and single-storey residential dwellings;
- East: Multi-tenant resident building;
- South: Carling Avenue followed by single storey residential dwellings; and
- West: Bell Street followed by a vehicle parking lot.

1.2 Property Ownership

The property ownership details for the Site are provided in Table 1-1 below:

Table 1-1: Property Ownership

Property Owner:	Canada Lands Company CLC Limited
Engaged By:	City of Ottawa
Address:	110 Laurier Avenue West, 5th Floor West
Contact Information	613-580-2424 ext. 12567

1.3 Current and Proposed Future Uses

The Site is currently used as a vehicle parking lot. DST understands that the Site is intended to be re-developed with a low rise multi-tenant residential dwelling.

As this redevelopment would change the land use of the Site from commercial to residential, an RSC is required for this redevelopment.

1.4 Applicable Site Condition Standards

Based on Site conditions, the following Site Condition Standards (SCSs) were considered applicable to the Site:

Soil:

- Ontario Ministry of the Environment and Climate Change (MOECC) "Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act", April 2011, Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition. Residential/Parkland/Institutional Property Use, coarse textured soils.

Groundwater:

- MOECC "Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act", April 2011, Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition. All Type of Property Use, coarse textured soils.

The rationale for the selection of the above-referenced Site Condition Standards is provided in the following subsections.

1.4.1 Potable Water Well Locations

The Site and all properties within 250 m of the Site are serviced with potable water via the City of Ottawa municipal system which obtains its water from the Ottawa River.

Additionally, based on a search of the available MOECC well records, no potable water wells were identified within 250 m of the Site.

1.4.2 Environmentally Sensitive Sites

The following conditions may result in a site being considered environmentally sensitive according to O. Reg. 153/04.

1.4.2.1 Areas of Natural Significance

According to O. Reg. 153/04, if a site is within an area of natural significance or is adjacent to or within 30 m of an area of natural significance, it is considered environmentally sensitive. The

following table presents the criteria for areas of natural significance, as they are defined in O. Reg. 153/04, and the actual site conditions as they relate to the criteria.

Table 1-2: Areas of Natural Significance Definitions and Site Conditions

Definition Under O. Reg. 153/04 *"area of natural significance" means any of the following:*	**Site Conditions and Characteristics**
1. *An area reserved or set apart as a provincial park or conservation reserve under the Provincial Parks and Conservation Reserves Act, 2006.*	The Site is not located within or adjacent to a provincial park according to the Ontario Ministry of Natural Resources and Forestry (MNRF) nor is it located within or adjacent to a conservation reserve under the *Provincial Parks and Conservation Reserves Act, 2006* (MNRF, 2014).
2. *An area of natural and scientific interest (life science or earth science) identified by the Ministry of Natural Resources as having provincial significance.*	The Site is not located within or adjacent to an area of natural and scientific interest (life or earth sciences) (MNRF, 2014).
3. *A wetland identified by the Ministry of Natural Resources and Forestry as having provincial significance.*	The Site is not part of an area or within 30 m of an area identified by the MNRF as being a provincially significant wetland (MNRF, 2014).
4. *An area designated by a municipality in its official plan as environmentally significant, however expressed, including designations of areas as environmentally sensitive, as being of environmental concern and as being ecologically significant.*	The Site and surrounding properties are not considered to be environmentally sensitive, of environmental concern or ecologically significant according to the City of Toronto's Official Plan.
5. *An area designated as an escarpment natural area or an escarpment protection area by the Niagara Escarpment Plan under the Niagara Escarpment Planning and Development Act.*	The Site and surrounding properties are not part of the Niagara Escarpment natural/protection areas as defined by the Niagara Escarpment Planning and Development Act (Niagara Escarpment Commission, 2008).
6. *An area identified by the Ministry of Natural Resources as significant habitat of a threatened or endangered species.*	This Site and surrounding properties are not in an area identified as significant habitat of a threatened or endangered species.
7. *An area which is habitat of a species that is classified under section 7 of the Endangered Species Act, 2007 as a threatened or endangered species.*	The Site and surrounding properties are not in an area that is classified as habitat for a threatened or endangered species.
8. *Property within an area designated as a natural core area or natural linkage area within the area to which the Oak Ridges Moraine Conservation Plan under the Oak Ridges Moraine Conservation Act, 2001 applies.*	The Site and surrounding properties are not part of the Oak Ridges Moraine core/linkage areas as defined by the Oak Ridges Moraine Act (MNRF, 2014).
9. An area set apart as a wilderness area under the Wilderness Areas Act;	The area is not set apart as a wilderness area under the Wilderness Area Act (MNRF, 2010).

Therefore, based on the information provided in the above table, the Site and surrounding properties are not considered to be present within an area of natural significance according to O. Reg. 153/04.

1.4.3 Shallow Soil Conditions

Based on the results of the drilling activities, the entire Site has been developed with 0.60 to 0.70 metres of poor quality fill and/or soil overlying the bedrock (refer to Appendix C). Therefore, the Site is a shallow soil site according to O. Reg. 153/04 (as amended).

1.4.4 Surface Water Features

There are no surface water features on Site or on the properties surrounding the Site.

1.4.5 Soil Texture

Based on the results of a grain size analysis, site condition standards for coarse textured soils were applied for the investigation as the soil texture at the Site contains 28% or more by mass of particles that are smaller than 75 µm in mean diameter (refer to Table 7, Appendix E).

1.4.6 Land Use

The area surrounding the Site consists of detached residential dwellings to the south (across Carling Avenue), multi-tenant residential to the east, a parking lot to the west (across Bell Street), and a mix of detached and multi-tenant residential dwellings to the north.

The Site is currently used for commercial purposes and DST understands that the intended land use of the Site is residential. Therefore, the land use of the Site for the purpose of determining standards under O. Reg. 153/04 (as amended) is residential.

2. BACKGROUND INFORMATION

2.1 Physical Setting

The topographical map of Ottawa (Map 31G/5, produced by the Surveys and Mapping Branch of the Department of Energy, Mines and Resources, 1987) was reviewed. The map shows the ground surface elevation for the Phase Two property, located at 289 Carling Avenue in Ottawa, Ontario, at approximately 74 metres above mean sea level (m.a.s.l.). The on-Site topography slopes gently towards the southwest, with the highest elevation on Site observed in the northeast corner.

Surficial geology maps published by the Ontario Geological Survey and the Ontario Division of Mines were examined to evaluate the characteristics of the overburden at the Phase Two property and surroundings. The surficial geology at the Site consists predominantly of glaciomarine deposits described as silt and clay with sand and gravel (Ref.: Surficial Geology Map 1506A, Ottawa, Ontario, Geological Survey of Canada, 1982).

The bedrock geology at the Site consists of interbedded limestone and shale of the Middle Ordovician Bobcaygeon Group (Ref.: Map 1508A5, "Generalized Bedrock Geology", Geological Services Canada (GSC) 1976).

Based on a Phase Two ESA Report prepared by Intera Consultants Inc. (November 1997), fill material identified at the Site generally consists of clayey sand, sand and gravelly sand ranging in thickness from surface to 0.61 metres deep. The borehole log for BH24 indicated fill material to a maximum depth of 0.84 m deep.

Dows Lake is located approximately 450 m southwest of the Site. Dows Lake is connected to the Rideau canal system which is located approximately 890 m south of the Site. The Rideau River is located approximately 2.1 km south of the Site. The Ottawa River is located approximately 2.84 km North of Site.

Based upon a review of the online Natural Heritage Areas from the Ministry of Natural Resources and Forestry (MNRF), there are no environmentally sensitive sites, and Areas of Natural and Scientific Interest associated with the Phase Two Study area.

2.2 Past Investigation

The following environmental report was made available for DST's review:

- Intera Consultants Inc. November 1997. "Phase II Environmental Site Assessment of the Bell Street Parking Lot, Ottawa, Ontario." Prepared for Public Works and Government Services Section. File No.: 97-237.
- Public Works and Government Services Canada. July 2007. "PWGSC Property Review Standard, Bell Street Parking Lot, Ottawa, Ontario." DFRP No.: 08887, Project No.: 497855.

- DST Consulting Engineers Inc. March 2014. "Environmental Liability Assessment. The Bell Street Parking Lt, 289 Carling Avenue, Ottawa, Ontario." DST File No.: OE-OT-017959.
- DST Consulting Engineers Inc. March 2017. Phase One Environmental Site Assessment. 289 Carling Avenue, Ottawa, Ontario. DST File No.: GV-SO-027667.

The 1997 Phase II Environmental Site Assessment conducted by Intera Consultants Inc. identified metal impacted fill from surface to approximately 0.15 to 0.76 metres deep. Metal concentrations of barium, copper, molybdenum, and zinc detected in collected soil samples exceed either the 1997 Canadian Soil Quality Guidelines and/or the 1996 Ontario Ministry of Environment Table B Soil Criteria. Groundwater samples were collected from two installed monitoring wells but were not submitted for metal analyses. The report indicated that approximately 850 m^3 of metal impacted soil would require remediation to meet the selected site guidelines/criteria. Groundwater was indicated as not being impacted however the collected samples were not submitted for metal analyses. The report also indicated that the metal impacted soils were encapsulated by the layer of asphalt at the site which would make it inaccessible to the public.

In 2007, Public Works Government Services Canada (PWGSC) indicated that metal contaminated soils were present on site. The report also indicated asphalt wear and tear that required repair or replacement. Actions recommended in the report included asphalt repairs for risk management of metal impacted soils and/or soil remediation.

The 2014 Environmental Liability Assessment report prepared by DST indicated that the presence of metals-contaminated soil at the site required site remediation and/or a preliminary quantitative human health and ecological risk assessment.

In March 2017, DST completed a Phase One ESA for the Site and identified one APEC at the Site, as noted in Table 2-1 below.

Table 2-1: Summary of Areas of Potential Environmental Concern

APEC No.	Potential Source of Contamination	Contaminants of Potential Concern (COPCs)
APEC 1	On-site Sources: documented on-Site metal concentrations exceeding MOE guidelines, possible disposal facility, unknown land-usage prior to 1958. Off-site sources: Possible waste disposal facility, former near-by quarry, former near-by lumber yard, nearby former retail fuel stations and USTs, near by PCB spill.	BTEX, PHCs F1 - F4, PAHs, VOCs, Phenols, pH, metals

3. SCOPE OF THE INVESTIGATION

3.1 Overview of Site Investigation

The objective of the Phase Two ESA was to conduct an intrusive investigation with sample collection and analyses to confirm the presence and/or absence of contaminants of concern in specific media, as indicated in the Phase One ESA Report. The soil and groundwater investigation was conducted in accordance with the requirements of O. Reg. 153/04, as amended.

The scope of work of the investigation included the following activities:

1. Obtaining underground utility clearances and locates;
2. The advancement of four deep boreholes (MW17-01 to MW17-04) instrumented with groundwater monitoring to a maximum depth of 4.0 meters below ground surface (mbgs) at the north, east and west edges of the property boundaries and in the centre of the Site;
3. The advancement of two boreholes (BH17-05 and BH17-06) to a maximum depth so approximately 0.7 metres to characterize on-Site fill materials in the centre of the Site and near the south property boundary;
4. The collection of soil samples, including field duplicate samples, from the six advanced boreholes, for laboratory analysis of contaminants of potential concern (COPCs):
    a. Six soil samples, including one field duplicate sample, were analysed for petroleum hydrocarbons (PHC) fractions F1 – F4 (PHCs F1-F4) and benzene, toluene, ethylbenzene, and xylenes (BTEX);
    b. Six soil samples were analysed for metals;
    c. Five soil samples were analysed for polyaromatic hydrocarbons (PAHs);
    d. Six soil samples, including one field duplicate sample, were analysed for volatile organic compounds (VOCs);
    e. Five soil samples were analysed for polychlorinated biphenyls (PCBs);
    f. Five soil samples were analysed for phenols;
    g. Five soil samples were analysed for inorganic parameters, including electrical conductivity (EC), sodium adsorption ratio (SAR), pH, free cyanide, and moisture; and,
    h. Two soil samples were submitted for grain size analysis.
    i. One soil sample was submitted for Toxicity Characteristic Leaching Procedure (TCLP) analysis, for waste characterization purposes.
5. The collection of groundwater samples, including one field duplicate sample, from newly installed monitoring wells, for laboratory analysis of COPCs:
    a. Five groundwater samples, including one field duplicate samples, were analysed for PHCs F1-F4 and BTEX, VOCs, PAHs, and metals.

6. The submission of one field blank and one trip blank water samples for laboratory analysis of PHCs F1 – F4, BTEX;
7. The recording of boreholes/monitoring wells locations using a handheld global positioning system (GPS) unit;
8. The completion of the relative elevation survey of monitoring wells at the Site in order to establish the local groundwater flow direction; and,
9. The preparation of a Phase Two ESA report documenting field observations and measurements, sampling locations, analytical sample results and subsequent compliance evaluation with environmental guidelines, as well as recommendations regarding further work, as required.

3.2 Media Investigated

Groundwater and soil sampling and analysis was included within this field investigation. The reasons for the inclusion of groundwater is as follows:

- Based on previous subsurface investigations, groundwater has been encountered at the Site at levels ranging from 0.88 mbgs to 1.70 mbgs;

- Based on the identified APEC, it is possible for COPCs associated with this APEC to migrate from the shallow sub-surface soils to the groundwater, which would cause contaminant impacts in the groundwater.

Sediment sampling and analysis was not included within this field investigation because no surface water bodies were present on the Site and, therefore, no sediment was present.

3.3 Phase One Conceptual Site Model

The Phase One Conceptual Site Model included within the DST Phase One ESA report and is as follows:

The property is currently a vehicle parking lot.

City underground utilities such as storm, sewer and water are present in the southwest corner of the site, adjacent to the corner of Bell Street and Carling Avenue. No water wells were identified within the Phase One Study area; however, several observation/monitoring wells were identified at the Site and surrounding properties. Surrounding properties are a mix of residential, institutional, parkland and commercial. The Site is located approximately 74 m amsl and slopes slightly to the south – southwest, towards Dows Lake (approximately 450 m away from the Site). The surrounding lands also slope south – southwest.

Surficial geology of the Site (1997 Phase II ESA Report by Intera Consultants Ltd) indicate that approximate 0.15 to 0.75 m of clayey sandy and gravelly fill overlies limestone bedrock. Groundwater elevations documented for the Site was approximately 0.8 m deep, with an assumed groundwater flow direction to the southwest.

Based on DST site reconnaissance and review of available records as a part of the Phase One ESA, potential environmental concerns within the Phase One ESA property were found. The potential contaminants based on the environmental concerns consist of PHCs, VOCs and metals and inorganics.

3.4 Deviations from Sampling and Analysis Plan

Two monitoring wells (BH-21 and BH-23) installed by Intera in 1997 were proposed as part of the groundwater monitoring and sampling plan. On February 18, 2017, DST personnel determined that BH-21 was buried under a stock-pile of snow, and BH-23 was destroyed. As a result, these wells could not be sampled as originally proposed by DST in December 2016.

Additional groundwater sample was collected from MW17-04 on March 14, 2017, and analysed for sodium and chloride to confirm the exceedances of Table 7 SCSs found in the February groundwater sampling event.

3.5 Impediments

No physical impediments or denial of access were encountered during this investigation.

4. INVESTIGATION METHOD

4.1 General

Two shallow boreholes (BH17-05 and BH17-06) and four deeper boreholes (MW17-01 to MW17-04) instrumented with groundwater monitoring wells were completed to investigate and identify the potential sources of contamination on Site. Soil and groundwater samples were collected from the boreholes / monitoring wells and submitted for laboratory analysis of COPCs, including PHC F1 – F4, metals, PAHs, inorganics, phenols, PCBs, and VOCs (including BTEX). Two soil samples were also collected for grain size analysis. Soil sample selection for laboratory analysis was based on field observations and screening.

4.2 Borehole Drilling

The drilling program took place on February 11 – 12, 2017, and consisted of the advancement of two shallow boreholes and four deeper boreholes instrumented with groundwater monitoring wells.

The boreholes MW17-01 to MW17-04 and BH17-05 and BH17-06 were advanced by Marathon Drilling Co. Ltd. (Marathon), using a track mounted CME 55 drilling rig with hollow stem augers, to a maximum depth of 0.7 mbgs followed by diamond coring into bedrock to a maximum depth of 4.0 mbgs.

Refer to Figure 2 in Appendix A for a Site Plan showing the locations of the boreholes / monitoring wells. Photographs of the drilling activities are provided in Appendix B.

4.3 Soil Sampling

The drilling equipment used during the drilling program was equipped with a split spoon sampling device, which allowed for continuous soil sampling. Representative soil samples were collected to the top of bedrock approximately 0.70 m, where possible. Soil samples were placed directly into laboratory-supplied sample jars and vials. The sample jars were filled completely with soil to reduce the amount of headspace vapour within the jars. Samples to be submitted for laboratory analysis of PHC F2 – F4 were placed in unpreserved 120 mL clear glass jars with Teflon lids, while samples to be submitted to the laboratory for analysis of volatile compounds (PHC F1 and VOCs) were collected using disposable soil plug sample collectors supplied by the laboratory. The soil plugs were placed in laboratory-supplied vials charged with measured volumes of methanol for sample preservation.

The potential for cross-contamination between samples was minimized by, where applicable, washing sampling tools with phosphorous-free soap and water followed by rinsing with distilled water, and by wearing new disposable nitrile gloves prior to the handling of each sample. Soil samples were logged in the field for texture, odour, moisture, and visual appearance (staining). The borehole logs are provided in Appendix C.

4.4 Field Screening Measurements

A portion of each collected soil sample was placed in a polyethylene bag and allowed to equilibrate for approximately 15 minutes prior to being tested for combustible vapour concentrations (CVCs). Combustible vapour concentrations of soil samples were measured using an RKI Eagle 2™ portable vapour meter. The RKI Eagle 2™ was equipped with a catalytic combustible gas detector (CCGD), with a detection limit of 5 parts per million (ppm).

The vapour meter was operated in methane elimination mode and calibrated by DST field personnel prior to use on Site.

Based on visual and olfactory observations, CVC measurements, and the position of the collected soil samples with respect to the inferred groundwater table, soil samples were selected from each borehole, and submitted for laboratory analysis of COPCs.

A total of six soil samples and one field duplicate sample (DUP) were collected from boreholes / monitoring wells and submitted for laboratory analysis of PHC F1 – F4 and BTEX, VOCs, PAHs, metals, phenols, electrical conductivity (EC), sodium adsorption ratio (SAR), pH, free cyanide, and moisture. One TCLP soil sample was submitted for laboratory analysis, for waste characterization purposes. Additionally, two soil samples were collected for grain sieve analysis.

Combustible vapour concentrations of the collected soil samples, as measured by the vapour meter, are provided in the borehole logs in Appendix C. Soil sample locations and analysis are presented in Table 4-1.

Table 4-1: Soil Sample Locations and Analyses

Sampling Date (d/m/y)	Sample ID/Location	Sample Depth (mbgs)	Analyses Performed
11/02/2017	MW17-01	0.03 – 0.30	PHC F1 – F4, BTEX, PAHs, VOCs, PCBs, metals, Phenols, and Grain size
11/02/2017	MW17-02	0.03 – 0.10	Metals
11/02/2017	MW17-03	0.03 – 0.50	PHC F1 – F4, BTEX, PAHs, VOCs, PCBs, metals, and Phenols
12/02/2017	MW17-04	0.03 – 0.50	PHC F1 – F4, BTEX, PAHs, VOCs, PCBs, metals, and Phenols
1202/2017	BH17-05	0.03 – 0.50	PHC F1 – F4, BTEX, PAHs, VOCs, PCBs, metals, and Phenols
12/02/2017	BH17-06	0.03 – 0.50	PHC F1 – F4, BTEX, PAHs, VOCs, PCBs, metals, Phenols, and Grain size

4.5 Groundwater: Monitoring Well Installation

Monitoring wells were installed by Marathon within the advanced boreholes on February 11 and 12, 2017 (MW17-01 to MW17-04), using the same drilling equipment described in Section 4.2. The wells were constructed of a 51 mm diameter polyvinyl chloride (PVC) pipe and a #10 slotted PVC well screen, approximately 3 m in length, placed to intercept the inferred groundwater table. A sand-pack consisting of clean silica sand was placed within the annular space surrounding the

screened section of the wells, and a bentonite slurry was injected from the top of the sand layer to within 0.3 m of the surface to minimize the potential for cross-contamination between aquifers. A locking J-Plug cap was placed at the top of each well pipe and a protective flush-mount steel casing was cemented at surface to protect the wells. New disposable nitrile gloves were donned prior to the handling of the well materials for each monitoring well. The monitoring wells were installed and registered in accordance with O. Reg. 903 – Wells, made under the Ontario Water Resources Act.

Following monitoring well installation activities, the wells were equipped with dedicated Waterra™ tubing (approximately 1.25 cm in diameter) and inertial lift foot valves for well development purposes. The wells were developed to remove any groundwater impacted by drilling activities and to reduce the amount of sediment within the wells.

Refer to Figure 2 in Appendix A for the borehole / monitoring well locations, and Appendix C for the well installation details.

4.6 Groundwater Level Measurements

DST field personnel collected groundwater level measurements from the installed monitoring wells prior to groundwater sampling activities. The water levels were measured using a Solinst Canada Ltd. Model 122 oil/water interface meter which is also used to confirm the presence/absence and thickness of free (petroleum) product that may potentially be residing on the surface of the groundwater table. The electronic interface probe was decontaminated prior to the collection of each water level measurement.

4.7 Groundwater Sampling

Before groundwater sampling, the monitoring wells were purged using a low-flow Geotech Geopump™ peristaltic pump, with a pumping rate between 0.1 and 0.7 L/m. A Horiba™ U-52 water quality multi-meter connected to a flow-through cell on the discharge hose displayed continuous measurements of water quality parameters, including water temperature, pH, dissolved oxygen, and conductivity. The monitoring wells were purged until measurements of the water quality parameters had stabilized, and the DST field technician recorded three consecutive readings from the Horiba™ U-52 at regular time/volume purged intervals indicating parameter stability (five-minute intervals or after each well volume was purged). All monitoring wells on Site were purged on February 18, 2017, except MW17-01, in order to remove any stagnant groundwater prior to sampling. MW17-01 was inaccessible due to accumulated snow at its location and was purged on February 27, 2017. A total of six groundwater samples (including one field duplicate sample) were collected on February 18, 2017. One groundwater sample (MW17-01) was collected on February 27, 2017. A confirmatory groundwater sample was also collected from monitoring well MW17-04 on March 14, 2017, for analysis of sodium and chloride.

Groundwater samples for PHC F1-F4, BTEX, PAHs, phenols, VOCs and dissolved metals analysis were collected using a low-flow Geotech Geopump™ peristaltic sampling pump. The groundwater samples were collected directly into laboratory-supplied containers. Groundwater samples collected for dissolved metals were field filtered using dedicated 0.45 micron filters.

Table 4-2 below summarizes the groundwater samples collected at the Site by DST on February 8 and 27, 2017, and March 14, 2017, as well as the analyses performed for each sample.

Table 4-2: Groundwater Sample Locations and Analyses

Sampling Date	Sample ID/Location	Analyses Performed
18/02/2017	MW17-02	Metals, PHC F1 – F4, BTEX, VOCs, PAHs, phenols
18/02/2017	MW17-03	Metals, PHC F1 – F4, BTEX, VOCs, PAHs, phenols
18/02/2017	MW17-04	Metals, PHC F1 – F4, BTEX, VOCs, PAHs, phenols
18/02/2017	MW17-07 (Duplicate of MW17-02)	Metals, PHC F1 – F4, BTEX, VOCs, PAHs
27/02/2017	MW17-01	Metals, PHC F1 – F4, BTEX, VOCs, PAHs, phenols
14/03/2017	MW17-04	Sodium and chloride

4.8 Analytical Testing

Soil and groundwater samples were submitted to Maxxam Analytics Inc. (Maxxam) for chemical analyses. Maxxam is a Canadian Association for Laboratory Accreditation Inc. (CALA) and Standards Council of Canada (SCC) certified laboratory.

4.9 Residue Maintenance

All soil cuttings resulting from drilling activities, purge water resulting from well development and purging activities, and fluids resulting from equipment decontamination were appropriately contained in drums and secured on Site.

4.10 Elevation Surveying

A monitoring well elevation survey was completed at the Site by DST field personnel on February 18, 2017. The survey included four monitoring wells (MW17-01 to MW17-04) used during this investigation in order to establish regional groundwater flow direction. The results of the survey are provided in Appendix D.

4.11 Quality Assurance and Quality Control Measures

DST maintains a standard Quality Assurance / Quality Control (QA/QC) program for environmental assessments. The field sampling and QA/QC program was completed in accordance with the applicable Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario (MOECC, 1996). All project documentation was maintained and controlled by the appointed field supervisor. All borehole advancement and soil and groundwater sampling was completed in accordance with industry standards, and applicable provincial standards/guidelines.

Soil and groundwater samples were placed in laboratory-supplied containers and maintained at below 10°C in ice-packed coolers, under a Chain of Custody protocol, prior to being submitted for chemical analysis to a CALA/SCC certified laboratory (Maxxam).

As part of the field program, one field duplicate soil sample (DUP #1), one field duplicate groundwater sample (MW17-07), one groundwater field blank (Field Blank) and one groundwater trip blank (Trip Blank) were collected to evaluate the sampling methodology and potential influence of analytical methods and Site conditions on the sample results.

5. RESULTS AND EVALUATION

5.1 Stratigraphy

Based on the soil data collected, the general soil stratigraphy at the Site consists of frozen fill material made up of light brown sand from 0.03 m to 0.10 mbgs, followed by black stained sand with back ash fragments and debris (glass, nails, and wood), all overlying fractured dark grey limestone interbedded with black shale. Bedrock was encountered approximately between 0.2 and 0.8 mbgs.

Two cross-sections, A-A' and B-B', present the underlying stratigraphy interpreted for the underlying on-Site soils. The locations of A-A' and A-B' are depicted on Figure 4, Appendix A. Cross-section A-A', which trends northwest to southeast, is presented as Figure 5, while Cross-Section B-B', which trends west to east, is presented as Figure 6 in Appendix A. A detailed description of the soil stratigraphy in each borehole is provided in the borehole logs in Appendix C.

5.2 Field Observations

Black staining possibly from burnt organics (ash) was observed in soil samples from MW17-01, MW17-02, MW17-03, BH17-05 and BH17-06. There was no visual or olfactory evidence of petroleum impacts noted in any of the other soil or groundwater samples collected. No petroleum odours were identified in the above-mentioned boreholes. Borehole logs are provided in the borehole logs in Appendix C.

No free-phase liquid petroleum hydrocarbons were noted during the groundwater sampling activities.

5.3 Groundwater Elevations and Flow Direction

Static groundwater level measurements were collected on February 18, 2017, from MW17-02, MW17-03, BH17-05 and BH17-06 and February 27, 2017 from MW17-01, using a Solinst Canada Ltd. Model 122 oil/water interface meter, which is also used to confirm the presence/absence and thickness of free (petroleum) product that may potentially be residing on the surface of the groundwater table.

An arbitrary on-Site benchmark with an assumed elevation of 100 m was selected for groundwater level measurements. Static groundwater table levels within the surveyed monitoring wells range from 98.68 m in monitoring well MW17-01 (February 27, 2017) to 99.83 m in monitoring well MW17-02 (February 18, 2017). The groundwater elevations in each monitoring well were calculated by subtracting the static water level depth from the elevation of the ground surface (relative to arbitrary benchmark) adjacent to each well. The local groundwater flow direction appeared to flow towards to northeast (refer to Figure 3 in Appendix A).

Monitoring well and groundwater elevation data is presented in Table 1 (Appendix D), and Tables 5-1 and 5-2 below.

Table 5-1: Monitoring Well Elevations

Monitoring Well	Elevation (m)
MW17-01	100.83 (GS)
MW17-02	101.18 (GS)
MW17-03	100.88 (GS)
MW17-04	101.29 (GS)

Note: (1) GS refers to the ground surface adjacent to the monitoring well.

(2) Elevations are relative to an arbitrary benchmark with an assumed elevation of 100m.

Table 5-2: Groundwater Levels in Monitoring Wells

Monitoring Well	Groundwater Depth (mbgs)	Groundwater Elevation
MW17-01 (February 27, 2017)	2.09	98.68
MW17-02 (February 18, 2017)	1.35	99.83
MW17-03 (February 18, 2017)	2.14	98.74
MW17-04 (February 18, 2017)	1.55	99.74

Note: (1) mbgs: Metres below ground surface

(2) Elevations are relative to an arbitrary benchmark with an assumed elevation of 100m

5.4 Soil Texture

A grain size analysis was completed by Maxxam for soil sample collected from MW17-01 (0.03 to 0.30 mbgs and BH17-06 (0.03 to 0.60 mbgs). Borehole BH17-06 is located on north-central portion of the Site. The sieve analysis results indicated that the native soil was course-textured.

The grain size analysis results are presented in Table 7 (refer to Appendix E). Laboratory certificates of analysis are provided in Appendix F.

5.5 Soil Sample Field Screening

Combustible vapour concentrations of the collected soil samples, as measured by the CCGD, are provided in the boreholes logs in Appendix C. Refer to Section 4.4 for the field screening methods implemented by DST field personnel during the investigation.

5.6 Soil Quality

As detailed in Section 1.4, analytical results of the soil samples submitted for laboratory analyses were compared against the applicable MOECC Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/ Parkland/Institutional Property Use (MOECC, 2011). The results of the soil sample analyses and their respective evaluation criteria are presented in Tables 2 through 7 (refer to Appendix E). Laboratory Certificates of Analysis are included in Appendix F.

Based on the laboratory soil analytical results, DST noted the following:

PHC F1 - F4 and BTEX:

- Concentrations of PHC F4 SG exceeded the current applicable MOECC Table 7 SCSs (2800 µg/g) as follows:
    - MW17-03 at 0.03 to 0.50 mbgs (5100 µg/g);
- Concentration of benzene exceeded the current applicable MOECC Table 7 SCSs (0.21 µg/g) as follows:
    - MW17-01 at 0.03 to 0.30 mbgs (0.49 µg/g);
- No other exceedances above applicable MOECC Table 3 SCSs were reported in the soil samples submitted for laboratory analysis of PHC F1 - F4 and BTEX.

PAHs:

Several PAH parameters exceeded the current applicable MOECC Table 7 SCS and are summarized in Table 5-3 as follows:

Table 5-3: PAH Concentrations in Soils Exceeding MOECC Table 7 SCS

Parameter Description	Standards	Analytical Results (µg/g) (Sample ID / Depth)				
	MOECC Table 7	MW17-01 0.03 - 0.30 m	MW17-03 0.03 - 0.50 m	MW17-04 0.03 - 0.50 m	BH17-05 0.03 - 0.60 m	BH17-06 0.03 - 0.60 m
Methylnaphthalene, 2-(1-)	0.99	0.49	<0.071	<0.071	0.25	**2.0**
Acenaphthylene	0.15	**0.24**	<0.050	<0.050	**0.49**	0.055
Benzo(a)anthracene	0.5	**2.1**	0.29	<0.050	**1.5**	0.45
Benzo(a)pyrene	0.3	**1.5**	**0.32**	<0.050	**2.0**	**0.38**
Benzo(b/j)fluoranthene	0.78	**1.9**	0.42	0.051	**2.4**	0.54
Benzo(k)fluoranthene	0.78	0.75	0.16	<0.050	**0.89**	0.20
Dibenz(a,h)anthracene	0.1	**0.23**	0.056	<0.050	**0.31**	0.067
Fluoranthene	0.69	**4.1**	0.56	0.073	**1.5**	**0.81**
Indeno(1,2,3-cd)pyrene	0.38	**0.79**	0.26	<0.050	**1.6**	0.24
2-Methylnaphthalene	0.99	0.25	0.052	<0.050	0.14	**1.1**
Naphthalene	0.6	0.16	<0.050	<0.050	0.11	**0.79**

Notes:
BOLD – Exceeded MOECC Table 7 SCS

PCBs:

- No exceedances above applicable MOECC Table 7 SCSs were reported in the soil samples submitted for laboratory analysis of PCBs.

VOCs:

- No exceedances above applicable MOECC Table 7 SCSs were reported in the soil samples submitted for laboratory analysis of VOCs

Metals:

- Several metal parameters exceeded the current applicable MOECC Table 7 SCS and are summarized in Table 5-4 as follows:

Table 5-4: Metal Concentrations in Soils Exceeding MOECC Table 7 SCS

Parameter Description	Standards	Analytical Results (µg/g) (Sample ID / Depth)					
	MMOECC Table 7	MW17-01 0.03 - 0.30 m	MW17-02 0.03 - 0.10 m	MW17-03 0.03 - 0.50 m	MW17-04 0.03 - 0.50 m	BH17-05 0.03 - 0.60 m	BH17-06 0.03 - 0.60 m
Antimony (Sb)	7.5	**27**	2.3	1.2	<0.2	0.57	2.5
Arsenic (As)	18	17	**32**	16	3.5	7.5	**53**
Barium (Ba)	390	**910**	**600**	190	59	96	**390**
Chromium (Cr)	160	**170**	16	15	19	21	15
Lead (Pb)	120	**2700**	**440**	89	12	**630**	**300**
Molybdenum (Mo)	6.9	3.6	**11**	3.2	1.1	1.7	**10**
Silver (Ag)	20	**24**	<0.20	0.49	<0.20	<0.20	<0.20
Zinc (Zn)	340	**1300**	160	180	29	70	130
Mercury (Hg)	0.27	0.070	0.056	0.12	<0.050	0.10	**0.79**

Notes:
BOLD – Exceeded MOECC Table 7 SCS

Inorganics

- SAR concentrations exceeded the current applicable MOECC Table 7SCSs [5 (unitless)] as follows:
    - MW17-03 at 0.03 to 0.50 mbgs (5.8);
    - MW17-04 at 0.03 to 0.50 mbgs (13); and,
    - BH17-05 at 0.03 to 0.60 mbgs (12).

- EC concentrations exceeded the current applicable MOECC Table 7SCSs (0.7 µS/cm) as follows:
    - MW17-04 at 0.03 to 0.50 mbgs (1.2 µS/cm);

- BH17-05 at 0.03 to 0.60 mbgs (1.2 µS/cm); and,
- BH17-06 at 0.03 to 0.60 mbgs (1.6 µS/cm).

- Cyanide concentrations exceeded the current applicable MOECC Table 7SCSs (0.051 µg/g) in MW17-03 at 0.03 to 0.50 mbgs (0.2 µg/g).

TCLP Analysis

The composite soil sample collected from the soil cuttings met the MOECC TCLP Standards as non-hazardous waste. Table 8, Appendix E summarizes the analytical results and the MOECC respective Standards.

5.7 Groundwater Quality

As detailed in Section 1.4, analytical results of the groundwater samples submitted for laboratory analyses were compared against the applicable MOECC Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition, for Residential/ Parkland/Institutional Property Use (MOECC, 2011).

Based on the laboratory groundwater analytical results, DST noted the following:

PHCs and BTEX:

- PHC and BTEX concentrations collected from all four groundwater samples were below the current applicable MOECC Table 7 SCS for their respective parameter.

VOCs:

- VOC concentrations collected from all four groundwater samples were below the current applicable MOECC Table 7 SCS for their respective parameter.

PAHs:

- PAH concentrations collected from all four groundwater samples were below the current applicable MOECC Table 7 SCS for their respective parameter.

Phenols:

- Phenol concentrations collected from all four groundwater samples were below the current applicable MOECC Table 7 SCS for their respective parameter.

Dissolved Metals:

- Dissolved sodium concentrations exceeded the MOECC Table 7 Standard (1,800,000 µg/L) in the groundwater sample collected from MW17-04 on February 18, 2017 (7,000,000 µg/L) and on March 14, 2017 (3,800,000 µg/L); and,

- Dissolved Chloride concentrations exceeded the MOECC Table 7 Standard (1,800 µg/L) in the groundwater sample collected from MW17-04 on March 14, 2017 (7,200 µg/L).

5.8 Quality Assurance and Quality Control Results

As noted in Section 5.11, the field program included the submission of two QA/QC samples for laboratory analysis:

- DUP, one field duplicates of soil samples BH17-05, 0.03-0.60 m (DUP # 1);
- DUP, one field duplicate of groundwater sample MW17-02 (MW17-07);
- Field Blank, groundwater field blank; and,
- Trip Blank, groundwater trip blank.

The analytical results of an original (parent) sample and its corresponding field duplicate are generally quantitatively comparable. Relative percent differences (RPDs) between analytical results from field duplicate samples are calculated using the following formula:

$$RPD = \frac{(\text{Sample Result} - \text{Duplicate Result}) \times 100}{(\text{Sample Result} + \text{Duplicate Result}) / 2}$$

The RPD calculation is only applicable where both the sample and field duplicate concentrations are greater than five times the laboratory reportable detection limit (Maxxam, 2015). Once calculated, the RPDs were then compared to the applicable alert criteria, which is 30% for PHC F1-F4, 40% for PAHs, 50% for VOCs, and 30% for metals in soil; and 30% for PHC F1-F4, PAHs and VOCs, and 20% for metals in groundwater (Maxxam, 2015).

The analytical results of the groundwater field and trip blanks were below laboratory reportable detection limits (RDLs), indicating that Site conditions and analytical procedures did not have any impact on the results of the samples collected during the investigation.

No quality control issues that would affect the conclusions of this report were identified. Therefore, based on this information, the analytical results are considered reproducible. Laboratory quality control data is included with the laboratory certificates of analysis in Appendix F.

6. PHASE TWO CONCEPTUAL SITE MODEL

As indicated in Section 2.1, the Site is located at 289 Carling Avenue in Ottawa, Ontario. The Site, located at the northeast corner of Carling Avenue and Bell Street in Ottawa, Ontario, and is situated in a municipal urban setting of mixed commercial, residential, and institutional land uses. The Site is currently part of the staff parking lot No.: 66 operated by the Government of Canada. The Site is paved with asphalt, has some landscaping adjacent the property boundaries and is approximately 0.13 ha (0.31 acres).

The Site is currently zoned by the City of Ottawa as AM10 which is an Arterial Main street Zone having mixed use and commercial uses (City of Ottawa, 2017). Permitted uses in vicinity of the Site includes all types of commercial uses including retail shops, restaurants and taverns, places of entertainment, offices and service uses, studios, municipal and private parks, parking lots, institutional uses, and residential uses.

There are no underground utilities beneath the Site. There are buried and overhead utilities adjacent the property boundaries to the north (an electrical line), east (am electrical line), south (storm, water, sewer, gas, and communication) and west (storm, sewer, water, gas, and electric).

6.1 Site Specific Geology, Hydrogeology & Surface Water Bodies

As previously described in Section 5.1, the general soil stratigraphy at the Site consists of frozen fill material made up of light brown sand from 0.03 m to 0.10 mbgs followed by black stained sand with back ash fragments and debris (glass, nails, and wood) all overlying fractured dark grey limestone interbedded with black shale. Bedrock was encountered approximately between 0.2 and 0.8 mbgs.

Static groundwater table elevations within the surveyed monitoring wells range from 98.68 m in monitoring well MW17-01 (February 27, 2017) to 99.83 m in monitoring well MW17-02 (February 18, 2017). The groundwater elevations in each monitoring well were calculated by subtracting the static water level depth from the elevation of the ground surface (relative to an arbitrary benchmark with an assumed elevation of 100 m) adjacent to each well. The interpreted groundwater flow direction for the Site was northeast suggesting that COCs are up-gradient to Dows Lake (450 metres southwest of the Site).

Dows Lake is located approximately 450 metres southwest of the Site which is up-gradient from the flow of groundwater beneath the Site.

6.2 Site Climate and Precipitation

Ottawa has a semi-continental climate, with warm, humid summers and cold winters. According to Environment Canada's 1981-2010 Climate Normals for the Ottawa MacDonald Cartier INT'L A Centre, the city of Ottawa has a mean annual temperature of 6.4 °C, with an average temperature of -10.3 °C in January and 21.0 °C in July. Average annual precipitation is 943.4 mm, most of

which falls as rain. Average total annual snowfall for the 1981-2010 period is 223.5 cm (Environment Canada, 2017).

6.3 Extent and Distribution of Contaminants of Concern

The following sections present a discussion of the extent and distribution of Contaminants of Concern (COCs) found in soil and groundwater as part of DST investigations.

6.3.1 Extent of Soil Impacts

Metal analyses of the soil samples from boreholes/monitoring wells indicated exceedances of the applicable MOECC SCS for antimony, arsenic, barium, chromium, lead, molybdenum, silver, zinc, and mercury. Results from the current investigation indicate that concentrations of PHCs F4 and benzene in soil samples from MW17-03 (0.03-0.50 mbgs) and MW17-01 (0.03-0.30 mbgs) exceeded the MOECC Table 7 SCS, respectively. PAHs exceedances of the MOECC Table 7 SCS were also found in soil samples collected from all DST's installed boreholes/monitoring wells with an exception of MW17-04. Inorganic analyses of the soil samples from boreholes/monitoring wells also exceeded the MOECC Table 7 SCS for conductivity (EC), Sodium Adsorption Ratio (SAR) and free cyanide. The summary of the soil contamination and boreholes/monitoring wells location is provided on Figure 7 in and Site cross sections are provided as Figures 5 and 6 in Appendix A.

A review of all borehole logs available suggests that impacted soils are located from 0.03 mbgs to 0.70 mbgs which include the entire fill profile underlying the asphalt. The horizontal soil impact is not delineated by way of sample analysis; however, it is delineated by the property boundaries. Based on the borehole locations and the Site boundaries, it is anticipated that the entire 0.14 ha area of the fill has been impacted.

Specific COCs in the soil are:

- PAHs
- metals
- EC, SAR
- Free cyanide
- PHC F4 SG
- Benzene

Considering the area of the Site and the maximum thicnkness of fill materials (0.7 m), approximately 1,000 m^3 of impacted fill material exists on Site.

6.3.2 Extent of Groundwater Impacts

Sodum and chlorides were identified in the groundwater at all the installed monitoring well locations; however, only exceeded the MOECC Table 7 SCS in MW 17-04. All other groundwater samples collected by DST met the MOECC Table 7 SCS for all the COCs.

Potential source of all the COCs is believed to be a layer of fill material, consisting of sand and with black ash and debris (nails, glass, and wood) under the entire Site. The potential source of sodium and chloride in the groundwater is the application of road salts during the winter months. Carling Avenue (adjacent south property boundary) is a main roadway through central Ottawa, the City of Ottawa regularly salts Carling Avenue, as well as Bell Street (west adjacent property boundary), when there are adverse weather conditions such as snow, freezing rain and/or extremely cold conditions causing freezing.

6.3.3 Site-Specific Fate and Transport

PAHs, PHC F4, benzene, metals, and inorganics such as salts have impacted the soil units beneath the Site. Organic concentrations such as PAHs and PHCs (or BTEX) may adsorb to soil grains, dissolve into groundwater, become trapped in bedrock fractures and/or volatilize into the atmosphere. Adsorption to soil is a common process for a variety of organics. Once significant concentrations are in the subsurface, volatilization into the vadose zone is a process that may contribute to the attenuation of the dissolved phase organic constituents. However, vapour-phase transport is considered a minor concentration removal process relative to the hydrocarbon concentrations present in the plume and near source areas.

The principal transport process for the movement of dissolved phase organics is groundwater, however, groundwater was not identified in the on-Site soils. Groundwater was identified in the underlying bedrock. Surface water run-off or spring melt water may also influence the migration of organic concentrations in the fill materials. The site has been paved with Asphalt and has some landscaping adjacent the property boundaries, however it is in poor condition with multiple cracks throughout and patches missing in places.

Metals will remain stable in soils unless it becomes dissolved in water. The addition of salts, such as chloride, to water may have an affect on the fate and transport of metals. Metals can react with salts in water and give them the soluble behaviour of a dense non-aqueous liquid which tend to sink to greater depths than light non-aqueous phase liquids such as PHCs. Dissolved metal concentrations can move via surface run-off water migration and/or groundwater.

6.3.4 Receptors

Potential current and future receptors include:

- facility residents and property users
- underlying bedrock groundwater aquifer(s)
- soil organisms and invertebrates
- vegetation such as trees, shrubs, etc.
- construction workers completing excavation work at the Site

6.3.5 Exposure Pathways

The potential current and future exposure pathways include:

- facility users and property users: possible soil ingestion and dermal contact with shallow soil and groundwater;
- soil organisms through ecological soil contact and uptake the soil contamination;
- uptake from the soil(s) by plants; and
- Construction workers completing excavation work at the Site may be exposed to dermal contact and ingestion of soils in addition to inhalation risks.

The cross-section presented on Figure 9 in Appendix A represents a pictorial CSM for the Site and illustrates the soil and contaminant pathway conditions at the Site.

7. CONCLUSIONS AND RECOMMENDATIONS

DST was retained by the City of Ottawa to conduct a Phase Two ESA of the property located at 289 Carling Avenue in Ottawa, Ontario.

The objective of the Phase Two ESA was to conduct intrusive investigation with sample collection and analyses to confirm the presence or absence of contaminants of concern in soils and groundwater, based the APEC identified in a Phase One ESA report entitled "Phase One Environmental Site Assessment, 289 Carling Avenue, Ottawa, Ontario", dated March, 2017. This Phase Two ESA was also conducted to delineate the lateral and vertical extent of COCs impacts in soil and in groundwater.

Based upon the results of the soil sampling conducted by DST February 11 – 12, 2017, soil exceedances of multiple COCs above applicable Table 7 SCSs for residential uses were identified in boreholes MW17-01, MW17-02, MW17-03, BH17-05 and BH17-06 (between 0.03 and 0.70 mbgs).

Metal analyses of the soil samples from boreholes/monitoring wells indicated exceedances of the applicable MOECC Table 7 Site Condition Standards (SCSs) for antimony, arsenic, barium, chromium, lead, molybdenum, silver, zinc, and mercury. Results from the current investigation indicate that concentrations of PHCs F4 and benzene in soil samples from MW17-03 (0.03-0.50 mbgs) and MW17-01 (0.03-0.30 mbgs) exceeded the MOECC Table 7 SCS, respectively. PAH exceedances of the MOECC Table 7 SCS were also found in soil samples collected from all DST's installed boreholes/monitoring wells, with an exception of MW17-04. Inorganic analyses of the soil samples from boreholes/monitoring wells also exceeded the MOECC Table 7 SCS for conductivity (EC), Sodium Adsorption Ratio (SAR) and free cyanide.

In addition to the above-noted soil exceedances, chloride and sodium impacted groundwater exceeding applicable Table 7 SCSs (for non-potable groundwater and coarse textured shallow soils) was identified only in monitoring well MW17-04.

No free phase hydrocarbons, PHCs, PAHs and/or VOC concentrations were detected in the collected groundwater samples.

Following the results of the Phase Two ESA, DST confirms the delineation of vertical and lateral soil impacts have not been achieved by the way of sample analysis. The reason being is that the fill material is impacted to its maximum depth at 0.7 mbgs and immediately overlies bedrock. Boreholes MW17-01 to MW17-03 and BH17-05 to BH17-06 were advanced as close to the property boundaries as possible suggesting that the entire site has impacted fill overlying bedrock.

The area of impact consists of 1,400 m^2, which includes the entire Site and to a maximum depth of 0.7 mbgs. The approximate volume of impacted fill present on-Site is 1,000 m^3.

7.1 Recommendations

It is recommended that the above noted areas of COCs impacted soils be remediated appropriately, via the excavation and off-Site disposal (at an MOECC-licensed disposal facility)

of impacted fill materials on Site. Following the soil remediation, two rounds of confirmatory groundwater testing should be conducted (90 days apart). If the groundwater impacts are detected post-remediation, a site risk assessment for chlorides and sodium concentrations in the groundwater should be conducted.

The proposed remediation program would consist of the following:

- One more round of groundwater monitoring and sampling occur in the Spring of 2017 to confirm the chloride and sodium concentrations detected in the groundwater at MW17-04.
- Excavation and disposal of approximately 1,000 m^3 of PAH, benzene, PHC F4 and metal impacted fill down to the bedrock surface;
- Confirmation of the excavation sidewalls if soil and/or fill materials are present; and,
- Two rounds of confirmatory groundwater sampling and testing (90 days apart).

DST recommends drilling one set of nested monitoring wells to 3.0 mbgs and one deep monitoring well to the depth of 6.0 mbgs at north side of the Site for post-remedial monitoring of the groundwater.

If the groundwater impacts are detected post-remediation, a Site risk assessment for chlorides and sodium concentrations in the groundwater should be conducted.

Subsequent to the successful completion of this remediation program, confirmatory soil sampling and a groundwater monitoring program, a Record of Site Condition would be able to be filed with the MOECC.

8. CLOSURE

We trust that the above meets your present requirements; should you have any questions or concerns regarding this report, please feel free to contact the undersigned at your convenience.

DST confirms that the completion of the Phase Two ESA has been supervised and approved by Eric Domingue, P. Eng., a Qualified Person as defined by O.Reg. 153/04 (as amended), and further confirms the findings and conclusions of this report.

We appreciate this opportunity to provide environmental consulting services to you. If you have any questions or comments, please contact the undersigned at your convenience.

For **DST CONSULTING ENGINEERS INC.**

Bahman Bani Hashemi, Ph.D.
Project Manager

Eric Domingue, P.Eng., M.A.Sc.
Director - Technical Services Group

9. REFERENCES

1. Maxxam Analytics Inc., May 2015. "National QA/QC Interpretation Guide – Environmental Services".

2. Department of Energy, Mines and Resources. 1987. Map 31G/5, Surveys and Mapping Branch.

3. DST Consulting Engineers Inc. 2017. Phase One Environmental Site Assessment. 289 Carling Avenue, Ottawa, Ontario. DST File No>: GV-SO-027667

4. DST Consulting Engineers Inc. 2015. Environmental Liability Assessment. The Bell Street Parking Lt, 289 Carling Avenue, Ottawa, Ontario. DST File No.: OE-OT-017959.

5. Environment Canada, 2017. 1981-2010 Climate Normals for Ottawa International Airport. Accessed online April, 2017: http://climate.weather.gc.ca/historical_data/search_historic_data_e.html

6. Geological Services Canada. 1979. Drift Thickness Trend, Ottawa-Hull, Ontario and Quebec.

7. Geological Services Canada. 1976. Generalized Bedrock Geology, Map 1508A5.

8. Geological Survey of Canada. 1977. Surficial Materials and Terrain Features, Map 1425A, Ottawa, Ontario.

9. Intera Consultants Inc. 1997. Phase II Environmental Site Assessment of the Bell Street Parking Lot, Ottawa, Ontario. Prepared for Public Works and Government Services Section. File No.: 97-237.

10. Ministry of Natural Resources and Forestry. March 2016. Make A Map: Natural Heritage Areas. Accessed from: http://www.giscoeapp.lrc.gov.on.ca/Mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US

11. Ontario Geological Survey, Division of Mines. 1982. Surficial Geology Map 1506A, Ottawa, Ontario.

12. Ontario Ministry of Environment. 2014. Ontario Regulation 153/04 (as amended) – Records of Site Condition – Part XV.1 of the Act.

13. Ontario Ministry of Environment. June 1991. Waste Disposal Site Inventory.

14. Public Works and Government Services Canada. 2007. PWGSC Property Review Standard, Bell Street Parking Lot, Ottawa, Ontario. DFRP No.: 08887, Project No.: 497855.

15. Ontario Ministry of the Environment and Climate Change, Map: Well Records, updated March 2017.

APPENDIX A
FIGURES

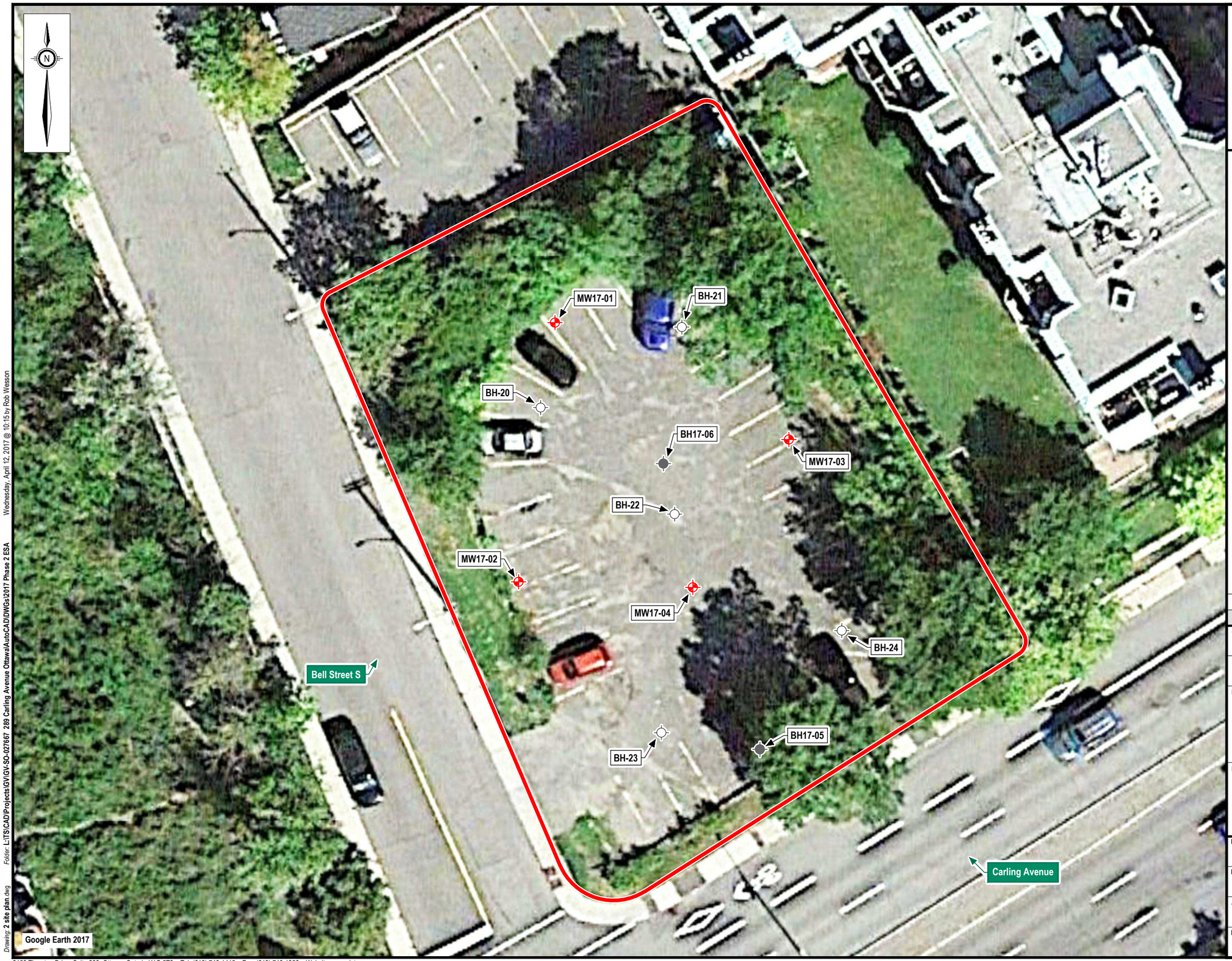
Note

1. This drawing shall be read in conjunction with the associated technical report.

Revision	Date	Issue	Approval
A	12-04-17	Final	E.D.

Client: City of Ottawa	Site: 289 Carling Avenue, Ottawa, ON		
DST consulting engineers	Report Title: Phase Two Environmental Site Assessment	Designed By: G.R.	Date: April 2017
		Drawn By: R.W.	Project No.: GV-SO-027667
	Drawing Title: Site Location Map	Approved By: E.D.	Figure No.: 1
		Scale: As shown	

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



DST consulting engineers

Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.

Legend

- Site boundary
- Borehole location (DST, 2017)
- Borehole location (Intera, 1997)
- Monitoring well location (DST, 2017)

0 2 4 6 8 10 m

Scale 1:250

Revision	Date	Issue	Approval
A	12-04-17	Final	E.D.

Client: City of Ottawa

Site: 289 Carling Avenue, Ottawa, ON

Report Title: Phase Two Environmental Site Assessment

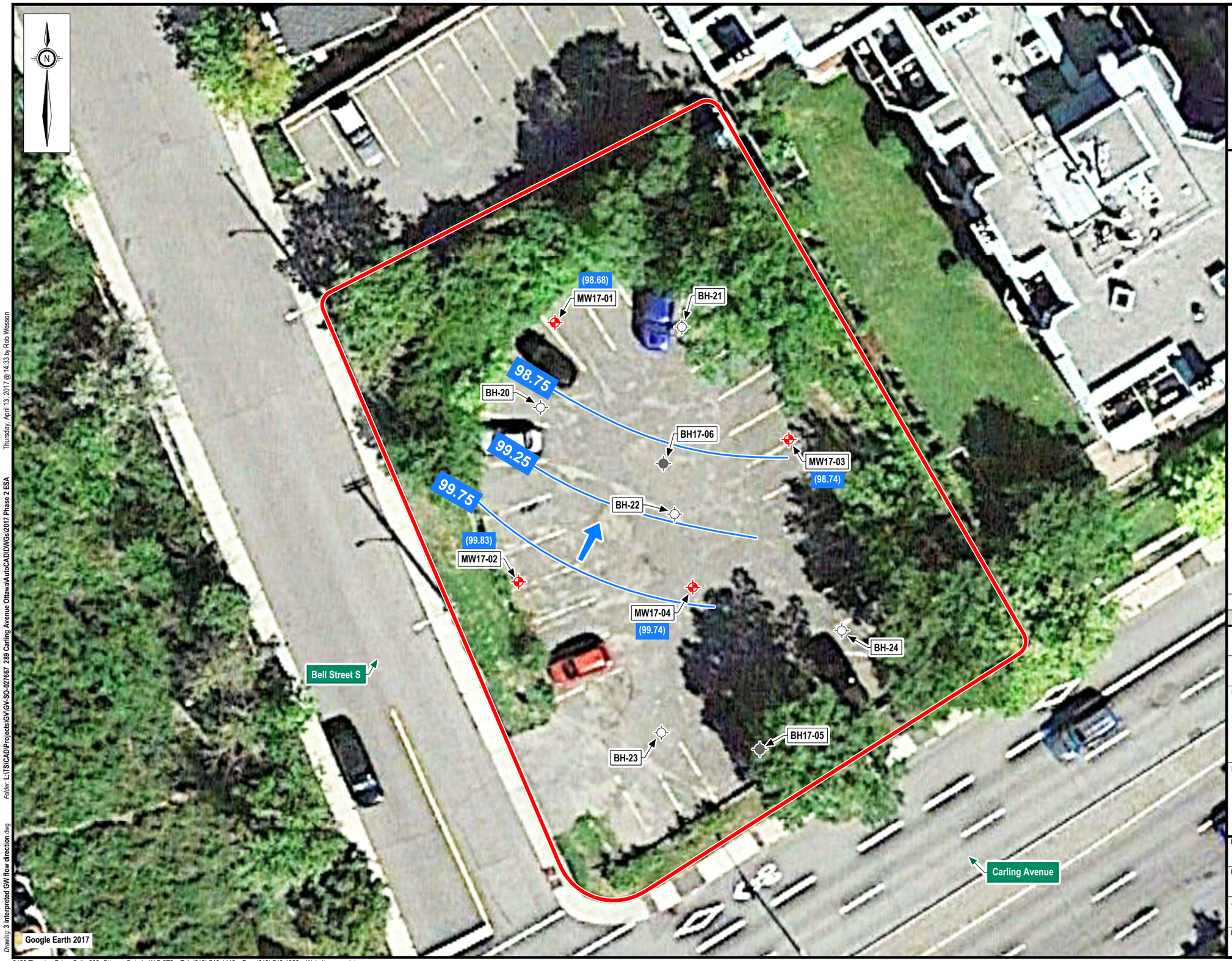
Drawing Title: Site Plan with Borehole and Monitoring Well Locations

Designed By: G.R.	Scale: As shown
Drawn By: R.W.	Date: April 2017
Approved By: E.D.	Project No.: GV-SO-027667

Figure No. 2

Drawing: 2 site plan.dwg Folder: L:\TS\CAD\Projects\GV\GV-SO-027667 289 Carling Avenue Ottawa\AutoCAD\DWGs\2017 Phase 2 ESA Wednesday, April 12, 2017 @ 10:15 by Rob Wesson

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



Folder: L:\TS\CAD\Projects\GV\GV-SO-027667 289 Carling Avenue Ottawa\AutoCAD\DWGs\2017 Phase 2 ESA

Drawing: 3 interpreted GW flow direction.dwg

Thursday, April 13, 2017 @ 14:33 by Rob Wesson

consulting engineers

Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.

Legend

- Site boundary
- Borehole location (DST, 2017)
- Borehole location (Intera, 1997)
- Monitoring well location (DST, 2017)
- 98.75 — Interpreted groundwater contour (m)
- (98.68) — Groundwater elevation (m)
- Direction of groundwater flow

0 2 4 6 8 10 m

Scale 1:250

Revision	Date	Issue	Approval
A	12-04-17	Final	E.D.

Client: City of Ottawa

Site: 289 Carling Avenue, Ottawa, ON

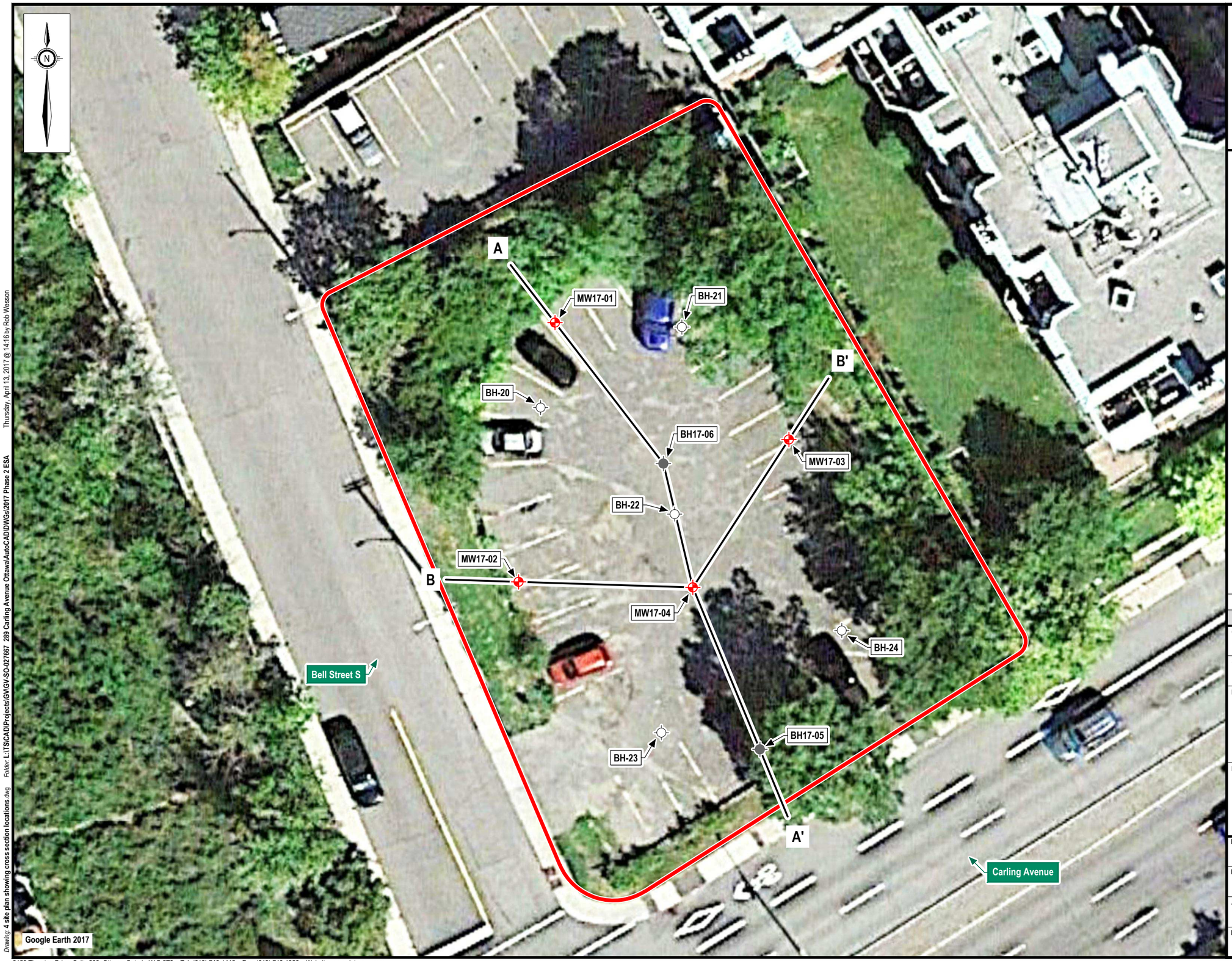
Report Title: Phase Two Environmental Site Assessment

Drawing Title: Interpreted Groundwater Flow Direction

Designed By: G.R.	Scale: As shown
Drawn By: R.W.	Date: April 2017
Approved By: E.D.	Project No.: GV-SO-027667

Figure No.: 3

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



DST consulting engineers

Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.

Legend

- Site boundary
- Borehole location (DST, 2017)
- Borehole location (Intera, 1997)
- Monitoring well location (DST, 2017)

0 2 4 6 8 10 m

Scale 1:250

Revision	Date	Issue	Approval
A	12-04-17	Final	E.D.

Client: City of Ottawa

Site: 289 Carling Avenue, Ottawa, ON

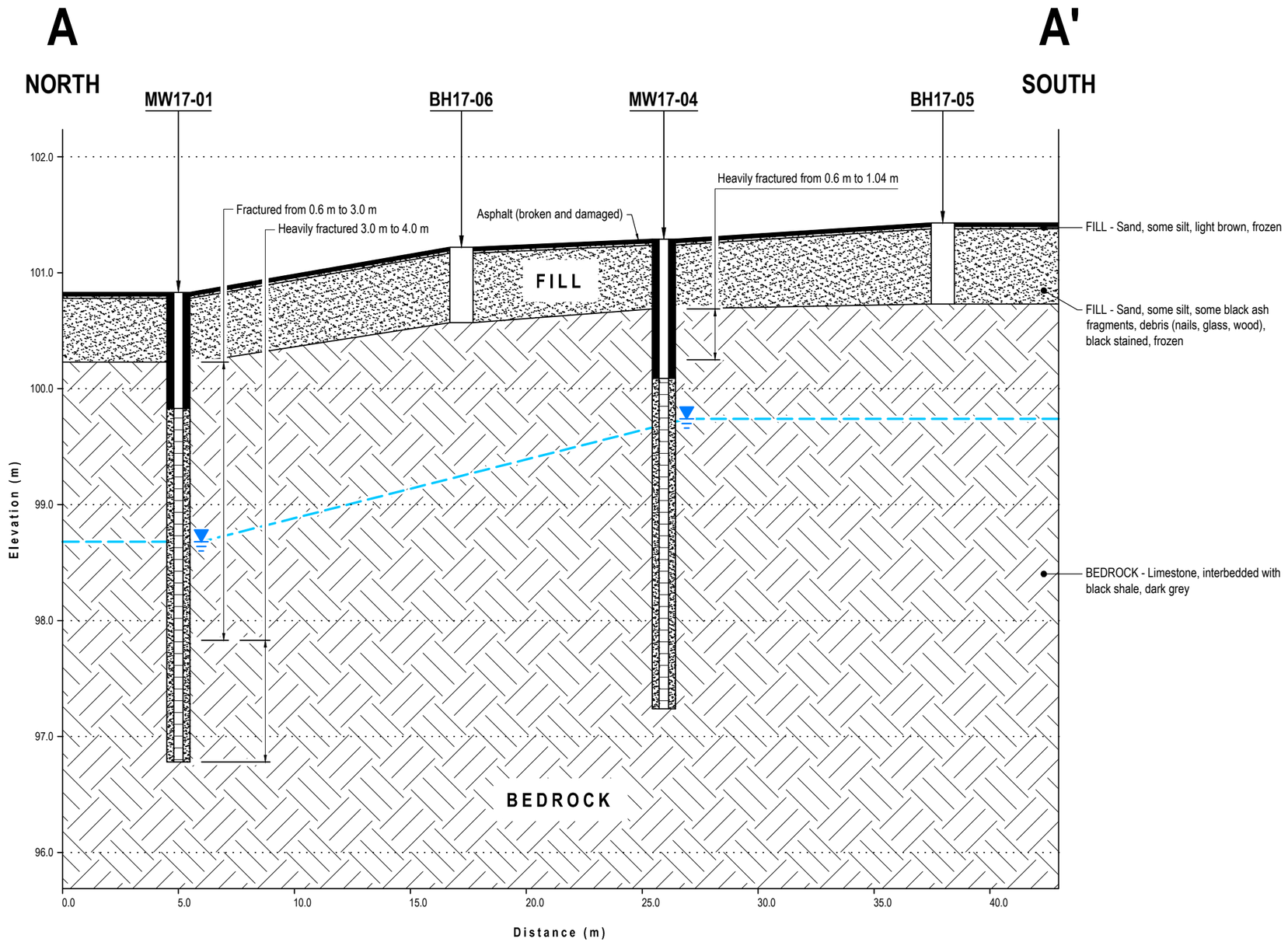
Report Title: Phase Two Environmental Site Assessment

Drawing Title: Site Plan Showing Cross Section Locations

Designed By: G.R.	Scale: As shown
Drawn By: R.W.	Date: April 2017
Approved By: E.D.	Project No.: GV-SO-027667
Figure No.: 4	

Drawing: 4 site plan showing cross section locations.dwg Folder: L:\TS\CAD\Projects\GV\GV-SO-027667 289 Carling Avenue Ottawa\AutoCAD\DWGs\2017 Phase 2 ESA Thursday, April 13, 2017 @ 14:16 by Rob Wesson

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.

Legend

Interpreted groundwater level

Top of groundwater

Monitoring well construction

Bentonite seal

Slots

Sand pack

0 0.2 0.4 0.8 1.2 1.6 2.0 m

Scale 1:40
Vertical Scale

0 1 2 4 6 8 10 m

Scale 1:200
Horizontal Scale

Revision	Date	Issue	Approval
A	12-04-17	Final	E.D.

Client: **City of Ottawa**

Site: **289 Carling Avenue, Ottawa, ON**

Report Title: **Phase Two Environmental Site Assessment**

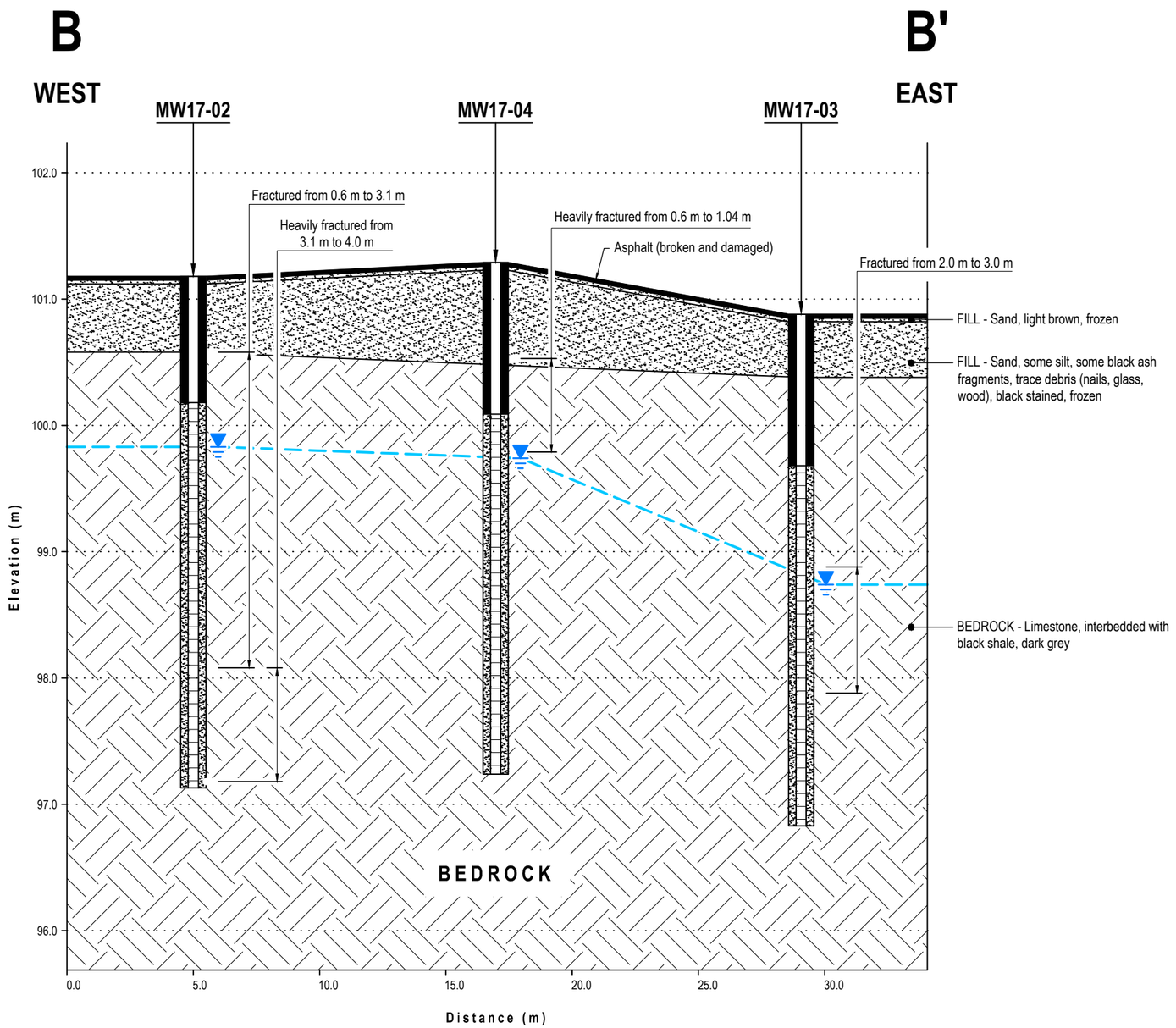
Drawing Title: **Cross Section A-A'**

Designed By: G.R.	Scale: As shown
Drawn By: R.W.	Date: April 2017
Approved By: E.D.	Project No.: GV-SO-027667

Figure No.: 5

Drawing 5 cross section A-A'.dwg *Folder:* L:\TS\CAD\Projects\GV\GV-SO-027667 289 Carling Avenue Ottawa\AutoCAD\DWGs\2017 Phase 2 ESA *Thursday, April 13, 2017 @ 14:24 by Rob Wesson*

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.

Legend

Interpreted groundwater level

Top of groundwater

Monitoring well construction

Bentonite seal

Slots

Sand pack

0 0.2 0.4 0.8 1.2 1.6 2.0 m

Scale 1:40
Vertical Scale

0 1 2 4 6 8 10 m

Scale 1:200
Horizontal Scale

A	12-04-17	Final	E.D.
Revision	Date	Issue	Approval

Client: City of Ottawa

Site: 289 Carling Avenue, Ottawa, ON

Report Title: Phase Two Environmental Site Assessment

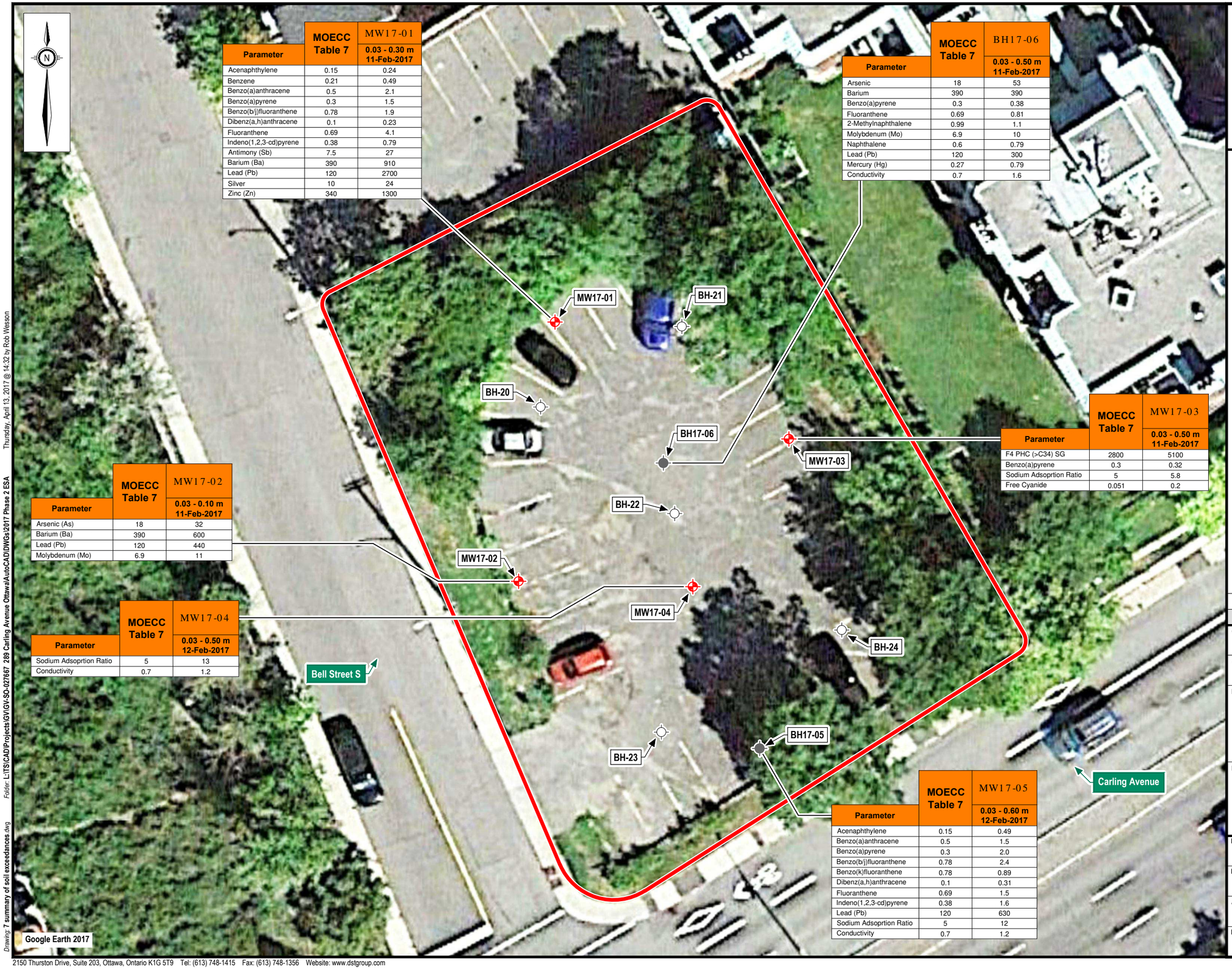
Drawing Title: Cross Section B-B'

Designed By	Scale
G.R.	As shown
Drawn By	**Date**
R.W.	April 2017
Approved By	**Project No.**
E.D.	GV-SO-027667

Figure No. 6

Drawing: 6 cross section B-B' dwg *Folder:* L:\TS\CAD\Projects\GV\GV-SO-027667 289 Carling Avenue Ottawa\AutoCAD\DWGs\2017 Phase 2 ESA Wednesday, April 12, 2017 @ 11:42 by Rob Wesson

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



Parameter	MOECC Table 7	MW17-01 0.03 - 0.30 m 11-Feb-2017
Acenaphthylene	0.15	0.24
Benzene	0.21	0.49
Benzo(a)anthracene	0.5	2.1
Benzo(a)pyrene	0.3	1.5
Benzo(b/j)fluoranthene	0.78	1.9
Dibenz(a,h)anthracene	0.1	0.23
Fluoranthene	0.69	4.1
Indeno(1,2,3-cd)pyrene	0.38	0.79
Antimony (Sb)	7.5	27
Barium (Ba)	390	910
Lead (Pb)	120	2700
Silver	10	24
Zinc (Zn)	340	1300

Parameter	MOECC Table 7	BH17-06 0.03 - 0.50 m 11-Feb-2017
Arsenic	18	53
Barium	390	390
Benzo(a)pyrene	0.3	0.38
Fluoranthene	0.69	0.81
2-Methylnaphthalene	0.99	1.1
Molybdenum (Mo)	6.9	10
Naphthalene	0.6	0.79
Lead (Pb)	120	300
Mercury (Hg)	0.27	0.79
Conductivity	0.7	1.6

Parameter	MOECC Table 7	MW17-03 0.03 - 0.50 m 11-Feb-2017
F4 PHC (>C34) SG	2800	5100
Benzo(a)pyrene	0.3	0.32
Sodium Adsoprtion Ratio	5	5.8
Free Cyanide	0.051	0.2

Parameter	MOECC Table 7	MW17-02 0.03 - 0.10 m 11-Feb-2017
Arsenic (As)	18	32
Barium (Ba)	390	600
Lead (Pb)	120	440
Molybdenum (Mo)	6.9	11

Parameter	MOECC Table 7	MW17-04 0.03 - 0.50 m 12-Feb-2017
Sodium Adsoprtion Ratio	5	13
Conductivity	0.7	1.2

Parameter	MOECC Table 7	MW17-05 0.03 - 0.60 m 12-Feb-2017
Acenaphthylene	0.15	0.49
Benzo(a)anthracene	0.5	1.5
Benzo(a)pyrene	0.3	2.0
Benzo(b/j)fluoranthene	0.78	2.4
Benzo(k)fluoranthene	0.78	0.89
Dibenz(a,h)anthracene	0.1	0.31
Fluoranthene	0.69	1.5
Indeno(1,2,3-cd)pyrene	0.38	1.6
Lead (Pb)	120	630
Sodium Adsoprtion Ratio	5	12
Conductivity	0.7	1.2

DST consulting engineers

Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.
3. All units are expressed in micrograms per gram (µg/g).

Legend

- Site boundary
- Borehole location (DST, 2017)
- Borehole location (Intera, 1997)
- Monitoring well location (DST, 2017)

0 2 4 6 8 10 m

Scale 1:250

Revision	Date	Issue	Approval
A	12-04-17	Final	E.D.

Client: City of Ottawa

Site: 289 Carling Avenue, Ottawa, ON

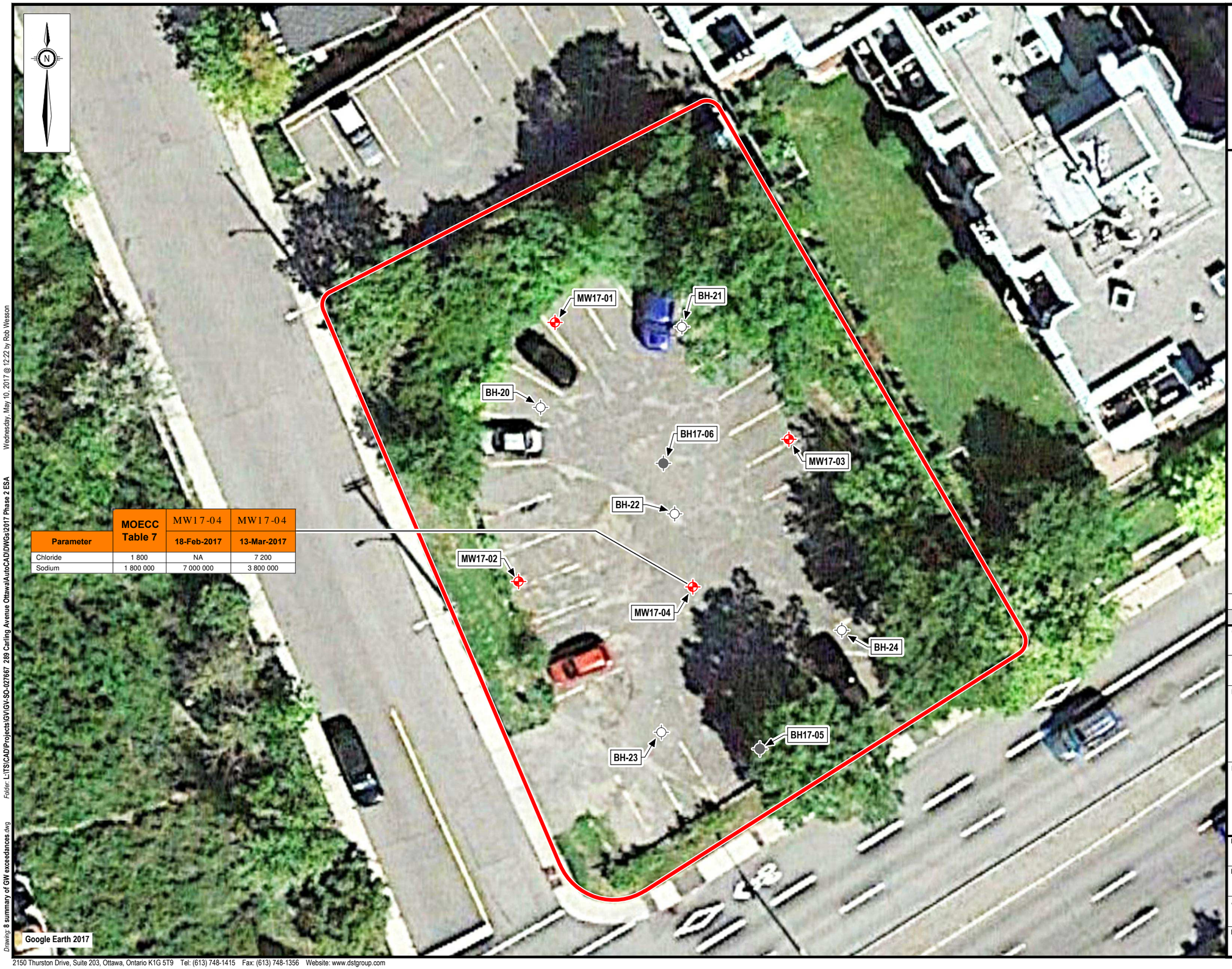
Report Title: Phase Two Environmental Site Assessment

Drawing Title: Summary of Soil Exceedances of the MOECC Table 7 Standards

Designed By: G.R.	Scale: As shown
Drawn By: R.W.	Date: April 2017
Approved By: E.D.	Project No.: GV-SO-027667
Figure No.: 7	

Drawing 7 summary of soil exceedances.dwg Folder: L:\TS\CAD\Projects\GV\GV-SO-027667 289 Carling Avenue Ottawa\AutoCAD\DWGs\2017 Phase 2 ESA Thursday, April 13, 2017 @ 14:32 by Rob Wesson

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



Parameter	MOECC Table 7	MW17-04 18-Feb-2017	MW17-04 13-Mar-2017
Chloride	1 800	NA	7 200
Sodium	1 800 000	7 000 000	3 800 000

Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.
3. All units are expressed in micrograms per litre (µg/L).

Legend

- Site boundary
- Borehole location (DST, 2017)
- Borehole location (Intera, 1997)
- Monitoring well location (DST, 2017)

0 2 4 6 8 10 m

Scale 1:250

A	12-04-17	Final	E.D.
Revision	Date	Issue	Approval

Client: City of Ottawa

Site: 289 Carling Avenue, Ottawa, ON

Report Title: Phase Two Environmental Site Assessment

Drawing Title: Summary of Groundwater Exceedances of the MOECC Table 7 Standards

Designed By	Scale
G.R.	As shown
Drawn By	**Date**
R.W.	April 2017
Approved By	**Project No.**
E.D.	GV-SO-027667

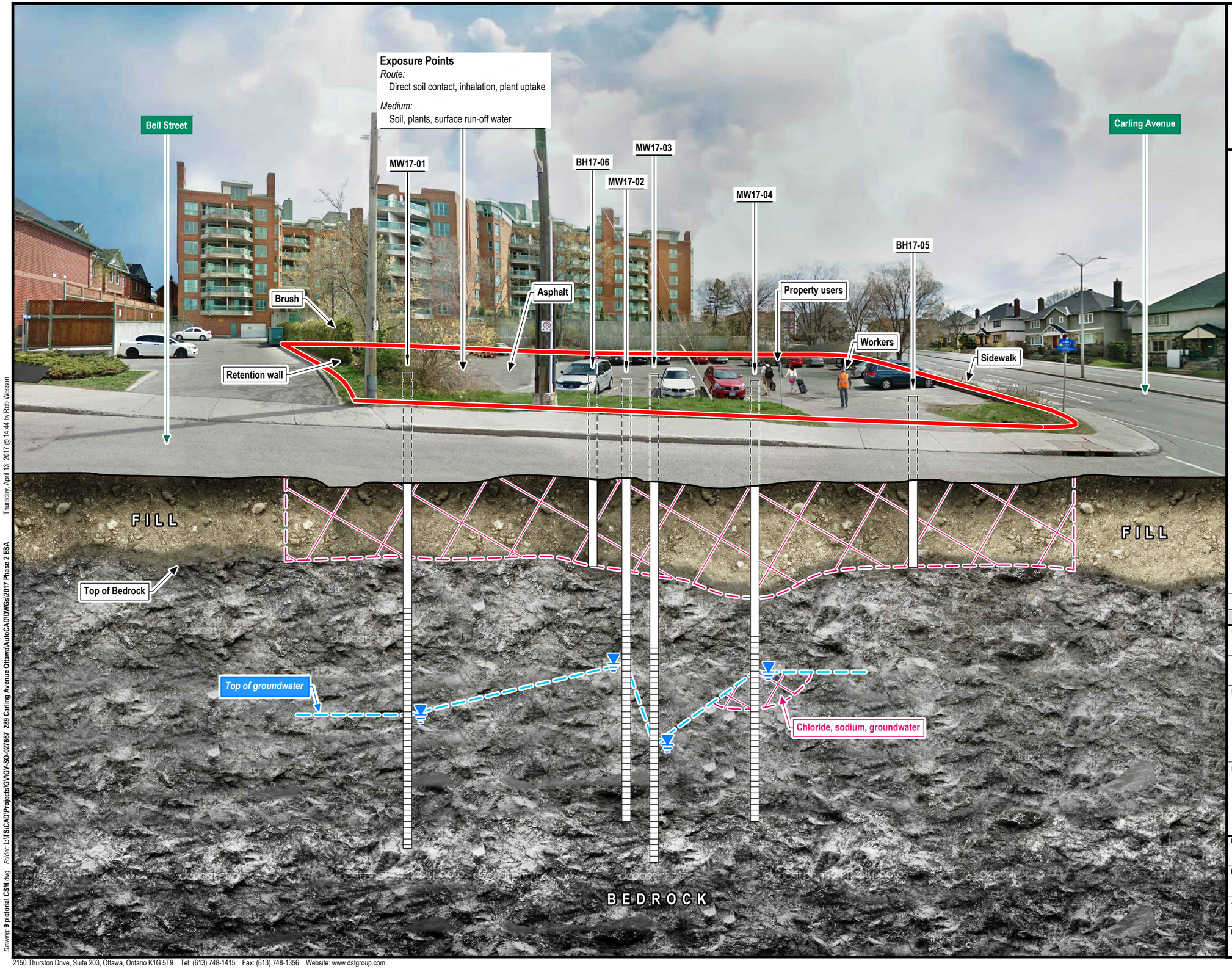
Figure No. 8

Folder: L:\TS\CAD\Projects\GV\GV-SO-027667 289 Carling Avenue Ottawa\AutoCAD\DWGs\2017 Phase 2 ESA

Drawing: 8 summary of GW exceedances.dwg

Wednesday, May 10, 2017 @ 12:22 by Rob Wesson

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com



Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Do not scale drawing.

Legend

Site boundary

Extent of contaminations of concern

Pictorial visulization
Not to Scale

Revision	Date	Issue	Approval
A	12-04-17	Final	E.D.

Client: **City of Ottawa**

Site: **289 Carling Avenue, Ottawa, ON**

Report Title: **Phase Two Environmental Site Assessment**

Drawing Title: **Pictorial Conceptual Site Model**

Designed By: G.R.	Scale: Not to Scale
Drawn By: R.W.	Date: April 2017
Approved By: E.D.	Project No.: GV-SO-027667

Figure No.: 9

Drawing: 9 pictorial CSM.dwg Folder: L:\TS\CAD\Projects\GV\GV-SO-027667 289 Carling Avenue Ottawa\AutoCAD\DWGs\2017 Phase 2 ESA Thursday, April 13, 2017 @ 14:44 by Rob Wesson

2150 Thurston Drive, Suite 203, Ottawa, Ontario K1G 5T9 Tel: (613) 748-1415 Fax: (613) 748-1356 Website: www.dstgroup.com

APPENDIX B
SITE PHOTOGRAPHS

Photograph 1: View of snow piles at location MW17-01, facing northeast (Jan 20, 2017)

Photograph 2: View of drilling activities at MW17-01, facing northeast (Feb 11, 2017)

Photograph 3: View of drilling activities at MW17-01, facing southwest (Feb 11, 2017)

Photograph 4: View of groundwater sampling activity at location MW17-04, facing north (Feb 18, 2017)

Photograph 5: View of the pavement poor condition at the Site, facing north (Feb 18, 2017)

Photograph 6: View of typical purged water during monitoring well development (Feb 18, 2017)

APPENDIX C
BOREHOLE LOGS

LOG OF BOREHOLE MW17-01

REF. No.: GV-SO-027667	**DST CONSULTING ENGINEERS INC.**
CLIENT: City of Ottawa	SURFACE ELEVATION: 100.83 m
PROJECT: Phase 2 Environmental Site Assessment	METHOD: Hollow Stem Auger
LOCATION: 289 Carling Avenue	DIAMETER: 75 mm (Inner diameter)
COORDINATES: **5027694.36** m N, **445057.66** m E	DATE: February 11, 2017

CVC * ■ % LEL 20 40 60 80 ○ PPM 20 40 60 80	PPM	SAMPLES No.	Type	SPT N-Value	SYMBL	SUBSURFACE PROFILE MATERIAL DESCRIPTION	DPTH m	ELEV m	WATER DATA	REMARKS
						SURFACE				
		SS1		21		ASPHALT FILL - Sand, some silt, light brown, frozen				
						FILL - Sand, some silt, black ash fragments, black, frozen				
						LIMESTONE - Interbedded with black shale, dark grey				
							1.0			
						- Fractured from 0.6 m to 3.0 m, fractures are rust stained				Groundwater depth 1.87 m on February 12, 2017
		CS1					2.0			
							3.0			
		CS2				- Heavily fractured from 3.0 m to 4.0 m				
							4.0			
						End of borehole at 4.05 m				

DST consulting engineers

Soil Sample
Rock Core

* - Combustible Vapour Concentration
ND - Non-Detectable

Bentonite & Riser
Sand Pack & Screen

GASTECBH PROJECT FILE GV-SO-027667 - 2017-03-22 - PHASE 2 ESA V1.1.GPJ DST_MIN.GDT 4-13-17

LOG OF BOREHOLE MW17-02

REF. No.: GV-SO-027667	**DST CONSULTING ENGINEERS INC.**
CLIENT: City of Ottawa	SURFACE ELEVATION: 101.18 m
PROJECT: Phase 2 Environmental Site Assessment	METHOD: Hollow Stem Auger
LOCATION: 289 Carling Avenue	DIAMETER: 75 mm (Inner diameter)
COORDINATES: **5027677.27** m N, **445055.81** m E	DATE: February 11, 2017

CVC * ■ % LEL 20 40 60 80 ○ PPM 20 40 60 80	PPM	SAMPLES No.	Type	SPT N-Value	SYMBL	SUBSURFACE PROFILE MATERIAL DESCRIPTION	DPTH m	ELEV m	WATER DATA	REMARKS
						SURFACE				
		SS1		50		ASPHALT - Black				N/A = ppm not enough sample to screen CVC's
						FILL - Sand, some gravel, light brown, frozen				
						FILL - Sand, some silt, some gravel, black ash fragments, black stained, frozen				
						LIMESTONE - interbedded with black shale, dark grey				
							1.0			
										Groundwater depth 1.72 m on February 12, 2017
							2.0			
		CS1				- Fractured from 0.6 m to 3.1 m. Fractures are rust stained				
							3.0			
		CS2				- Heavily fractured from 3.1 m to 4.0 m				
							4.0			
						End of Borehole 4.05 m				

DST consulting engineers

Soil Sample
Rock Core

* - Combustible Vapour Concentration
ND - Non-Detectable

Bentonite & Riser
Sand Pack & Screen

GASTECBH PROJECT FILE GV-SO-027667 - 2017-03-22 - PHASE 2 ESA V1.1.GPJ DST_MIN.GDT 4-13-17

LOG OF BOREHOLE MW17-03

REF. No.: GV-SO-027667	**DST CONSULTING ENGINEERS INC.**
CLIENT: City of Ottawa	SURFACE ELEVATION: 100.88 m
PROJECT: Phase 2 Environmental Site Assessment	METHOD: Hollow Stem Auger
LOCATION: 289 Carling Avenue	DIAMETER: 75 mm (Inner diameter)
COORDINATES: **5027687.56** m N, **445074.51** m E	DATE: February 11, 2017

CVC * ■ % LEL 20 40 60 80 ○ PPM 20 40 60 80	PPM	SAMPLES No.	Type	SPT N-Value	SUBSURFACE PROFILE SYMBL	MATERIAL DESCRIPTION	DPTH m	ELEV m	WATER DATA	REMARKS
						SURFACE				
		SS1		47		ASPHALT - Black FILL - Sand some silt, light brown, frozen FILL - Sand, some silt, black ash fragments, black stained FILL - Sand, debris and ash fragments, black stained, frozen				
		CS1				LIMESTONE - Interbedded with black shale, dark grey	1.0			Groundwater depth 1.8 m on February 12, 2017
		CS2				- Fractured from 2.0 m to 3.0 m, fractures are rust stained	2.0			
		CS3					3.0			
						End of Borehole at 4.05 m	4.0			

DST consulting engineers

Soil Sample
Rock Core

* - Combustible Vapour Concentration
ND - Non-Detectable

Bentonite & Riser
Sand Pack & Screen

GASTECBH PROJECT FILE GV-SO-027667 - 2017-03-22 - PHASE 2 ESA V1.1.GPJ DST_MIN.GDT 4-13-17

LOG OF BOREHOLE MW17-04

REF. No.: GV-SO-027667	**DST CONSULTING ENGINEERS INC.**
CLIENT: City of Ottawa	SURFACE ELEVATION: 101.29 m
PROJECT: Phase 2 Environmental Site Assessment	METHOD: Hollow Stem Auger
LOCATION: 289 Carling Avenue	DIAMETER: 75 mm (Inner diameter)
COORDINATES: **5027671.43** m N, **445068.02** m E	DATE: February 12, 2017

CVC * ■ % LEL 20 40 60 80 ○ PPM 20 40 60 80	PPM	SAMPLES No.	Type	SPT N-Value	SYMBL	SUBSURFACE PROFILE MATERIAL DESCRIPTION	DPTH m	ELEV m	WATER DATA	REMARKS
						SURFACE				
		SS1		50		ASPHALT FILL - Sand with silt, some gravel, light brown, frozen				40 ppm - Hexane 1 ppm - Isob. Groundwater depth 0.3 m on February 12, 2017
		CS1				LIMESTONE - Interbedded with black shale, dark grey - Heavily fractured from 0.85 m to 1.2 m, rust staining in fractures	1.0			
		CS2					2.0 3.0			
						End of Borehole at 4.0 m	4.0			

DST consulting engineers

Soil Sample
Rock Core

* - Combustible Vapour Concentration
ND - Non-Detectable

Bentonite & Riser
Sand Pack & Screen

GASTECBH PROJECT FILE GV-SO-027667 - 2017-03-22 - PHASE 2 ESA V1.1.GPJ DST_MIN.GDT 4-13-17

LOG OF BOREHOLE BH17-05

REF. No.: GV-SO-027667	**DST CONSULTING ENGINEERS INC.**
CLIENT: City of Ottawa	SURFACE ELEVATION: 101.43 m
PROJECT: Phase 2 Environmental Site Assessment	METHOD: Hollow Stem Auger
LOCATION: 289 Carling Avenue	DIAMETER: 75 mm (Inner diameter)
COORDINATES: **5027665.21** m N, **445071.93** m E	DATE: February 12, 2017

CVC * ■ % LEL 20 40 60 80 ○ PPM 20 40 60 80	PPM	SAMPLES No.	Type	SPT N-Value	SUBSURFACE PROFILE SYMBL	MATERIAL DESCRIPTION	DPTH m	ELEV m	WATER DATA	REMARKS
						SURFACE				
		SS1		69		ASPHALT FILL - Sand, some silt, light brown, frozen FILL - Sand, ash fragments, black stained, frozen				0 ppm - Hexane 0 ppm - Isob. Duplicate sample (DUP #1) collected at depth of 0.03 - 0.60 mbgs
						End of Borehole at 0.7 m Auger refusal	1.0 2.0 3.0 4.0			No monitoring well installed

Soil Sample
Rock Core

* - Combustible Vapour Concentration
ND - Non-Detectable

Bentonite & Riser
Sand Pack & Screen

GASTECBH PROJECT FILE GV-SO-027667 - 2017-03-22 - PHASE 2 ESA V1.1.GPJ DST_MIN.GDT 4-13-17

LOG OF BOREHOLE BH17-06

REF. No.: GV-SO-027667	**DST CONSULTING ENGINEERS INC.**
CLIENT: City of Ottawa	SURFACE ELEVATION: 101.22 m
PROJECT: Phase 2 Environmental Site Assessment	METHOD: Hollow Stem Auger
LOCATION: 289 Carling Avenue	DIAMETER: 75 mm (Inner diameter)
COORDINATES: **5027684.04** m N, **445064.82** m E	DATE: February 12, 2017

CVC * ■ % LEL 20 40 60 80 ○ PPM 20 40 60 80	PPM	SAMPLES No.	Type	SPT N-Value	SUBSURFACE PROFILE SYMBL	MATERIAL DESCRIPTION	DPTH m	ELEV m	WATER DATA	REMARKS
						SURFACE				
		SS1		44		ASPHALT FILL - Sand, ash fragments, black staining, frozen				0 ppm - Hexane 0 ppm - Isob.
						End of Borehole at 0.65 m Auger refusal				No monitoring well installed
							1.0			
							2.0			
							3.0			
							4.0			

DST consulting engineers

Soil Sample
Rock Core

* - Combustible Vapour Concentration
ND - Non-Detectable

Bentonite & Riser
Sand Pack & Screen

GASTECBH PROJECT FILE GV-SO-027667 - 2017-03-22 - PHASE 2 ESA V1.1.GPJ DST_MIN.GDT 4-13-17

APPENDIX D
ELEVATION SURVEY DATA

Table 1: Groundwater Levels in Monitoring Wells

Monitoring Well	GPS Coordinates	Surface Elevation (2)	Groundwater Level (mbtc)	Groundwater Level (mbgs)	Groundwater Elevation (2)
MW17-01 (Feb. 27, 2017)	5027694.4 N 445057.7 E	100.83 (GS)	2.02	2.09	98.68
MW17-02 (Feb. 18, 2017)	5027677.3 N 445055.8 E	101.18 (GS)	1.29	1.35	99.83
MW17-03 (Feb. 18, 2017)	5027687.6 N 445074.5 E	100.88 (GS)	2.07	2.14	98.74
MW17-04 (Feb. 18, 2017)	5027671.4 N 445068.0 E	101.22 (GS)	1.48	1.55	99.74

Note: (1) GS refers to the ground surface adjacent to the monitoring well, calculated with benchmark located on site.

(2) Elevations are relative to an arbitrary benchmark with an assumed elevation of 100 m.

(3) mbtc: Metres below top of the casing

(4) mbgs: Metres below ground surface

APPENDIX E
LABORATORY ANALYTICAL RESULTS

Table 2: Soil Analytical Results - Petroleum Hydrocarbons (PHCs) and BTEX

Parameter Description	Guidelines/ Standards		Analytical Results (Sample ID / Depth / Sampling Date d/m/y)					
	MOECC Table 7 - Non-Potable GW - Shallow Soils (Res/Park/Inst) Coarse Grained	BH-21[1] 0.15-0.76 mbgs 29-Aug-1997	MW17-01 0.03 - 0.30 mbgs 11-Feb-2017	MW17-03 0.03 - 0.50 11-Feb-2017	MW17-04 0.03 - 0.50 12-Feb-2017	BH17-05 0.03 - 0.60 12-Feb-2017	DUP # 1 Is the Dupliacte of BH17-05 0.03 - 0.60 12-Feb-2017	BH17-06 0.03 - 0.60 12-Feb-2017
BTEX								
Benzene	0.21	<0.038	0.49	0.031	<0.020	0.04	0.037	0.065
Toluene	2.3	<0.038	1.5	0.15	<0.020	0.11	0.1	0.2
Ethylbenzene	2	<0.038	0.3	0.028	<0.020	0.02	0.023	0.055
o-Xylene	NG	<0.038	0.81	0.11	<0.020	0.071	0.077	0.18
p+m-Xylene	NG	<0.038	1.3	0.15	<0.020	0.085	0.09	0.22
Total Xylene	3.1	<0.038	2.1	0.26	<0.020	0.16	0.17	0.4
PHCs								
F1 PHC (C6-C10)	55	NA	21	<10	<10	<10	<10	<10
F1 PHC (C6-C10) - BTEX	55	NA	16	<10	<10	<10	<10	<10
F2 PHC (>C10-C16)	98	NA	25	16	<10	<10	NA	27
F3 PHC (>C16-C34)	300	NA	96	200	59	150	NA	290
F4 PHC (>C34-C50)	2800	NA	59	1000	240	490	NA	420
F4 PHC (>C34) SG	2800	NA	170	**5100**	1200	2300	NA	1200

Notes:

- All units are expressed in micrograms per gram (µg/g).

[1] Historical Soil Sample Results from Intera Consultants Ltd., Phase II ESA Final Report November 1997.

NA - Not Available

MOECC Table 7 - Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, Shallow Soils at Residential, Parkland and Institutional Property Use . Coarse textured soils.

NG - No guideline/standard available

< - Less than laboratory reportable detection limit (value indicated)

BOLD - Parameter Exceeds MOECC Table 7 Standards

Table 3: Soil Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)

Parameter Description	Guidelines/Standards	Analytical Results (Sample ID / Depth / Sampling Date d/m/y)					
	MOECC Table 7 - Non-Potable GW - Shallow Soils (Res/Park/Inst) Coarse Grained	BH-21[1] 0.15-0.76 mbgs 29-Aug-1997	MW17-01 0.03 - 0.30 mbgs 11-Feb-2017	MW17-03 0.03 - 0.50 11-Feb-2017	MW17-04 0.03 - 0.50 12-Feb-2017	BH17-05 0.03 - 0.60 12-Feb-2017	BH17-06 0.03 - 0.60 12-Feb-2017
Methylnaphthalene, 2-(1-)	0.99		0.49	<0.071	<0.071	0.25	**2.0**
Acenaphthene	7.9	<0.0035	0.066	<0.050	<0.050	<0.050	0.018
Acenaphthylene	0.15	0.033	**0.24**	<0.050	<0.050	**0.49**	0.055
Anthracene	0.67	0.033	0.51	0.075	<0.050	0.25	0.083
Benzo(a)anthracene	0.5	0.23	**2.1**	0.29	<0.050	**1.5**	0.45
Benzo(a)pyrene	0.3	0.23	**1.5**	**0.32**	<0.050	**2.0**	**0.38**
Benzo(b/j)fluoranthene	0.78	0.26	**1.9**	0.42	0.051	**2.4**	0.54
Benzo(g,h,i)perylene	6.6	0.099	0.62	0.26	<0.050	1.5	0.21
Benzo(k)fluoranthene	0.78	0.26	0.75	0.16	<0.050	**0.89**	0.20
Chrysene	7	0.26	1.6	0.26	<0.050	1.3	0.40
Dibenz(a,h)anthracene	0.1	<0.0035	**0.23**	0.056	<0.050	**0.31**	0.067
Fluoranthene	0.69	0.26	**4.1**	0.56	0.073	**1.5**	**0.81**
Fluorene	62	<0.0035	0.074	<0.050	<0.050	<0.050	0.023
Indeno(1,2,3-cd)pyrene	0.38	0.066	**0.79**	0.26	<0.050	**1.6**	0.24
1-Methylnaphthalene	0.99	0.63	0.24	<0.050	<0.050	0.12	0.86
2-Methylnaphthalene	0.99	0.69	0.25	0.052	<0.050	0.14	**1.1**
Naphthalene	0.6	0.46	0.16	<0.050	<0.050	0.11	**0.79**
Phenanthrene	6.2	0.46	1.3	0.33	<0.050	0.31	0.70
Pyrene	78	0.3	3.2	0.47	0.069	1.5	0.70

Notes:

- All units are expressed in micrograms per gram (µg/g).

[1] Historical Soil Sample Results from Intera Consultants Ltd., Phase II ESA Final Report November 1997.

NA - Not Available

MOECC Table 7 - Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, Shallow Soils at Residential, Parkland and Institutional Property Use . Coarse textured soils.

NG - No guideline/standard available

< - Less than laboratory reportable detection limit (value indicated)

BOLD - Parameter Exceeds MOECC Table 7 Standards

Table 4: Soil Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)

Parameter Description	Guidelines/Standards	Analytical Results (Sample ID / Depth / Sampling Date d/m/y)				
	MOECC Table 7 - Non-Potable GW - Shallow Soils (Res/Park/Inst) Coarse Grained	MW17-01 0.03 - 0.30 mbgs 11-Feb-2017	MW17-03 0.03 - 0.50 11-Feb-2017	MW17-04 0.03 - 0.50 12-Feb-2017	BH17-05 0.03 - 0.60 12-Feb-2017	BH17-06 0.03 - 0.60 12-Feb-2017
Aroclor 1242	NG	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1248	NG	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1254	NG	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1260	NG	<0.010	<0.010	<0.010	<0.010	<0.010
Total PCB	0.3	<0.010	<0.010	<0.010	<0.010	<0.010

Notes:

- All units are expressed in micrograms per gram (µg/g).

MOECC Table 7 - Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, Shallow Soils at Residential, Parkland and Institutional Property Use . Coarse textured soils.

NG - No guideline/standard

< - Less than laboratory reportable detection limit (value indicated)

BOLD - Parameter Exceeds MOECC Table 7 Standards

Table 5: Soil Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)

Parameter Description	Guidelines/Standards	Analytical Results (Sample ID / Depth / Sampling Date d/m/y)					
	MOECC Table 7 - Non-Potable GW - Shallow Soils (Res/Park/Inst) Coarse Grained	MW17-01 0.03 - 0.30 mbgs 11-Feb-2017	MW17-03 0.03 - 0.50 11-Feb-2017	MW17-04 0.03 - 0.50 12-Feb-2017	BH17-05 0.03 - 0.60 12-Feb-2017	BH17-06 0.03 - 0.60 12-Feb-2017	DUP #1 (Duplicate of BH17-05) 0.03 - 0.60 12-Feb-2017
1,3-Dichloropropene (cis+trans)	NG	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acetone (2-Propanone)	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon Tetrachloride	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	2.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	9.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	4.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	0.0083	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane (FREON 12)	16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	3.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethylene	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	0.084	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	NG	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,3-Dichloropropene	MNG	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylene Dibromide	0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Hexane	2.8	0.29	0.079	<0.050	0.053	0.069	0.060
Methylene Chloride(Dichloromethane)	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methyl Ethyl Ketone (2-Butanone)	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl t-butyl ether (MTBE)	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Styrene	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.058	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethylene	0.28	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	0.38	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	0.061	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichlorofluoromethane (FREON 11)	16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl Chloride	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Notes:

- All units are expressed in micrograms per gram (µg/g).

MOECC Table 7 - Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, Shallow Soils at Residential, Parkland and Institutional Property Use . Coarse textured soils.

NG - No guideline/standard

< - Less than laboratory reportable detection limit (value indicated)

BOLD - Parameter Exceeds MOECC Table 7 Standards

Table 6: Soil Analytical Results - Metals

Parameter Description	Guidelines/Standards	Analytical Results (Sample ID / Depth / Sampling Date d/m/y)					
	MMOECC Table 7 - Non-Potable GW - Shallow Soils (Res/Park/Inst) Coarse Grained	MW17-01 0.03 - 0.30 mbgs 11-Feb-2017	MW17-02 0.03 - 0.10 11-Feb-2017	MW17-03 0.03 - 0.50 11-Feb-2017	MW17-04 0.03 - 0.50 12-Feb-2017	BH17-05 0.03 - 0.60 12-Feb-2017	BH17-06 0.03 - 0.60 12-Feb-2017
Chromium (VI)	8	0.6	<0.2	<0.2	<0.2	<0.2	<0.2
Hot Water Ext. Boron (B)	1.5	0.23	<0.05	0.49	0.14	0.19	0.16
Acid Extractable Antimony (Sb)	7.5	**27**	2.3	1.2	<0.2	0.57	2.5
Acid Extractable Arsenic (As)	18	17	**32**	16	3.5	7.5	**53**
Acid Extractable Barium (Ba)	390	**910**	**600**	190	59	96	390
Acid Extractable Beryllium (Be)	4	1.1	1.70	0.80	0.41	0.49	1.2
Acid Extractable Boron (B)	120	33	9.3	15	7.9	6.5	8.9
Acid Extractable Cadmium (Cd)	1.2	0.29	0.30	0.21	<0.10	0.13	0.25
Acid Extractable Chromium (Cr)	160	**170**	16	15	19	21	15
Acid Extractable Cobalt (Co)	22	8.2	11	6.9	5.4	7.1	9.2
Acid Extractable Copper (Cu)	140	79	44	21	15	25	47
Acid Extractable Lead (Pb)	120	**2700**	**440**	89	12	**630**	**300**
Acid Extractable Molybdenum (Mo)	6.9	3.6	**11**	3.2	1.1	1.7	**10**
Acid Extractable Nickel (Ni)	100	24	25	20	13	18	24
Acid Extractable Selenium (Se)	2.4	0.95	0.91	0.91	<0.50	<0.50	2.2
Acid Extractable Silver (Ag)	20	**24**	<0.20	0.49	<0.20	<0.20	<0.20
Acid Extractable Thallium (Tl)	1	0.61	0.32	0.20	0.12	0.26	0.41
Acid Extractable Uranium (U)	23	0.74	0.64	0.64	0.53	0.48	1.0
Acid Extractable Vanadium (V)	86	27	31	21	25	37	25
Acid Extractable Zinc (Zn)	340	**1300**	160	180	29	70	130
Acid Extractable Mercury (Hg)	0.27	0.070	0.056	0.12	<0.050	0.10	**0.79**

Notes:

- All units are expressed in micrograms per gram (µg/g).

[1] Historical Soil Sample Results from Intera Consultants Ltd., Final Report November 1997

NA - Not Available

MOECC Table 7 - Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, Shallow Soils at Residential, Parkland and Institutional Property Use . Coarse textured soils.

NG - No guideline/standard

< - Less than laboratory reportable detection limit (value indicated)

BOLD - Parameter Exceeds MOECC Table 7 Standards

Table 7: Soil Analytical Results - Inorganic

Parameter Description	Guidelines/Standards	Analytical Results (Sample ID / Depth / Sampling Date d/m/y)				
	MOECC Table 7 - Non-Potable GW - Shallow Soils (Res/Park/Inst) Coarse Grained	MW17-01 0.03 - 0.30 mbgs 11-Feb-2017	MW17-03 0.03 - 0.50 11-Feb-2017	MW17-04 0.03 - 0.50 12-Feb-2017	BH17-05 0.03 - 0.60 12-Feb-2017	BH17-06 0.03 - 0.60 12-Feb-2017
Calculated Parameters						
Sodium Adsoprtion Ratio	5	0.78	**5.8**	**13**	**12**	4.2
Inorganics						
Conductivity	0.7	0.62	0.60	**1.2**	**1.2**	**1.6**
pH	NG	7.60	7.69	8.04	7.67	7.64
Free Cyanide	0.051	<0.01	**0.2**	<0.01	<0.01	<0.01
Moisture	MNG	23	15	6.00	19	17
Phenols						
Phenols		<0.04	<0.04	<0.04	<0.04	<0.04
Miscellaneous Parameters						
Grain Size		Coarse	-	-	-	COARSE
Sieve - #200 (<0.075mm)	NG	28	-	-	-	36
Sieve - #200 (>0.075mm)	NG	72	-	-	-	64

Notes:

- All units are expressed in micrograms per gram (µg/g).

MOECC Table 7 - Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater

NG - No guideline/standard

< - Less than laboratory reportable detection limit (value indicated)

BOLD - Parameter Exceeds MOECC Table 7 Standards

Table 8: Soil Analytical Results - Waste Characterization

		Sample ID	TCLP COMP
		Sample Date (dd-mmm-yr)	12-Feb-2017
Parameter	**Unit**	**Schedule 4** [1]	
General Chemistry			
pH	-		7.94
Leachable Fluoride (F-)	mg/L	150	0.13
Leachable Free Cyanide	mg/L	20	<0.010
Leachable Nitrite (N)	mg/L	NG[2]	<0.10
Leachable Nitrate (N)	mg/L	NG	<1.0
Leachable Nitrate + Nitrite	mg/L	1000	<1.0
Metals			
Leachable Arsenic (As)	mg/L	2.5	<0.2
Leachable Barium (Ba)	mg/L	100	1.0
Leachable Boron (B)	mg/L	500	<0.1
Leachable Cadmium (Cd)	mg/L	0.5	<0.05
Leachable Chromium (Cr)	mg/L	5	<0.1
Leachable Lead (Pb)	mg/L	5	<0.1
Leachable Mercury (Hg)	mg/L	1	<0.0010
Leachable Selenium (Se)	mg/L	1	<0.1
Leachable Silver (Ag)	mg/L	5	<0.01
Leachable Uranium (U)	mg/L	10	<0.01
PAHs			
Leachable Benzo(a)pyrene	µg/L	1	<0.10
PHCs			
Leachable Benzene	ug/L	NG	0.1
Leachable Toluene	ug/L	NG	0.31
Leachable Ethylbenzene	ug/L	NG	0.068
Leachable Xylenes	ug/L	NG	0.46
Leachable F1 (C6-C10) - BTEX	ug/L	NG	<10
Leachable F2(C10-C16)	ug/L	NG	11
Leachable F3 (C16-C34)	ug/L	NG	330
Leachable F4 (C34-C50)	ug/L	NG	3900
Inorganics			
Ignitability	N/A	NV	NF/NI [3]

Notes:

1) R.R.O. Reg. 347 of the Ontario Environmental Protection Act, Schedule 4: Leachate Quality Criteria (as amended).

2) "NG" means no guideline value for that parameter was presented in the associated standard/guidance document.

3) "NF/NI" means non Flammable and Non Ignitable

4) "<" Less than the laboratory Reportable Detection Limit (value indicated).

Table 9: Groundwater Analytical Results - Petroleum Hydrocarbons (PHCs) and BTEX

Parameter Description	Guidelines/Standards			Analytical Results (Sample ID / Sampling Date d/m/y)						
	MOECC Table 7 - Non-Potable GW - Shallow Soils (Res/Park/Inst) Coarse Grained	BH-21[1] 29-Aug-1997	BH-23[1] 29-Aug-1997	MW17-01 27-Feb-2017	MW17-02 18-Feb-2017	MW17-03 18-Feb-2017	MW17-04 18-Feb-2017	MW17-07 (Duplicate of MW17-02)	Trip Blank	Field Blank
BTEX										
Benzene	0.5	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	0.8	**<1.0**	<0.50	<0.20	0.31	0.23	0.63	0.31	<0.20	<0.20
Ethylbenzene	0.5	<0.50	<1.0	0.23	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	NG	<0.50	<0.50	0.69	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	NG	<1.0	<0.50	<0.20	0.29	0.25	0.47	0.30	<0.20	<0.20
Total Xylene	72	<0.50	<0.50	0.69	0.29	0.25	0.47	0.30	<0.20	<0.20
PHCs										
F1 PHC (C6-C10)	420	NA	NA	<25	<25	<25	<25	<25	<25	<25
F1 PHC (C6-C10) - BTEX	420	NA	NA	<25	<25	<25	<25	<25	<25	<25
F2 PHC (>C10-C16)	150	NA	NA	<100	<100	<100	<100	<100	<100	<100
F3 PHC (>C16-C34)	500	NA	NA	<200	<200	<200	<200	<200	<200	<200
F4 PHC (>C34)	500	NA	NA	<200	<200	<200	<200	<200	<200	<200

Notes:

- All units are expressed in micrograms per litre (µg/L).

[1] Historical Groundwater Sample Results from Intera Consultants Ltd., Phase II ESA Final Report November 1997.

NA - Not Available

MOECC Table 7 - Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, Shallow Soils at Residential, Parkland and Institutional Property Use . Coarse textured soils.

NG - No guideline/standard available

< - Less than laboratory reportable detection limit (value indicated)

BOLD - Parameter Exceeds MOECC Table 7 Standards

BOLD - Laboratory Reportable Detection Limit Exceeds MOECC Table 7 Standards

Table 10: Groundwater Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)

Parameter Description	Guidelines/Standards		Analytical Results (Sample ID / Sampling Date d/m/y)				
	MOECC Table 7 - Non-Potable GW - Shallow Soils (Res/Park/Inst) Coarse Grained	BH-23[1] 29-Aug-1997	MW17-01 27-Feb-2017	MW17-02 18-Feb-2017	MW17-03 18-Feb-2017	MW17-04 18-Feb-2017	MW17-07 (Duplicate of MW17-02)
Polyaromatic Hydrocarbons							
Acenaphthene	4.1	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	1	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.1	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.2	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b/j)fluoranthene	0.1	**<0.20**	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	0.2	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	0.1	**<0.20**	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	0.1	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenz(a,h)anthracene	0.2	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	0.4	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	120	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.2	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
1-Methylnaphthalene	2	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
2-Methylnaphthalene	2	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Naphthalene	7	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	0.1	<0.10	<0.030	<0.030	<0.030	<0.030	<0.030
Pyrene	0.2	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Methylnaphthalene 2-(1-)	2	NA	<0.071	<0.071	<0.071	<0.071	<0.071
Biphenyl	0.5	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050
Phenolics							
2-Chlorophenol	8.9	NA	<0.5	<0.1	<0.1	<0.1	NA
2,3,4,6-Tetrachlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
2,3,5-Trichlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
2,4-Dichlorophenol	20	NA	<0.5	<0.1	<0.1	<0.1	NA
2,4-Dimethylphenol	10	NA	<5	<1	<1	<1	NA
2,4,6-Trichlorophenol	0.2	NA	<0.5	<0.1	<0.1	<0.1	NA
2,6-Dichlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
4-Chloro-3-Methylphenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
4-Nitrophenol	NG	NA	<5	<1	<1	<1	NA
m/p-Cresol	NG	NA	<2.5	<0.5	<0.5	<0.5	NA
o-Cresol	NG	NA	<2.5	<0.5	<0.5	<0.5	NA
Pentachlorophenol	0.5	NA	<0.5	<0.1	<0.1	<0.1	NA
Phenol	5	NA	<2.5	<0.5	<0.5	<0.5	NA
2,3,4,5-Tetrachlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
2,3,5,6-Tetrachlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
2,3,4-Trichlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
2,3,6-Trichlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
2,4,5-Trichlorophenol	0.2	NA	<0.5	<0.1	<0.1	<0.1	NA
3,4,5-Trichlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
2,4-Dinitrophenol	10	NA	<5	<1	<1	<1	NA
2,3-Dichlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
2,5-Dichlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
3,4-Dichlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
3,5-Dichlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
4,6-Dinitro-2-methylphenol	NG	NA	<5	<1	<1	<1	NA
3 & 4-Chlorophenol	NG	NA	<0.5	<0.1	<0.1	<0.1	NA
2-Nitrophenol	NG	NA	<5	<1	<1	<1	NA

Notes:

- All units are expressed in micrograms per litre (µg/L).

[1] Historical Groundwater Sample Results from Intera Consultants Ltd., Phase II ESA Final Report November 1997.

NA - Not Available

MOECC Table 7 - Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, Shallow Soils at Residential, Parkland and Institutional Property Use . Coarse textured soils.

NG - No guideline/standard available

< - Less than laboratory reportable detection limit (value indicated)

BOLD - Parameter Exceeds MOECC Table 7 Standards

BOLD - Laboratory Reportable Detection Limit Exceeds MOECC Table 7 Standards

Table 11: Groundwater Analytical Results - Volitile Organic Compounds (VOCs)

Parameter Description	Guidelines/Standards	Analytical Results (Sample ID / Sampling Date d/m/y)							
	MOECC Table 7 - Non-Potable GW - Shallow Soils (Res/Park/Inst) Coarse Grained	BH-23[1] 29-Aug-1997	MW17-01 27-Feb-2017	MW17-02 18-Feb-2017	MW17-03 18-Feb-2017	MW17-04 18-Feb-2017	MW17-07 (Duplicate of MW17-02)	Trip Blank	Field Blank
1,3-Dichloropropene (cis+trans)	0.5	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acetone (2-Propanone)	2700	NA	<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane	2	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	5	<0.80	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	0.89	**<1.0**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	0.2	**<0.50**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	0.5	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	2	<0.60	<0.20	<0.20	<0.20	0.21	<0.20	<0.20	<0.20
Dibromochloromethane	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichlorobenzene	0.5	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	0.5	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	0.5	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane (FREON 12)	590	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	0.5	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	0.5	**<0.60**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,2-Dichloroethylene	1.6	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	0.5	**<0.70**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	NV	<0.40	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	NV	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylene Dibromide	0.2	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Hexane	400	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride(Dichloromethane)	5	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methyl Ethyl Ketone (2-Butanone)	640	NA	<10	<10	<10	<10	<10	<10	<10
Methyl Isobutyl Ketone	15	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl t-butyl ether (MTBE)	0.5	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	1.1	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	0.5	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	0.5	**<0.60**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	0.5	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	0.5	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	0.5	**<0.60**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	0.5	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane (FREON 11)	150	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	0.5	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Notes:

- All units are expressed in micrograms per litre (µg/L).

[1] Historical Groundwater Sample Results from Intera Consultants Ltd., Phase II ESA Final Report November 1997.

NA - Not Available

MOECC Table 7 - Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition, Shallow Soils at Residential, Parkland and Institutional Property Use . Coarse textured soils.

NG - No guideline/standard available

< - Less than laboratory reportable detection limit (value indicated)

BOLD - Parameter Exceeds MOECC Table 7 Standards

BOLD - Laboratory Reportable Detection Limit Exceeds MOECC Table 7 Standards

Table 12: Groundwater Analytical Results - Metals

Parameter Description	Guidelines/Standards	Analytical Results (Sample ID / Sampling Date d/m/y)					
	MMOECC Table 7 - Non-Potable GW - Shallow Soils (Res/Park/Inst) Coarse Grained	MW17-01 27-Feb-2017	MW17-02 18-Feb-2017	MW17-03 18-Feb-2017	MW17-04 18-Feb-2017	MW17-04 14-Mar-2017	MW17-07 (Duplicate of MW17-02)
Chromium (VI)	110	5.7	<0.50	<0.50	<0.50	NA	<0.50
Mercury (Hg)	0.1	<0.1	<0.1	<0.1	<0.1	NA	<0.1
Dissolved Antimony (Sb)	16000	1.90	0.61	<0.50	<5.0	NA	0.80
Dissolved Arsenic (As)	1500	<1.0	<1.0	<1.0	<10	NA	<1.0
Dissolved Barium (Ba)	23000	290	110	1100	1200	NA	110
Dissolved Beryllium (Be)	53	<0.50	<0.50	<0.50	<5.0	NA	<0.50
Dissolved Boron (B)	36000	47	71	43	100	NA	69
Dissolved Cadmium (Cd)	2.1	<0.10	<0.10	<0.10	<1.0	NA	<0.10
Dissolved Chromium (Cr)	640	6.30	<5.0	<5.0	<50	NA	<5.0
Dissolved Chloride (Ca)	1800	NA	NA	NA	NA	**7200**	NA
Dissolved Cobalt (Co)	52	<1.0	0.98	<2.5 (1)	<5.0	NA	1.1
Dissolved Copper (Cu)	69	2.2	4.2	1.4	<50	NA	1.9
Dissolved Lead (Pb)	20	<0.50	<0.50	<0.50	<5.0	NA	<0.50
Dissolved Molybdenum (Mo)	7300	2.3	1.8	0.78	<5.0	NA	1.8
Dissolved Nickel (Ni)	390	4.5	3.5	<5.0 (1)	11	NA	3.6
Dissolved Selenium (Se)	50	<2.0	<2.0	<2.0	<20	NA	<2.0
Dissolved Silver (Ag)	1.2	<0.10	<0.10	<0.10	<1.0	NA	<0.10
Dissolved Sodium (Na)	1800000	910,000	270,000	1,600,000	**7,000,000**	**3,800,000**	260,000
Dissolved Thallium (Tl)	400	0.063	0.071	0.072	<0.50	NA	0.067
Dissolved Uranium (U)	330	2.3	2.2	1.1	10	NA	2.3
Dissolved Vanadium (V)	200	2.5	<0.50	<2.5 (1)	<10	NA	<0.50
Dissolved Zinc (Zn)	890	13	8.1	7.8	<50	NA	5.2

Notes:

- All units are expressed in micrograms per litre (µg/L).

[1] Historical Groundwater Sample Results from Intera Consultants Ltd., Phase II ESA Final Report November 1997.

NA Not Available

MOECC Table 7 - Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 2011. Table 7: F Generic Site Condition Standards in a Non-Potable Groundwater Condition, Shallow Soils at Residential, Parkland and Institutional Property Use . Coarse textured soils.

NG - No guideline/standard available

Table 13a: Quality Assurance/ Quality Control (QA/QC) - Relative Percent Difference

Parameter Description	Units	BH17-05	DUP 1	RPD	Fail/Pass
		0.03 - 0.60 m			
BTEX		12-Feb-2017			
Benzene	µg/g	0.04	0.037	1.95	Pass
Toluene	µg/g	0.11	0.10	2.38	Pass
Ethylbenzene	µg/g	0.020	0.023	-3.49	Pass
o-Xylene	µg/g	0.071	0.077	-2.03	Pass
p+m-Xylene	µg/g	0.085	0.09	-1.43	Pass
Total Xylenes	µg/g	0.16	0.17	-1.52	Pass
PHC Fraction 1 to Fraction 4					
F1 (C6-C10)	µg/g	<10	NA	NC	NA
F1 (C6-C10) - BTEX	µg/g	<10	NA	NC	NA
F2 (C10-C16 Hydrocarbons)	µg/g	<10	NA	NC	NA
F3 (C16-C34 Hydrocarbons)	µg/g	150	NA	NC	NA
F4 (C34-C50 Hydrocarbons)	µg/g	490	NA	NC	NA

Notes:
RPD - Relative percent difference.
NC - RDP could not be calculated.
NA - Not Available
Fail - 30% or greater for PHC F1-F4, 40% or greaterfor PAHs, 50% or greater for VOCs, and 30% or greater for metals in soil
DUP #1 is a duplicate of BH17-05

Table 13b: Quality Assurance/ Quality Control (QA/QC) - Relative Percent Difference

Parameter Description	Units	BH17-05	DUP 1	RPD	Fail/Pass
		0.03 - 0.60 m			
		12-Feb-2017			
Acetone	µg/g	<0.50	<0.50	NC	NA
Bromodichloromethane	µg/g	<0.050	<0.050	NC	NA
Bromoform	µg/g	<0.050	<0.050	NC	NA
Bromomethane	µg/g	<0.050	<0.050	NC	NA
Carbon Tetrachloride	µg/g	<0.050	<0.050	NC	NA
Chlorobenzene	µg/g	<0.050	<0.050	NC	NA
Chloroform	µg/g	<0.050	<0.050	NC	NA
Dibromochloromethane	µg/g	<0.050	<0.050	NC	NA
1,2-Dichlorobenzene	µg/g	<0.050	<0.050	NC	NA
1,3-Dichlorobenzene	µg/g	<0.050	<0.050	NC	NA
1,4-Dichlorobenzene	µg/g	<0.050	<0.050	NC	NA
1,1-Dichloroethane	µg/g	<0.050	<0.050	NC	NA
1,2-Dichloroethane	µg/g	<0.050	<0.050	NC	NA
1,1-Dichloroethylene	µg/g	<0.050	<0.050	NC	NA
Cis-1,2-Dichloroethylene	µg/g	<0.050	<0.050	NC	NA
Trans-1,2-Dichloroethylene	µg/g	<0.050	<0.050	NC	NA
1,2-Dichloropropane	µg/g	<0.050	<0.050	NC	NA
Cis-1,3-Dichloropropylene	µg/g	<0.030	<0.030	NC	NA
Trans-1,3-Dichloropropylene	µg/g	<0.040	<0.040	NC	NA
Ethylene Dibromide	µg/g	<0.050	<0.050	NC	NA
Methyl Ethyl Ketone	µg/g	<0.50	<0.50	NC	NA
Methylene Chloride	µg/g	<0.050	<0.050	NC	NA
Methyl Isobutyl Ketone	µg/g	<0.50	<0.50	NC	NA
Methyl-t-Butyl Ether	µg/g	<0.050	<0.050	NC	NA
Styrene	µg/g	<0.050	<0.050	NC	NA
1,1,1,2-Tetrachloroethane	µg/g	<0.050	<0.050	NC	NA
1,1,2,2-Tetrachloroethane	µg/g	<0.050	<0.050	NC	NA
Tetrachloroethylene	µg/g	<0.050	<0.050	NC	NA
1,1,1-Trichloroethane	µg/g	<0.050	<0.050	NC	NA
1,1,2-Trichloroethane	µg/g	<0.050	<0.050	NC	NA
Trichloroethylene	µg/g	<0.010	<0.010	NC	NA
Vinyl Chloride	µg/g	<0.020	<0.020	NC	NA
Dichlorodifluoromethane	µg/g	<0.050	<0.050	NC	NA
Dioxane, 1,4-	µg/g	-	-	NC	NA
Hexane(n)	µg/g	<0.050	<0.050	NC	NA
Trichlorofluoromethane	µg/g	<0.050	<0.050	NC	NA
1,3-Dichloropropene (cis + trans)	µg/g	-	-	NC	NA

Notes:
RPD - Relative percent difference.
NC - RDP could not be calculated.
NA - Not Available
Fail - 30% or greater for PHC F1-F4, 40% or greaterfor PAHs, 50% or greater for VOCs, and 30% or greater for metals in soil
DUP #1 is a duplicate of BH17-05

Table 14a: Quality Assurance/ Quality Control (QA/QC) - Relative Percent Difference

Parameter Description	Units	MW17-02	MW17-07	RPD	Fail/Pass
		18-Feb-17			
BTEX					
Benzene	µg/L	<20	<20	NC	NA
Toluene	µg/L	0.31	0.31	0.00	Pass
Ethylbenzene	µg/L	<20	<20	NC	NA
o-Xylene	µg/L	<0.2	<0.2	NC	NA
p+m-Xylene	µg/L	0.29	0.3	-0.85	Pass
Total Xylenes	µg/L	0.29	0.30	-0.85	Pass
PHC Fraction 1 to Fraction 4					
F1 (C6-C10)	µg/L	<25	<25	NC	NA
F1 (C6-C10) - BTEX	µg/L	<25	<25	NC	NA
F2 (C10-C16 Hydrocarbons)	µg/L	<100	<100	NC	NA
F3 (C16-C34 Hydrocarbons)	µg/L	<200	<200	NC	NA
F4 (C34-C50 Hydrocarbons)	µg/L	<200	<200	NC	NA

Notes:
RPD - Relative percent difference.
NC - RDP could not be calculated.
NA - Not Available
30% or greater for PHC F1-F4, PAHs, VOCs, and 20% or greater for metals in groundwater
MW17-07 is a duplicate of MW17-02

Table 14b: Quality Assurance/ Quality Control (QA/QC) - Relative Percent Difference

Parameter Description	Units	MW17-02	MW17-07	RPD	Fail/Pass
		18-Feb-17			
Polyaromatic Hydrocarbons					
Acenaphthene	µg/L	<0.050	<0.050	NC	NA
Acenaphthylene	µg/L	<0.050	<0.050	NC	NA
Anthracene	µg/L	<0.050	<0.050	NC	NA
Benzo(a)anthracene	µg/L	<0.050	<0.050	NC	NA
Benzo(a)pyrene	µg/L	<0.010	<0.010	NC	NA
Benzo(b/j)fluoranthene	µg/L	<0.050	<0.050	NC	NA
Benzo(g,h,i)perylene	µg/L	<0.050	<0.050	NC	NA
Benzo(k)fluoranthene	µg/L	<0.050	<0.050	NC	NA
Chrysene	µg/L	<0.050	<0.050	NC	NA
Dibenz(a,h)anthracene	µg/L	<0.050	<0.050	NC	NA
Fluoranthene	µg/L	<0.050	<0.050	NC	NA
Fluorene	µg/L	<0.050	<0.050	NC	NA
Indeno(1,2,3-cd)pyrene	µg/L	<0.050	<0.050	NC	NA
1-Methylnaphthalene	µg/L	<0.050	<0.050	NC	NA
2-Methylnaphthalene	µg/L	<0.050	<0.050	NC	NA
Naphthalene	µg/L	<0.050	<0.050	NC	NA
Phenanthrene	µg/L	<0.030	<0.030	NC	NA
Pyrene	µg/L	<0.050	<0.050	NC	NA
Methylnaphthalene 2-(1-)	µg/L	<0.071	<0.071	NC	NA
Biphenyl	µg/L	<0.050	<0.050	NC	NA
Phenolics					
2-Chlorophenol	µg/L	<0.1	NA	NC	NA
2,3,4,6-Tetrachlorophenol	µg/L	<0.1	NA	NC	NA
2,3,5-Trichlorophenol	µg/L	<0.1	NA	NC	NA
2,4-Dichlorophenol	µg/L	<0.1	NA	NC	NA
2,4-Dimethylphenol	µg/L	<1	NA	NC	NA
2,4,6-Trichlorophenol	µg/L	<0.1	NA	NC	NA
2,6-Dichlorophenol	µg/L	<0.1	NA	NC	NA
4-Chloro-3-Methylphenol	µg/L	<0.1	NA	NC	NA
4-Nitrophenol	µg/L	<1	NA	NC	NA
m/p-Cresol	µg/L	<0.5	NA	NC	NA
o-Cresol	µg/L	<0.5	NA	NC	NA
Pentachlorophenol	µg/L	<0.1	NA	NC	NA
Phenol	µg/L	<0.5	NA	NC	NA
2,3,4,5-Tetrachlorophenol	µg/L	<0.1	NA	NC	NA
2,3,5,6-Tetrachlorophenol	µg/L	<0.1	NA	NC	NA
2,3,4-Trichlorophenol	µg/L	<0.1	NA	NC	NA
2,3,6-Trichlorophenol	µg/L	<0.1	NA	NC	NA
2,4,5-Trichlorophenol	µg/L	<0.1	NA	NC	NA
3,4,5-Trichlorophenol	µg/L	<0.1	NA	NC	NA
2,4-Dinitrophenol	µg/L	<1	NA	NC	NA
2,3-Dichlorophenol	µg/L	<0.1	NA	NC	NA
2,5-Dichlorophenol	µg/L	<0.1	NA	NC	NA
3,4-Dichlorophenol	µg/L	<0.1	NA	NC	NA
3,5-Dichlorophenol	µg/L	<0.1	NA	NC	NA
4,6-Dinitro-2-methylphenol	µg/L	<1	NA	NC	NA
3 & 4-Chlorophenol	µg/L	<0.1	NA	NC	NA
2-Nitrophenol	µg/L	<1	NA	NC	NA

Notes:
RPD - Relative percent difference.
NC - RDP could not be calculated.
NA - Not Available
30% or greater for PHC F1-F4, PAHs, VOCs, and 20% or greater for metals in groundwater
MW17-07 is a duplicate of MW17-02

Table 14c: Quality Assurance/ Quality Control (QA/QC) - Relative Percent Difference

Parameter Description	Units	MW17-02	MW17-07	RPD	Fail/Pass
		18-Feb-17			
Acetone	µg/L	<10	<0.50	NC	NA
Bromodichloromethane	µg/L	<0.50	<10	NC	NA
Bromoform	µg/L	<1.0	<0.50	NC	NA
Bromomethane	µg/L	<0.50	<1.0	NC	NA
Carbon Tetrachloride	µg/L	<0.20	<0.50	NC	NA
Chlorobenzene	µg/L	<0.20	<0.20	NC	NA
Chloroform	µg/L	<0.20	<0.20	NC	NA
Dibromochloromethane	µg/L	<0.50	<0.20	NC	NA
1,2-Dichlorobenzene	µg/L	<0.50	<0.50	NC	NA
1,3-Dichlorobenzene	µg/L	<0.50	<0.50	NC	NA
1,4-Dichlorobenzene	µg/L	<0.50	<0.50	NC	NA
1,1-Dichloroethane	µg/L	<1.0	<0.50	NC	NA
1,2-Dichloroethane	µg/L	<0.20	<1.0	NC	NA
1,1-Dichloroethylene	µg/L	<0.50	<0.20	NC	NA
Cis-1,2-Dichloroethylene	µg/L	<0.20	<0.50	NC	NA
Trans-1,2-Dichloroethylene	µg/L	<0.50	<0.20	NC	NA
1,2-Dichloropropane	µg/L	<0.50	<0.50	NC	NA
Cis-1,3-Dichloropropylene	µg/L	<0.20	<0.50	NC	NA
Trans-1,3-Dichloropropylene	µg/L	<0.30	<0.20	NC	NA
Ethylene Dibromide	µg/L	<0.40	<0.30	NC	NA
Methyl Ethyl Ketone	µg/L	<0.20	<0.40	NC	NA
Methylene Chloride	µg/L	<1.0	<0.20	NC	NA
Methyl Isobutyl Ketone	µg/L	<2.0	<1.0	NC	NA
Methyl-t-Butyl Ether	µg/L	<10	<2.0	NC	NA
Styrene	µg/L	<5.0	<10	NC	NA
1,1,1,2-Tetrachloroethane	µg/L	<0.50	<5.0	NC	NA
1,1,2,2-Tetrachloroethane	µg/L	<0.50	<0.50	NC	NA
Tetrachloroethylene	µg/L	<0.50	<0.50	NC	NA
1,1,1-Trichloroethane	µg/L	<0.50	<0.50	NC	NA
1,1,2-Trichloroethane	µg/L	<0.20	<0.50	NC	NA
Trichloroethylene	µg/L	<0.20	<0.20	NC	NA
Vinyl Chloride	µg/L	<0.50	<0.20	NC	NA
Dichlorodifluoromethane	µg/L	<0.20	<0.50	NC	NA
Dioxane, 1,4-	µg/L	<0.50	<0.20	NC	NA
Hexane(n)	µg/L	<0.20	<0.50	NC	NA
Trichlorofluoromethane	µg/L	<0.20	<0.20	NC	NA
1,3-Dichloropropene (cis + trans)	µg/L	<0.50	<0.50	NC	NA

Notes:
RPD - Relative percent difference.
NC - RDP could not be calculated.
NA - Not Available
30% or greater for PHC F1-F4, PAHs, VOCs, and 20% or greater for metals in groundwater
MW17-07 is a duplicate of MW17-02

Table 14d: Quality Assurance/ Quality Control (QA/QC) - Relative Percent Difference

Parameter Description	Units	MW17-02	MW17-07	RPD	Fail/Pass
		18-Feb-17			
Chromium (VI)	µg/L	<0.50	<0.50	NC	NA
Mercury (Hg)	µg/L	<0.1	<0.1	NC	NA
Dissolved Antimony (Sb)	µg/L	0.61	0.80	-6.74	Pass
Dissolved Arsenic (As)	µg/L	<1.0	<1.0	NC	NA
Dissolved Barium (Ba)	µg/L	110	110	0.00	Pass
Dissolved Beryllium (Be)	µg/L	<0.50	<0.50	NC	NA
Dissolved Boron (B)	µg/L	71	69	0.71	Pass
Dissolved Cadmium (Cd)	µg/L	<0.10	<0.10	NC	NA
Dissolved Chromium (Cr)	µg/L	<5.0	<5.0	NC	NA
Dissolved Chloride (Ca)	µg/L	NA	NA	NC	NA
Dissolved Cobalt (Co)	µg/L	0.98	1.1	-2.88	Pass
Dissolved Copper (Cu)	µg/L	4.2	1.9	18.85	Pass
Dissolved Lead (Pb)	µg/L	<0.50	<0.50	NC	NA
Dissolved Molybdenum (Mo)	µg/L	1.8	1.8	0.00	Pass
Dissolved Nickel (Ni)	µg/L	3.5	3.6	-0.70	Pass
Dissolved Selenium (Se)	µg/L	<2.0	<2.0	NC	NA
Dissolved Silver (Ag)	µg/L	<0.10	<0.10	NC	NA
Dissolved Sodium (Na)	µg/L	270,000	260,000	0.94	Pass
Dissolved Thallium (Tl)	µg/L	0.071	0.067	1.45	Pass
Dissolved Uranium (U)	µg/L	2.2	2.3	-1.11	Pass
Dissolved Vanadium (V)	µg/L	<0.50	<0.50	NC	NA
Dissolved Zinc (Zn)	µg/L	8.1	5.2	10.90	Pass

Notes:
RPD - Relative percent difference.
NC - RDP could not be calculated.
NA - Not Available
30% or greater for PHC F1-F4, PAHs, VOCs, and 20% or greater for metals in groundwater
MW17-07 is a duplicate of MW17-02

APPENDIX F
LABORATORY CERTIFICATES OF ANALYSIS

Maxxam
A Bureau Veritas Group Company

Your P.O. #: 45064626
Your Project #: GV-SO-027667
Site#: PHASE TWO ESA
Site Location: 289 CARLING AVE, OTTAWA
Your C.O.C. #: 596990-01-01

Attention:Ginger Rogers

DST Consulting
ON
Canada

Report Date: 2017/02/21
Report #: R4364677
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B729730
Received: 2017/02/13, 13:05

Sample Matrix: Soil
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum	5	N/A	2017/02/17	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	5	2017/02/17	2017/02/17	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	6	N/A	2017/02/17		EPA 8260C m
Free (WAD) Cyanide	6	2017/02/14	2017/02/16	CAM SOP-00457	OMOE E3015 m
Conductivity	5	2017/02/17	2017/02/17	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	6	2017/02/15	2017/02/16	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydro. CCME F1 & BTEX in Soil (2)	1	N/A	2017/02/15	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (3)	6	2017/02/16	2017/02/16	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric)	6	2017/02/18	2017/02/18	CAM SOP-00316	CCME PHC-CWS m
Mercury (TCLP Leachable) (mg/L)	1	N/A	2017/02/17	CAM SOP-00453	EPA 7470A m
Strong Acid Leachable Metals by ICPMS	6	2017/02/16	2017/02/16	CAM SOP-00447	EPA 6020B m
Total Metals in TCLP Leachate by ICPMS	1	2017/02/16	2017/02/16	CAM SOP-00447	EPA 6020B m
Moisture	6	N/A	2017/02/15	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	1	N/A	2017/02/16	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Leachate by GC/MS (SIM)	1	2017/02/16	2017/02/17	CAM SOP-00318	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM)	5	2017/02/15	2017/02/16	CAM SOP-00318	EPA 8270D m
Polychlorinated Biphenyl in Soil	5	2017/02/15	2017/02/16	CAM SOP-00309	EPA 8082A m
pH CaCl2 EXTRACT	7	2017/02/15	2017/02/15	CAM SOP-00413	EPA 9045 D m
Phenols (4AAP)	5	N/A	2017/02/16	CAM SOP-00444	OMOE E3179 m
Sieve, 75um	1	N/A	2017/02/16	CAM SOP-00467	Carter 2nd ed m
Sieve, 75um	1	N/A	2017/02/17	CAM SOP-00467	Carter 2nd ed m
Sodium Adsorption Ratio (SAR)	5	N/A	2017/02/17	CAM SOP-00102	EPA 6010C
TCLP - % Solids	1	2017/02/15	2017/02/16	CAM SOP-00401	EPA 1311 Update I m
TCLP - Extraction Fluid	1	N/A	2017/02/16	CAM SOP-00401	EPA 1311 Update I m
TCLP - Initial and final pH	1	N/A	2017/02/16	CAM SOP-00401	EPA 1311 Update I m
Volatile Organic Compounds and F1 PHCs	5	N/A	2017/02/15	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Soil	1	N/A	2017/02/17	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.

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 P.O. #: 45064626
Your Project #: GV-SO-027667
Site#: PHASE TWO ESA
Site Location: 289 CARLING AVE, OTTAWA
Your C.O.C. #: 596990-01-01

Attention:Ginger Rogers

DST Consulting
ON
Canada

Report Date: 2017/02/21
Report #: R4364677
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B729730
Received: 2017/02/13, 13:05

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) Soils are reported on a dry weight basis unless otherwise specified.
(2) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.
(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.
Madison Bingley, Project Manager
Email: MBingley@maxxam.ca
Phone# (613)274-3549

==========

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 #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		DXD102		DXD104		DXD105		
Sampling Date		2017/02/11 08:30		2017/02/11 15:00		2017/02/12 09:00		
COC Number		596990-01-01		596990-01-01		596990-01-01		
	UNITS	MW17.01 0.03-0.30	RDL	MW17.03 0.03-0.50	RDL	MW17.04 0.03-0.50	RDL	QC Batch
Sodium Adsorption Ratio	N/A	0.78		5.8		13		4861481
Conductivity	mS/cm	0.62	0.002	0.60	0.002	1.2	0.002	4866186
Free Cyanide	ug/g	ND	0.01	0.2	0.2	ND	0.01	4863642
Available (CaCl2) pH	pH	7.60		7.69		8.04		4864203
Chromium (VI)	ug/g	0.6	0.2	ND	0.2	ND	0.2	4864151
Hot Water Ext. Boron (B)	ug/g	0.23	0.050	0.49	0.050	0.14	0.050	4867406
Acid Extractable Antimony (Sb)	ug/g	27	0.20	1.2	0.20	ND	0.20	4866182
Acid Extractable Arsenic (As)	ug/g	17	1.0	16	1.0	3.5	1.0	4866182
Acid Extractable Barium (Ba)	ug/g	910	0.50	190	0.50	59	0.50	4866182
Acid Extractable Beryllium (Be)	ug/g	1.1	0.20	0.80	0.20	0.41	0.20	4866182
Acid Extractable Boron (B)	ug/g	33	5.0	15	5.0	7.9	5.0	4866182
Acid Extractable Cadmium (Cd)	ug/g	0.29	0.10	0.21	0.10	ND	0.10	4866182
Acid Extractable Chromium (Cr)	ug/g	170	1.0	15	1.0	19	1.0	4866182
Acid Extractable Cobalt (Co)	ug/g	8.2	0.10	6.9	0.10	5.4	0.10	4866182
Acid Extractable Copper (Cu)	ug/g	79	0.50	21	0.50	15	0.50	4866182
Acid Extractable Lead (Pb)	ug/g	2700	1.0	89	1.0	12	1.0	4866182
Acid Extractable Molybdenum (Mo)	ug/g	3.6	0.50	3.2	0.50	1.1	0.50	4866182
Acid Extractable Nickel (Ni)	ug/g	24	0.50	20	0.50	13	0.50	4866182
Acid Extractable Selenium (Se)	ug/g	0.95	0.50	0.91	0.50	ND	0.50	4866182
Acid Extractable Silver (Ag)	ug/g	24	0.20	0.49	0.20	ND	0.20	4866182
Acid Extractable Thallium (Tl)	ug/g	0.61	0.050	0.20	0.050	0.12	0.050	4866182
Acid Extractable Uranium (U)	ug/g	0.74	0.050	0.64	0.050	0.53	0.050	4866182
Acid Extractable Vanadium (V)	ug/g	27	5.0	21	5.0	25	5.0	4866182
Acid Extractable Zinc (Zn)	ug/g	1300	5.0	180	5.0	29	5.0	4866182
Acid Extractable Mercury (Hg)	ug/g	0.070	0.050	0.12	0.050	ND	0.050	4866182

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

O.REG 153 METALS & INORGANICS PKG (SOIL)

Maxxam ID		DXD106	DXD107		
Sampling Date		2017/02/12 12:00	2017/02/12 12:30		
COC Number		596990-01-01	596990-01-01		
	UNITS	MW17.05 0.03-0.60	MW17.06 0.03-0.60	RDL	QC Batch
Sodium Adsorption Ratio	N/A	12	4.2		4861481
Conductivity	mS/cm	1.2	1.6	0.002	4866186
Free Cyanide	ug/g	ND	ND	0.01	4863642
Available (CaCl2) pH	pH	7.67	7.64		4864203
Chromium (VI)	ug/g	ND	ND	0.2	4864151
Hot Water Ext. Boron (B)	ug/g	0.19	0.16	0.050	4867406
Acid Extractable Antimony (Sb)	ug/g	0.57	2.5	0.20	4866182
Acid Extractable Arsenic (As)	ug/g	7.5	53	1.0	4866182
Acid Extractable Barium (Ba)	ug/g	96	390	0.50	4866182
Acid Extractable Beryllium (Be)	ug/g	0.49	1.2	0.20	4866182
Acid Extractable Boron (B)	ug/g	6.5	8.9	5.0	4866182
Acid Extractable Cadmium (Cd)	ug/g	0.13	0.25	0.10	4866182
Acid Extractable Chromium (Cr)	ug/g	21	15	1.0	4866182
Acid Extractable Cobalt (Co)	ug/g	7.1	9.2	0.10	4866182
Acid Extractable Copper (Cu)	ug/g	25	47	0.50	4866182
Acid Extractable Lead (Pb)	ug/g	630	300	1.0	4866182
Acid Extractable Molybdenum (Mo)	ug/g	1.7	10	0.50	4866182
Acid Extractable Nickel (Ni)	ug/g	18	24	0.50	4866182
Acid Extractable Selenium (Se)	ug/g	ND	2.2	0.50	4866182
Acid Extractable Silver (Ag)	ug/g	ND	ND	0.20	4866182
Acid Extractable Thallium (Tl)	ug/g	0.26	0.41	0.050	4866182
Acid Extractable Uranium (U)	ug/g	0.48	1.0	0.050	4866182
Acid Extractable Vanadium (V)	ug/g	37	25	5.0	4866182
Acid Extractable Zinc (Zn)	ug/g	70	130	5.0	4866182
Acid Extractable Mercury (Hg)	ug/g	0.10	0.79	0.050	4866182

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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

Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

O.REG 153 PAHS (SOIL)

Maxxam ID		DXD102	DXD104	DXD105	DXD106		
Sampling Date		2017/02/11 08:30	2017/02/11 15:00	2017/02/12 09:00	2017/02/12 12:00		
COC Number		596990-01-01	596990-01-01	596990-01-01	596990-01-01		
	UNITS	MW17.01 0.03-0.30	MW17.03 0.03-0.50	MW17.04 0.03-0.50	MW17.05 0.03-0.60	RDL	QC Batch
Moisture	%	23	15	6.0	19	1.0	4864652
Methylnaphthalene, 2-(1-)	ug/g	0.49	ND	ND	0.25	0.071	4861632
Acenaphthene	ug/g	0.066	ND	ND	ND	0.050	4864148
Acenaphthylene	ug/g	0.24	ND	ND	0.49	0.050	4864148
Anthracene	ug/g	0.51	0.075	ND	0.25	0.050	4864148
Benzo(a)anthracene	ug/g	2.1	0.29	ND	1.5	0.050	4864148
Benzo(a)pyrene	ug/g	1.5	0.32	ND	2.0	0.050	4864148
Benzo(b/j)fluoranthene	ug/g	1.9	0.42	0.051	2.4	0.050	4864148
Benzo(g,h,i)perylene	ug/g	0.62	0.26	ND	1.5	0.050	4864148
Benzo(k)fluoranthene	ug/g	0.75	0.16	ND	0.89	0.050	4864148
Chrysene	ug/g	1.6	0.26	ND	1.3	0.050	4864148
Dibenz(a,h)anthracene	ug/g	0.23	0.056	ND	0.31	0.050	4864148
Fluoranthene	ug/g	4.1	0.56	0.073	1.5	0.050	4864148
Fluorene	ug/g	0.074	ND	ND	ND	0.050	4864148
Indeno(1,2,3-cd)pyrene	ug/g	0.79	0.26	ND	1.6	0.050	4864148
1-Methylnaphthalene	ug/g	0.24	ND	ND	0.12	0.050	4864148
2-Methylnaphthalene	ug/g	0.25	0.052	ND	0.14	0.050	4864148
Naphthalene	ug/g	0.16	ND	ND	0.11	0.050	4864148
Phenanthrene	ug/g	1.3	0.33	ND	0.31	0.050	4864148
Pyrene	ug/g	3.2	0.47	0.069	1.5	0.050	4864148
Surrogate Recovery (%)							
D10-Anthracene	%	94	108	118	109		4864148
D14-Terphenyl (FS)	%	93	97	101	103		4864148
D8-Acenaphthylene	%	85	93	97	98		4864148

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

O.REG 153 PAHS (SOIL)

Maxxam ID		DXD107		
Sampling Date		2017/02/12 12:30		
COC Number		596990-01-01		
	UNITS	MW17.06 0.03-0.60	RDL	QC Batch
Moisture	%	17	1.0	4864652
Methylnaphthalene, 2-(1-)	ug/g	2.0	0.0071	4861632
Acenaphthene	ug/g	0.018	0.0050	4864148
Acenaphthylene	ug/g	0.055	0.0050	4864148
Anthracene	ug/g	0.083	0.0050	4864148
Benzo(a)anthracene	ug/g	0.45	0.0050	4864148
Benzo(a)pyrene	ug/g	0.38	0.0050	4864148
Benzo(b/j)fluoranthene	ug/g	0.54	0.0050	4864148
Benzo(g,h,i)perylene	ug/g	0.21	0.0050	4864148
Benzo(k)fluoranthene	ug/g	0.20	0.0050	4864148
Chrysene	ug/g	0.40	0.0050	4864148
Dibenz(a,h)anthracene	ug/g	0.067	0.0050	4864148
Fluoranthene	ug/g	0.81	0.0050	4864148
Fluorene	ug/g	0.023	0.0050	4864148
Indeno(1,2,3-cd)pyrene	ug/g	0.24	0.0050	4864148
1-Methylnaphthalene	ug/g	0.86	0.0050	4864148
2-Methylnaphthalene	ug/g	1.1	0.0050	4864148
Naphthalene	ug/g	0.79	0.0050	4864148
Phenanthrene	ug/g	0.70	0.0050	4864148
Pyrene	ug/g	0.70	0.0050	4864148
Surrogate Recovery (%)				
D10-Anthracene	%	80		4864148
D14-Terphenyl (FS)	%	84		4864148
D8-Acenaphthylene	%	82		4864148

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

O.REG 153 PCBS (SOIL)

Maxxam ID		DXD102	DXD104	DXD105	DXD106		
Sampling Date		2017/02/11 08:30	2017/02/11 15:00	2017/02/12 09:00	2017/02/12 12:00		
COC Number		596990-01-01	596990-01-01	596990-01-01	596990-01-01		
	UNITS	MW17.01 0.03-0.30	MW17.03 0.03-0.50	MW17.04 0.03-0.50	MW17.05 0.03-0.60	RDL	QC Batch
Aroclor 1242	ug/g	ND	ND	ND	ND	0.010	4865088
Aroclor 1248	ug/g	ND	ND	ND	ND	0.010	4865088
Aroclor 1254	ug/g	ND	ND	ND	ND	0.010	4865088
Aroclor 1260	ug/g	ND	ND	ND	ND	0.010	4865088
Total PCB	ug/g	ND	ND	ND	ND	0.010	4865088
Surrogate Recovery (%)							
Decachlorobiphenyl	%	86	72	77	71		4865088

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

Maxxam ID		DXD107		
Sampling Date		2017/02/12 12:30		
COC Number		596990-01-01		
	UNITS	MW17.06 0.03-0.60	RDL	QC Batch
Aroclor 1242	ug/g	ND	0.010	4865088
Aroclor 1248	ug/g	ND	0.010	4865088
Aroclor 1254	ug/g	ND	0.010	4865088
Aroclor 1260	ug/g	ND	0.010	4865088
Total PCB	ug/g	ND	0.010	4865088
Surrogate Recovery (%)				
Decachlorobiphenyl	%	77		4865088

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

O.REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		DXD109		
Sampling Date		2017/02/12 13:00		
COC Number		596990-01-01		
	UNITS	TCLP COMP	RDL	QC Batch
Moisture	%	11	1.0	4866176
Benzene	ug/g	0.10	0.020	4864874
Toluene	ug/g	0.31	0.020	4864874
Ethylbenzene	ug/g	0.068	0.020	4864874
o-Xylene	ug/g	0.18	0.020	4864874
p+m-Xylene	ug/g	0.28	0.040	4864874
Total Xylenes	ug/g	0.46	0.040	4864874
F1 (C6-C10)	ug/g	ND	10	4864874
F1 (C6-C10) - BTEX	ug/g	ND	10	4864874
F2 (C10-C16 Hydrocarbons)	ug/g	11	10	4866207
F3 (C16-C34 Hydrocarbons)	ug/g	330	50	4866207
F4 (C34-C50 Hydrocarbons)	ug/g	940	50	4866207
Reached Baseline at C50	ug/g	No		4866207
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	97		4864874
4-Bromofluorobenzene	%	96		4864874
D10-Ethylbenzene	%	98		4864874
D4-1,2-Dichloroethane	%	88		4864874
o-Terphenyl	%	91		4866207

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Sampler Initials: GR

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

Maxxam ID		DXD102	DXD104	DXD105	DXD106		
Sampling Date		2017/02/11 08:30	2017/02/11 15:00	2017/02/12 09:00	2017/02/12 12:00		
COC Number		596990-01-01	596990-01-01	596990-01-01	596990-01-01		
	UNITS	MW17.01 0.03-0.30	MW17.03 0.03-0.50	MW17.04 0.03-0.50	MW17.05 0.03-0.60	RDL	QC Batch
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	ND	ND	0.050	4861962
Acetone (2-Propanone)	ug/g	ND	ND	ND	ND	0.50	4864457
Benzene	ug/g	0.49	0.031	ND	0.040	0.020	4864457
Bromodichloromethane	ug/g	ND	ND	ND	ND	0.050	4864457
Bromoform	ug/g	ND	ND	ND	ND	0.050	4864457
Bromomethane	ug/g	ND	ND	ND	ND	0.050	4864457
Carbon Tetrachloride	ug/g	ND	ND	ND	ND	0.050	4864457
Chlorobenzene	ug/g	ND	ND	ND	ND	0.050	4864457
Chloroform	ug/g	ND	ND	ND	ND	0.050	4864457
Dibromochloromethane	ug/g	ND	ND	ND	ND	0.050	4864457
1,2-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	4864457
1,3-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	4864457
1,4-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	4864457
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	ND	0.050	4864457
1,1-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	4864457
1,2-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	4864457
1,1-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	4864457
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	4864457
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	4864457
1,2-Dichloropropane	ug/g	ND	ND	ND	ND	0.050	4864457
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.030	4864457
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.040	4864457
Ethylbenzene	ug/g	0.30	0.028	ND	0.020	0.020	4864457
Ethylene Dibromide	ug/g	ND	ND	ND	ND	0.050	4864457
Hexane	ug/g	0.29	0.079	ND	0.053	0.050	4864457
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	ND	0.050	4864457
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	ND	0.50	4864457
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	ND	0.50	4864457
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	ND	0.050	4864457
Styrene	ug/g	ND	ND	ND	ND	0.050	4864457
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	4864457
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	4864457
Tetrachloroethylene	ug/g	ND	ND	ND	ND	0.050	4864457

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

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

Maxxam ID		DXD102	DXD104	DXD105	DXD106		
Sampling Date		2017/02/11 08:30	2017/02/11 15:00	2017/02/12 09:00	2017/02/12 12:00		
COC Number		596990-01-01	596990-01-01	596990-01-01	596990-01-01		
	UNITS	MW17.01 0.03-0.30	MW17.03 0.03-0.50	MW17.04 0.03-0.50	MW17.05 0.03-0.60	RDL	QC Batch
Toluene	ug/g	1.5	0.15	ND	0.11	0.020	4864457
1,1,1-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	4864457
1,1,2-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	4864457
Trichloroethylene	ug/g	ND	ND	ND	ND	0.050	4864457
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	ND	0.050	4864457
Vinyl Chloride	ug/g	ND	ND	ND	ND	0.020	4864457
p+m-Xylene	ug/g	1.3	0.15	ND	0.085	0.020	4864457
o-Xylene	ug/g	0.81	0.11	ND	0.071	0.020	4864457
Total Xylenes	ug/g	2.1	0.26	ND	0.16	0.020	4864457
F1 (C6-C10)	ug/g	21	ND	ND	ND	10	4864457
F1 (C6-C10) - BTEX	ug/g	16	ND	ND	ND	10	4864457
F2 (C10-C16 Hydrocarbons)	ug/g	25	16	ND	ND	10	4866207
F3 (C16-C34 Hydrocarbons)	ug/g	96	200	59	150	50	4866207
F4 (C34-C50 Hydrocarbons)	ug/g	59	1000	240	490	50	4866207
Reached Baseline at C50	ug/g	No	No	No	No		4866207
Surrogate Recovery (%)							
o-Terphenyl	%	94	90	89	90		4866207
4-Bromofluorobenzene	%	103	102	100	101		4864457
D10-o-Xylene	%	103	103	95	102		4864457
D4-1,2-Dichloroethane	%	96	97	100	99		4864457
D8-Toluene	%	92	91	90	90		4864457

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

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

Maxxam ID		DXD107		
Sampling Date		2017/02/12 12:30		
COC Number		596990-01-01		
	UNITS	MW17.06 0.03-0.60	RDL	QC Batch
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.050	4861962
Acetone (2-Propanone)	ug/g	ND	0.50	4864457
Benzene	ug/g	0.065	0.020	4864457
Bromodichloromethane	ug/g	ND	0.050	4864457
Bromoform	ug/g	ND	0.050	4864457
Bromomethane	ug/g	ND	0.050	4864457
Carbon Tetrachloride	ug/g	ND	0.050	4864457
Chlorobenzene	ug/g	ND	0.050	4864457
Chloroform	ug/g	ND	0.050	4864457
Dibromochloromethane	ug/g	ND	0.050	4864457
1,2-Dichlorobenzene	ug/g	ND	0.050	4864457
1,3-Dichlorobenzene	ug/g	ND	0.050	4864457
1,4-Dichlorobenzene	ug/g	ND	0.050	4864457
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	4864457
1,1-Dichloroethane	ug/g	ND	0.050	4864457
1,2-Dichloroethane	ug/g	ND	0.050	4864457
1,1-Dichloroethylene	ug/g	ND	0.050	4864457
cis-1,2-Dichloroethylene	ug/g	ND	0.050	4864457
trans-1,2-Dichloroethylene	ug/g	ND	0.050	4864457
1,2-Dichloropropane	ug/g	ND	0.050	4864457
cis-1,3-Dichloropropene	ug/g	ND	0.030	4864457
trans-1,3-Dichloropropene	ug/g	ND	0.040	4864457
Ethylbenzene	ug/g	0.055	0.020	4864457
Ethylene Dibromide	ug/g	ND	0.050	4864457
Hexane	ug/g	0.069	0.050	4864457
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	4864457
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	4864457
Methyl Isobutyl Ketone	ug/g	ND	0.50	4864457
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	4864457
Styrene	ug/g	ND	0.050	4864457
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	4864457
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	4864457
Tetrachloroethylene	ug/g	ND	0.050	4864457

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
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Your P.O. #: 45064626
Sampler Initials: GR

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

Maxxam ID		DXD107		
Sampling Date		2017/02/12 12:30		
COC Number		596990-01-01		
	UNITS	MW17.06 0.03-0.60	RDL	QC Batch
Toluene	ug/g	0.20	0.020	4864457
1,1,1-Trichloroethane	ug/g	ND	0.050	4864457
1,1,2-Trichloroethane	ug/g	ND	0.050	4864457
Trichloroethylene	ug/g	ND	0.050	4864457
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	4864457
Vinyl Chloride	ug/g	ND	0.020	4864457
p+m-Xylene	ug/g	0.22	0.020	4864457
o-Xylene	ug/g	0.18	0.020	4864457
Total Xylenes	ug/g	0.40	0.020	4864457
F1 (C6-C10)	ug/g	ND	10	4864457
F1 (C6-C10) - BTEX	ug/g	ND	10	4864457
F2 (C10-C16 Hydrocarbons)	ug/g	27	10	4866207
F3 (C16-C34 Hydrocarbons)	ug/g	290	50	4866207
F4 (C34-C50 Hydrocarbons)	ug/g	420	50	4866207
Reached Baseline at C50	ug/g	No		4866207
Surrogate Recovery (%)				
o-Terphenyl	%	89		4866207
4-Bromofluorobenzene	%	100		4864457
D10-o-Xylene	%	96		4864457
D4-1,2-Dichloroethane	%	99		4864457
D8-Toluene	%	91		4864457

RDL = Reportable Detection Limit
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ND = Not detected

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Your P.O. #: 45064626
Sampler Initials: GR

O.REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		DXD108		
Sampling Date		2017/02/12		
COC Number		596990-01-01		
	UNITS	DUP#1	RDL	QC Batch
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.050	4861962
Acetone (2-Propanone)	ug/g	ND	0.50	4865758
Benzene	ug/g	0.037	0.020	4865758
Bromodichloromethane	ug/g	ND	0.050	4865758
Bromoform	ug/g	ND	0.050	4865758
Bromomethane	ug/g	ND	0.050	4865758
Carbon Tetrachloride	ug/g	ND	0.050	4865758
Chlorobenzene	ug/g	ND	0.050	4865758
Chloroform	ug/g	ND	0.050	4865758
Dibromochloromethane	ug/g	ND	0.050	4865758
1,2-Dichlorobenzene	ug/g	ND	0.050	4865758
1,3-Dichlorobenzene	ug/g	ND	0.050	4865758
1,4-Dichlorobenzene	ug/g	ND	0.050	4865758
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	4865758
1,1-Dichloroethane	ug/g	ND	0.050	4865758
1,2-Dichloroethane	ug/g	ND	0.050	4865758
1,1-Dichloroethylene	ug/g	ND	0.050	4865758
cis-1,2-Dichloroethylene	ug/g	ND	0.050	4865758
trans-1,2-Dichloroethylene	ug/g	ND	0.050	4865758
1,2-Dichloropropane	ug/g	ND	0.050	4865758
cis-1,3-Dichloropropene	ug/g	ND	0.030	4865758
trans-1,3-Dichloropropene	ug/g	ND	0.040	4865758
Ethylbenzene	ug/g	0.023	0.020	4865758
Ethylene Dibromide	ug/g	ND	0.050	4865758
Hexane	ug/g	0.060	0.050	4865758
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	4865758
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	4865758
Methyl Isobutyl Ketone	ug/g	ND	0.50	4865758
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	4865758
Styrene	ug/g	ND	0.050	4865758
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	4865758
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	4865758
Tetrachloroethylene	ug/g	ND	0.050	4865758
Toluene	ug/g	0.10	0.020	4865758

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

Maxxam Job #: B729730
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DST Consulting
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Sampler Initials: GR

O.REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		DXD108		
Sampling Date		2017/02/12		
COC Number		596990-01-01		
	UNITS	**DUP#1**	**RDL**	**QC Batch**
1,1,1-Trichloroethane	ug/g	ND	0.050	4865758
1,1,2-Trichloroethane	ug/g	ND	0.050	4865758
Trichloroethylene	ug/g	ND	0.050	4865758
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	4865758
Vinyl Chloride	ug/g	ND	0.020	4865758
p+m-Xylene	ug/g	0.090	0.020	4865758
o-Xylene	ug/g	0.077	0.020	4865758
Total Xylenes	ug/g	0.17	0.020	4865758
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	101		4865758
D10-o-Xylene	%	116		4865758
D4-1,2-Dichloroethane	%	95		4865758
D8-Toluene	%	98		4865758

RDL = Reportable Detection Limit
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ND = Not detected

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Maxxam Job #: B729730
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DST Consulting
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Sampler Initials: GR

O.REG 558 TCLP BENZO(A)PYRENE

Maxxam ID		DXD109		
Sampling Date		2017/02/12 13:00		
COC Number		596990-01-01		
	UNITS	**TCLP COMP**	**RDL**	**QC Batch**
Leachable Benzo(a)pyrene	ug/L	ND	0.10	4866790
Surrogate Recovery (%)				
Leachable D10-Anthracene	%	103		4866790
Leachable D14-Terphenyl (FS)	%	82		4866790
Leachable D8-Acenaphthylene	%	107		4866790

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Sampler Initials: GR

O.REG 558 TCLP LEACHATE PREPARATION (SOIL)

Maxxam ID		DXD109		
Sampling Date		2017/02/12 13:00		
COC Number		596990-01-01		
	UNITS	**TCLP COMP**	**RDL**	**QC Batch**
Final pH	pH	6.35		4865245
Initial pH	pH	9.51		4865245
TCLP - % Solids	%	100	0.2	4865238
TCLP Extraction Fluid	N/A	FLUID 1		4865244

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Sampler Initials: GR

O.REG 558 TCLP METALS (SOIL)

Maxxam ID		DXD109		
Sampling Date		2017/02/12 13:00		
COC Number		596990-01-01		
	UNITS	TCLP COMP	RDL	QC Batch
Leachable Mercury (Hg)	mg/L	ND	0.0010	4866030
Leachable Arsenic (As)	mg/L	ND	0.2	4866051
Leachable Barium (Ba)	mg/L	1.0	0.2	4866051
Leachable Boron (B)	mg/L	ND	0.1	4866051
Leachable Cadmium (Cd)	mg/L	ND	0.05	4866051
Leachable Chromium (Cr)	mg/L	ND	0.1	4866051
Leachable Lead (Pb)	mg/L	ND	0.1	4866051
Leachable Selenium (Se)	mg/L	ND	0.1	4866051
Leachable Silver (Ag)	mg/L	ND	0.01	4866051
Leachable Uranium (U)	mg/L	ND	0.01	4866051

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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RESULTS OF ANALYSES OF SOIL

Maxxam ID		DXD102	DXD103	DXD104	DXD105		
Sampling Date		2017/02/11 08:30	2017/02/11 12:00	2017/02/11 15:00	2017/02/12 09:00		
COC Number		596990-01-01	596990-01-01	596990-01-01	596990-01-01		
	UNITS	MW17.01 0.03-0.30	MW17-02 0.03-0.10	MW17.03 0.03-0.50	MW17.04 0.03-0.50	RDL	QC Batch
Free Cyanide	ug/g		ND			0.01	4863642
Moisture	%		17			1.0	4864652
Available (CaCl2) pH	pH		9.99				4864203
Phenols-4AAP	ug/g	ND		ND	ND	0.04	4864525
Grain Size	%	COARSE				N/A	4865062
Sieve - #200 (<0.075mm)	%	28				1	4865062
Sieve - #200 (>0.075mm)	%	72				1	4865062

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

Maxxam ID		DXD106		DXD107		DXD109	
Sampling Date		2017/02/12 12:00		2017/02/12 12:30		2017/02/12 13:00	
COC Number		596990-01-01		596990-01-01		596990-01-01	
	UNITS	MW17.05 0.03-0.60	QC Batch	MW17.06 0.03-0.60	RDL	TCLP COMP	QC Batch
Available (CaCl2) pH	pH		4864203			7.94	4864203
Phenols-4AAP	ug/g	ND	4864525	ND	0.04		4864525
Grain Size	%		4865062	COARSE	N/A		4866767
Sieve - #200 (<0.075mm)	%		4865062	36	1		4866767
Sieve - #200 (>0.075mm)	%		4865062	64	1		4866767

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

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		DXD103		
Sampling Date		2017/02/11 12:00		
COC Number		596990-01-01		
	UNITS	**MW17-02 0.03-0.10**	**RDL**	**QC Batch**
Chromium (VI)	ug/g	ND	0.2	4864151
Acid Extractable Antimony (Sb)	ug/g	2.3	0.20	4866182
Acid Extractable Arsenic (As)	ug/g	32	1.0	4866182
Acid Extractable Barium (Ba)	ug/g	600	0.50	4866182
Acid Extractable Beryllium (Be)	ug/g	1.7	0.20	4866182
Acid Extractable Boron (B)	ug/g	9.3	5.0	4866182
Acid Extractable Cadmium (Cd)	ug/g	0.30	0.10	4866182
Acid Extractable Chromium (Cr)	ug/g	16	1.0	4866182
Acid Extractable Cobalt (Co)	ug/g	11	0.10	4866182
Acid Extractable Copper (Cu)	ug/g	44	0.50	4866182
Acid Extractable Lead (Pb)	ug/g	440	1.0	4866182
Acid Extractable Molybdenum (Mo)	ug/g	11	0.50	4866182
Acid Extractable Nickel (Ni)	ug/g	25	0.50	4866182
Acid Extractable Selenium (Se)	ug/g	0.91	0.50	4866182
Acid Extractable Silver (Ag)	ug/g	ND	0.20	4866182
Acid Extractable Thallium (Tl)	ug/g	0.32	0.050	4866182
Acid Extractable Uranium (U)	ug/g	0.64	0.050	4866182
Acid Extractable Vanadium (V)	ug/g	31	5.0	4866182
Acid Extractable Zinc (Zn)	ug/g	160	5.0	4866182
Acid Extractable Mercury (Hg)	ug/g	0.056	0.050	4866182

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B729730
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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		DXD102	DXD104	DXD105	DXD106		
Sampling Date		2017/02/11 08:30	2017/02/11 15:00	2017/02/12 09:00	2017/02/12 12:00		
COC Number		596990-01-01	596990-01-01	596990-01-01	596990-01-01		
	UNITS	MW17.01 0.03-0.30	MW17.03 0.03-0.50	MW17.04 0.03-0.50	MW17.05 0.03-0.60	RDL	QC Batch
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	170	5100	1200	2300	100	4868969

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		DXD107	DXD109		
Sampling Date		2017/02/12 12:30	2017/02/12 13:00		
COC Number		596990-01-01	596990-01-01		
	UNITS	MW17.06 0.03-0.60	TCLP COMP	RDL	QC Batch
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	1200	3900	100	4868969

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
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Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

GENERAL COMMENTS

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

Package 1	1.7°C

Sample DXD102 [MW17.01 0.03-0.30] : PAH Analysis: Due to the sample matrix, samples required dilution. Detection limits were adjusted accordingly.

Sample DXD104 [MW17.03 0.03-0.50] : PAH Analysis: Due to the sample matrix, samples required dilution. Detection limits were adjusted accordingly.

Sample DXD105 [MW17.04 0.03-0.50] : PAH Analysis: Due to the sample matrix, samples required dilution. Detection limits were adjusted accordingly.

Sample DXD106 [MW17.05 0.03-0.60] : PAH Analysis: Due to the sample matrix, samples required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4863642	XQI	Matrix Spike	Free Cyanide	2017/02/16		105	%	75 - 125
4863642	XQI	Spiked Blank	Free Cyanide	2017/02/16		99	%	80 - 120
4863642	XQI	Method Blank	Free Cyanide	2017/02/16	ND, RDL=0.01		ug/g	
4863642	XQI	RPD	Free Cyanide	2017/02/16	NC		%	35
4864148	RAJ	Matrix Spike	D10-Anthracene	2017/02/15		112	%	50 - 130
			D14-Terphenyl (FS)	2017/02/15		88	%	50 - 130
			D8-Acenaphthylene	2017/02/15		97	%	50 - 130
			Acenaphthene	2017/02/15		114	%	50 - 130
			Acenaphthylene	2017/02/15		117	%	50 - 130
			Anthracene	2017/02/15		82	%	50 - 130
			Benzo(a)anthracene	2017/02/15		109	%	50 - 130
			Benzo(a)pyrene	2017/02/15		83	%	50 - 130
			Benzo(b/j)fluoranthene	2017/02/15		96	%	50 - 130
			Benzo(g,h,i)perylene	2017/02/15		114	%	50 - 130
			Benzo(k)fluoranthene	2017/02/15		89	%	50 - 130
			Chrysene	2017/02/15		100	%	50 - 130
			Dibenz(a,h)anthracene	2017/02/15		108	%	50 - 130
			Fluoranthene	2017/02/15		91	%	50 - 130
			Fluorene	2017/02/15		130 (1)	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2017/02/15		106	%	50 - 130
			1-Methylnaphthalene	2017/02/15		134 (1)	%	50 - 130
			2-Methylnaphthalene	2017/02/15		152 (1)	%	50 - 130
			Naphthalene	2017/02/15		137 (1)	%	50 - 130
			Phenanthrene	2017/02/15		76	%	50 - 130
			Pyrene	2017/02/15		100	%	50 - 130
4864148	RAJ	Spiked Blank	D10-Anthracene	2017/02/15		96	%	50 - 130
			D14-Terphenyl (FS)	2017/02/15		80	%	50 - 130
			D8-Acenaphthylene	2017/02/15		94	%	50 - 130
			Acenaphthene	2017/02/15		101	%	50 - 130
			Acenaphthylene	2017/02/15		102	%	50 - 130
			Anthracene	2017/02/15		90	%	50 - 130
			Benzo(a)anthracene	2017/02/15		112	%	50 - 130
			Benzo(a)pyrene	2017/02/15		103	%	50 - 130
			Benzo(b/j)fluoranthene	2017/02/15		102	%	50 - 130
			Benzo(g,h,i)perylene	2017/02/15		110	%	50 - 130
			Benzo(k)fluoranthene	2017/02/15		111	%	50 - 130
			Chrysene	2017/02/15		107	%	50 - 130
			Dibenz(a,h)anthracene	2017/02/15		106	%	50 - 130
			Fluoranthene	2017/02/15		104	%	50 - 130
			Fluorene	2017/02/15		107	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2017/02/15		113	%	50 - 130
			1-Methylnaphthalene	2017/02/15		98	%	50 - 130
			2-Methylnaphthalene	2017/02/15		91	%	50 - 130
			Naphthalene	2017/02/15		92	%	50 - 130
			Phenanthrene	2017/02/15		104	%	50 - 130
			Pyrene	2017/02/15		106	%	50 - 130
4864148	RAJ	Method Blank	D10-Anthracene	2017/02/15		86	%	50 - 130
			D14-Terphenyl (FS)	2017/02/15		82	%	50 - 130
			D8-Acenaphthylene	2017/02/15		80	%	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
			Acenaphthene	2017/02/15	ND, RDL=0.0050		ug/g	
			Acenaphthylene	2017/02/15	ND, RDL=0.0050		ug/g	
			Anthracene	2017/02/15	ND, RDL=0.0050		ug/g	
			Benzo(a)anthracene	2017/02/15	ND, RDL=0.0050		ug/g	
			Benzo(a)pyrene	2017/02/15	ND, RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2017/02/15	ND, RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2017/02/15	ND, RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2017/02/15	ND, RDL=0.0050		ug/g	
			Chrysene	2017/02/15	ND, RDL=0.0050		ug/g	
			Dibenz(a,h)anthracene	2017/02/15	ND, RDL=0.0050		ug/g	
			Fluoranthene	2017/02/15	ND, RDL=0.0050		ug/g	
			Fluorene	2017/02/15	ND, RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2017/02/15	ND, RDL=0.0050		ug/g	
			1-Methylnaphthalene	2017/02/15	ND, RDL=0.0050		ug/g	
			2-Methylnaphthalene	2017/02/15	ND, RDL=0.0050		ug/g	
			Naphthalene	2017/02/15	ND, RDL=0.0050		ug/g	
			Phenanthrene	2017/02/15	ND, RDL=0.0050		ug/g	
			Pyrene	2017/02/15	ND, RDL=0.0050		ug/g	
4864148	RAJ	RPD	Acenaphthene	2017/02/16	NC		%	40
			Acenaphthylene	2017/02/16	NC		%	40
			Anthracene	2017/02/16	NC		%	40
			Benzo(a)anthracene	2017/02/16	14		%	40
			Benzo(a)pyrene	2017/02/16	14		%	40
			Benzo(b/j)fluoranthene	2017/02/16	11		%	40
			Benzo(g,h,i)perylene	2017/02/16	12		%	40
			Benzo(k)fluoranthene	2017/02/16	NC		%	40
			Chrysene	2017/02/16	13		%	40
			Dibenz(a,h)anthracene	2017/02/16	NC		%	40
			Fluoranthene	2017/02/16	15		%	40
			Fluorene	2017/02/16	NC		%	40
			Indeno(1,2,3-cd)pyrene	2017/02/16	12		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1-Methylnaphthalene	2017/02/16	NC		%	40
			2-Methylnaphthalene	2017/02/16	NC		%	40
			Naphthalene	2017/02/16	NC		%	40
			Phenanthrene	2017/02/16	9.7		%	40
			Pyrene	2017/02/16	15		%	40
4864151	SAC	Matrix Spike	Chromium (VI)	2017/02/16		78	%	75 - 125
4864151	SAC	Spiked Blank	Chromium (VI)	2017/02/16		96	%	80 - 120
4864151	SAC	Method Blank	Chromium (VI)	2017/02/16	ND, RDL=0.2		ug/g	
4864151	SAC	RPD	Chromium (VI)	2017/02/16	NC		%	35
4864203	NYS	Spiked Blank	Available (CaCl2) pH	2017/02/15		99	%	97 - 103
4864203	NYS	RPD	Available (CaCl2) pH	2017/02/15	0.36		%	N/A
4864457	YY	Matrix Spike	4-Bromofluorobenzene	2017/02/15		109	%	60 - 140
			D10-o-Xylene	2017/02/15		116	%	60 - 130
			D4-1,2-Dichloroethane	2017/02/15		94	%	60 - 140
			D8-Toluene	2017/02/15		100	%	60 - 140
			Acetone (2-Propanone)	2017/02/15		82	%	60 - 140
			Benzene	2017/02/15		96	%	60 - 140
			Bromodichloromethane	2017/02/15		96	%	60 - 140
			Bromoform	2017/02/15		100	%	60 - 140
			Bromomethane	2017/02/15		108	%	60 - 140
			Carbon Tetrachloride	2017/02/15		106	%	60 - 140
			Chlorobenzene	2017/02/15		99	%	60 - 140
			Chloroform	2017/02/15		96	%	60 - 140
			Dibromochloromethane	2017/02/15		102	%	60 - 140
			1,2-Dichlorobenzene	2017/02/15		94	%	60 - 140
			1,3-Dichlorobenzene	2017/02/15		94	%	60 - 140
			1,4-Dichlorobenzene	2017/02/15		95	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2017/02/15		102	%	60 - 140
			1,1-Dichloroethane	2017/02/15		93	%	60 - 140
			1,2-Dichloroethane	2017/02/15		87	%	60 - 140
			1,1-Dichloroethylene	2017/02/15		97	%	60 - 140
			cis-1,2-Dichloroethylene	2017/02/15		104	%	60 - 140
			trans-1,2-Dichloroethylene	2017/02/15		100	%	60 - 140
			1,2-Dichloropropane	2017/02/15		91	%	60 - 140
			cis-1,3-Dichloropropene	2017/02/15		93	%	60 - 140
			trans-1,3-Dichloropropene	2017/02/15		93	%	60 - 140
			Ethylbenzene	2017/02/15		93	%	60 - 140
			Ethylene Dibromide	2017/02/15		94	%	60 - 140
			Hexane	2017/02/15		103	%	60 - 140
			Methylene Chloride(Dichloromethane)	2017/02/15		103	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2017/02/15		85	%	60 - 140
			Methyl Isobutyl Ketone	2017/02/15		85	%	60 - 140
			Methyl t-butyl ether (MTBE)	2017/02/15		91	%	60 - 140
			Styrene	2017/02/15		97	%	60 - 140
			1,1,1,2-Tetrachloroethane	2017/02/15		101	%	60 - 140
			1,1,2,2-Tetrachloroethane	2017/02/15		89	%	60 - 140
			Tetrachloroethylene	2017/02/15		107	%	60 - 140
			Toluene	2017/02/15		94	%	60 - 140
			1,1,1-Trichloroethane	2017/02/15		100	%	60 - 140
			1,1,2-Trichloroethane	2017/02/15		87	%	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
			Trichloroethylene	2017/02/15		106	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2017/02/15		109	%	60 - 140
			Vinyl Chloride	2017/02/15		107	%	60 - 140
			p+m-Xylene	2017/02/15		91	%	60 - 140
			o-Xylene	2017/02/15		92	%	60 - 140
			F1 (C6-C10)	2017/02/15		99	%	60 - 140
4864457	YY	Spiked Blank	4-Bromofluorobenzene	2017/02/15		108	%	60 - 140
			D10-o-Xylene	2017/02/15		104	%	60 - 130
			D4-1,2-Dichloroethane	2017/02/15		98	%	60 - 140
			D8-Toluene	2017/02/15		100	%	60 - 140
			Acetone (2-Propanone)	2017/02/15		88	%	60 - 140
			Benzene	2017/02/15		95	%	60 - 130
			Bromodichloromethane	2017/02/15		98	%	60 - 130
			Bromoform	2017/02/15		106	%	60 - 130
			Bromomethane	2017/02/15		106	%	60 - 140
			Carbon Tetrachloride	2017/02/15		103	%	60 - 130
			Chlorobenzene	2017/02/15		97	%	60 - 130
			Chloroform	2017/02/15		95	%	60 - 130
			Dibromochloromethane	2017/02/15		105	%	60 - 130
			1,2-Dichlorobenzene	2017/02/15		94	%	60 - 130
			1,3-Dichlorobenzene	2017/02/15		92	%	60 - 130
			1,4-Dichlorobenzene	2017/02/15		93	%	60 - 130
			Dichlorodifluoromethane (FREON 12)	2017/02/15		100	%	60 - 140
			1,1-Dichloroethane	2017/02/15		92	%	60 - 130
			1,2-Dichloroethane	2017/02/15		90	%	60 - 130
			1,1-Dichloroethylene	2017/02/15		93	%	60 - 130
			cis-1,2-Dichloroethylene	2017/02/15		103	%	60 - 130
			trans-1,2-Dichloroethylene	2017/02/15		98	%	60 - 130
			1,2-Dichloropropane	2017/02/15		90	%	60 - 130
			cis-1,3-Dichloropropene	2017/02/15		92	%	60 - 130
			trans-1,3-Dichloropropene	2017/02/15		92	%	60 - 130
			Ethylbenzene	2017/02/15		88	%	60 - 130
			Ethylene Dibromide	2017/02/15		97	%	60 - 130
			Hexane	2017/02/15		96	%	60 - 130
			Methylene Chloride(Dichloromethane)	2017/02/15		104	%	60 - 130
			Methyl Ethyl Ketone (2-Butanone)	2017/02/15		92	%	60 - 140
			Methyl Isobutyl Ketone	2017/02/15		92	%	60 - 130
			Methyl t-butyl ether (MTBE)	2017/02/15		91	%	60 - 130
			Styrene	2017/02/15		95	%	60 - 130
			1,1,1,2-Tetrachloroethane	2017/02/15		101	%	60 - 130
			1,1,2,2-Tetrachloroethane	2017/02/15		95	%	60 - 130
			Tetrachloroethylene	2017/02/15		102	%	60 - 130
			Toluene	2017/02/15		90	%	60 - 130
			1,1,1-Trichloroethane	2017/02/15		96	%	60 - 130
			1,1,2-Trichloroethane	2017/02/15		89	%	60 - 130
			Trichloroethylene	2017/02/15		103	%	60 - 130
			Trichlorofluoromethane (FREON 11)	2017/02/15		105	%	60 - 130
			Vinyl Chloride	2017/02/15		105	%	60 - 130
			p+m-Xylene	2017/02/15		86	%	60 - 130
			o-Xylene	2017/02/15		89	%	60 - 130
			F1 (C6-C10)	2017/02/15		90	%	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
4864457	YY	Method Blank	4-Bromofluorobenzene	2017/02/15		100	%	60 - 140
			D10-o-Xylene	2017/02/15		127	%	60 - 130
			D4-1,2-Dichloroethane	2017/02/15		97	%	60 - 140
			D8-Toluene	2017/02/15		91	%	60 - 140
			Acetone (2-Propanone)	2017/02/15	ND, RDL=0.50		ug/g	
			Benzene	2017/02/15	ND, RDL=0.020		ug/g	
			Bromodichloromethane	2017/02/15	ND, RDL=0.050		ug/g	
			Bromoform	2017/02/15	ND, RDL=0.050		ug/g	
			Bromomethane	2017/02/15	ND, RDL=0.050		ug/g	
			Carbon Tetrachloride	2017/02/15	ND, RDL=0.050		ug/g	
			Chlorobenzene	2017/02/15	ND, RDL=0.050		ug/g	
			Chloroform	2017/02/15	ND, RDL=0.050		ug/g	
			Dibromochloromethane	2017/02/15	ND, RDL=0.050		ug/g	
			1,2-Dichlorobenzene	2017/02/15	ND, RDL=0.050		ug/g	
			1,3-Dichlorobenzene	2017/02/15	ND, RDL=0.050		ug/g	
			1,4-Dichlorobenzene	2017/02/15	ND, RDL=0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2017/02/15	ND, RDL=0.050		ug/g	
			1,1-Dichloroethane	2017/02/15	ND, RDL=0.050		ug/g	
			1,2-Dichloroethane	2017/02/15	ND, RDL=0.050		ug/g	
			1,1-Dichloroethylene	2017/02/15	ND, RDL=0.050		ug/g	
			cis-1,2-Dichloroethylene	2017/02/15	ND, RDL=0.050		ug/g	
			trans-1,2-Dichloroethylene	2017/02/15	ND, RDL=0.050		ug/g	
			1,2-Dichloropropane	2017/02/15	ND, RDL=0.050		ug/g	
			cis-1,3-Dichloropropene	2017/02/15	ND, RDL=0.030		ug/g	
			trans-1,3-Dichloropropene	2017/02/15	ND, RDL=0.040		ug/g	
			Ethylbenzene	2017/02/15	ND, RDL=0.020		ug/g	

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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	2017/02/15	ND, RDL=0.050		ug/g	
			Hexane	2017/02/15	ND, RDL=0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2017/02/15	ND, RDL=0.050		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2017/02/15	ND, RDL=0.50		ug/g	
			Methyl Isobutyl Ketone	2017/02/15	ND, RDL=0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2017/02/15	ND, RDL=0.050		ug/g	
			Styrene	2017/02/15	ND, RDL=0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2017/02/15	ND, RDL=0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2017/02/15	ND, RDL=0.050		ug/g	
			Tetrachloroethylene	2017/02/15	ND, RDL=0.050		ug/g	
			Toluene	2017/02/15	ND, RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2017/02/15	ND, RDL=0.050		ug/g	
			1,1,2-Trichloroethane	2017/02/15	ND, RDL=0.050		ug/g	
			Trichloroethylene	2017/02/15	ND, RDL=0.050		ug/g	
			Trichlorofluoromethane (FREON 11)	2017/02/15	ND, RDL=0.050		ug/g	
			Vinyl Chloride	2017/02/15	ND, RDL=0.020		ug/g	
			p+m-Xylene	2017/02/15	ND, RDL=0.020		ug/g	
			o-Xylene	2017/02/15	ND, RDL=0.020		ug/g	
			Total Xylenes	2017/02/15	ND, RDL=0.020		ug/g	
			F1 (C6-C10)	2017/02/15	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2017/02/15	ND, RDL=10		ug/g	
4864457	YY	RPD	Acetone (2-Propanone)	2017/02/15	NC		%	50
			Benzene	2017/02/15	NC		%	50
			Bromodichloromethane	2017/02/15	NC		%	50
			Bromoform	2017/02/15	NC		%	50
			Bromomethane	2017/02/15	NC		%	50
			Carbon Tetrachloride	2017/02/15	NC		%	50
			Chlorobenzene	2017/02/15	NC		%	50

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chloroform	2017/02/15	NC		%	50
			Dibromochloromethane	2017/02/15	NC		%	50
			1,2-Dichlorobenzene	2017/02/15	NC		%	50
			1,3-Dichlorobenzene	2017/02/15	NC		%	50
			1,4-Dichlorobenzene	2017/02/15	NC		%	50
			Dichlorodifluoromethane (FREON 12)	2017/02/15	NC		%	50
			1,1-Dichloroethane	2017/02/15	NC		%	50
			1,2-Dichloroethane	2017/02/15	NC		%	50
			1,1-Dichloroethylene	2017/02/15	NC		%	50
			cis-1,2-Dichloroethylene	2017/02/15	NC		%	50
			trans-1,2-Dichloroethylene	2017/02/15	NC		%	50
			1,2-Dichloropropane	2017/02/15	NC		%	50
			cis-1,3-Dichloropropene	2017/02/15	NC		%	50
			trans-1,3-Dichloropropene	2017/02/15	NC		%	50
			Ethylbenzene	2017/02/15	NC		%	50
			Ethylene Dibromide	2017/02/15	NC		%	50
			Hexane	2017/02/15	NC		%	50
			Methylene Chloride(Dichloromethane)	2017/02/15	NC		%	50
			Methyl Ethyl Ketone (2-Butanone)	2017/02/15	NC		%	50
			Methyl Isobutyl Ketone	2017/02/15	NC		%	50
			Methyl t-butyl ether (MTBE)	2017/02/15	NC		%	50
			Styrene	2017/02/15	NC		%	50
			1,1,1,2-Tetrachloroethane	2017/02/15	NC		%	50
			1,1,2,2-Tetrachloroethane	2017/02/15	NC		%	50
			Tetrachloroethylene	2017/02/15	NC		%	50
			Toluene	2017/02/15	NC		%	50
			1,1,1-Trichloroethane	2017/02/15	NC		%	50
			1,1,2-Trichloroethane	2017/02/15	NC		%	50
			Trichloroethylene	2017/02/15	NC		%	50
			Trichlorofluoromethane (FREON 11)	2017/02/15	NC		%	50
			Vinyl Chloride	2017/02/15	NC		%	50
			p+m-Xylene	2017/02/15	NC		%	50
			o-Xylene	2017/02/15	NC		%	50
			Total Xylenes	2017/02/15	NC		%	50
			F1 (C6-C10)	2017/02/15	NC		%	30
			F1 (C6-C10) - BTEX	2017/02/15	NC		%	30
4864525	ZSK	Matrix Spike [DXD107-01]	Phenols-4AAP	2017/02/16		96	%	75 - 125
4864525	ZSK	Spiked Blank	Phenols-4AAP	2017/02/16		97	%	80 - 120
4864525	ZSK	Method Blank	Phenols-4AAP	2017/02/16	ND, RDL=0.04		ug/g	
4864525	ZSK	RPD [DXD107-01]	Phenols-4AAP	2017/02/16	NC		%	20
4864652	GYA	RPD	Moisture	2017/02/15	2.8		%	20
4864874	LRA	Matrix Spike	1,4-Difluorobenzene	2017/02/15		96	%	60 - 140
			4-Bromofluorobenzene	2017/02/15		96	%	60 - 140
			D10-Ethylbenzene	2017/02/15		91	%	60 - 140
			D4-1,2-Dichloroethane	2017/02/15		87	%	60 - 140
			Benzene	2017/02/15		92	%	60 - 140
			Toluene	2017/02/15		95	%	60 - 140
			Ethylbenzene	2017/02/15		103	%	60 - 140
			o-Xylene	2017/02/15		104	%	60 - 140
			p+m-Xylene	2017/02/15		90	%	60 - 140

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F1 (C6-C10)	2017/02/15		NC	%	60 - 140
4864874	LRA	Spiked Blank	1,4-Difluorobenzene	2017/02/15		99	%	60 - 140
			4-Bromofluorobenzene	2017/02/15		96	%	60 - 140
			D10-Ethylbenzene	2017/02/15		91	%	60 - 140
			D4-1,2-Dichloroethane	2017/02/15		90	%	60 - 140
			Benzene	2017/02/15		97	%	60 - 140
			Toluene	2017/02/15		94	%	60 - 140
			Ethylbenzene	2017/02/15		102	%	60 - 140
			o-Xylene	2017/02/15		104	%	60 - 140
			p+m-Xylene	2017/02/15		90	%	60 - 140
			F1 (C6-C10)	2017/02/15		96	%	80 - 120
4864874	LRA	Method Blank	1,4-Difluorobenzene	2017/02/15		97	%	60 - 140
			4-Bromofluorobenzene	2017/02/15		97	%	60 - 140
			D10-Ethylbenzene	2017/02/15		93	%	60 - 140
			D4-1,2-Dichloroethane	2017/02/15		89	%	60 - 140
			Benzene	2017/02/15	ND, RDL=0.020		ug/g	
			Toluene	2017/02/15	ND, RDL=0.020		ug/g	
			Ethylbenzene	2017/02/15	ND, RDL=0.020		ug/g	
			o-Xylene	2017/02/15	ND, RDL=0.020		ug/g	
			p+m-Xylene	2017/02/15	ND, RDL=0.040		ug/g	
			Total Xylenes	2017/02/15	ND, RDL=0.040		ug/g	
			F1 (C6-C10)	2017/02/15	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2017/02/15	ND, RDL=10		ug/g	
4864874	LRA	RPD	Benzene	2017/02/15	NC		%	50
			Toluene	2017/02/15	NC		%	50
			Ethylbenzene	2017/02/15	NC		%	50
			o-Xylene	2017/02/15	NC		%	50
			p+m-Xylene	2017/02/15	NC		%	50
			Total Xylenes	2017/02/15	NC		%	50
			F1 (C6-C10)	2017/02/15	18		%	30
			F1 (C6-C10) - BTEX	2017/02/15	18		%	30
4865062	NS3	QC Standard	Sieve - #200 (<0.075mm)	2017/02/16		55	%	53 - 58
			Sieve - #200 (>0.075mm)	2017/02/16		45	%	42 - 47
4865062	NS3	RPD	Sieve - #200 (<0.075mm)	2017/02/16	0		%	20
			Sieve - #200 (>0.075mm)	2017/02/16	NC		%	20
4865088	SHG	Matrix Spike	Decachlorobiphenyl	2017/02/16		87	%	60 - 130
			Aroclor 1260	2017/02/16		79	%	60 - 130
			Total PCB	2017/02/16		79	%	60 - 130
4865088	SHG	Spiked Blank	Decachlorobiphenyl	2017/02/16		86	%	60 - 130
			Aroclor 1260	2017/02/16		82	%	60 - 130
			Total PCB	2017/02/16		82	%	60 - 130
4865088	SHG	Method Blank	Decachlorobiphenyl	2017/02/16		88	%	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
			Aroclor 1242	2017/02/16	ND, RDL=0.010		ug/g	
			Aroclor 1248	2017/02/16	ND, RDL=0.010		ug/g	
			Aroclor 1254	2017/02/16	ND, RDL=0.010		ug/g	
			Aroclor 1260	2017/02/16	ND, RDL=0.010		ug/g	
			Total PCB	2017/02/16	ND, RDL=0.010		ug/g	
4865088	SHG	RPD	Aroclor 1242	2017/02/16	NC		%	50
			Aroclor 1248	2017/02/16	NC		%	50
			Aroclor 1254	2017/02/16	NC		%	50
			Aroclor 1260	2017/02/16	NC		%	50
			Total PCB	2017/02/16	NC		%	50
4865758	AYA	Matrix Spike	4-Bromofluorobenzene	2017/02/16		100	%	60 - 140
			D10-o-Xylene	2017/02/16		99	%	60 - 130
			D4-1,2-Dichloroethane	2017/02/16		96	%	60 - 140
			D8-Toluene	2017/02/16		98	%	60 - 140
			Acetone (2-Propanone)	2017/02/16		84	%	60 - 140
			Benzene	2017/02/16		94	%	60 - 140
			Bromodichloromethane	2017/02/16		95	%	60 - 140
			Bromoform	2017/02/16		89	%	60 - 140
			Bromomethane	2017/02/16		96	%	60 - 140
			Carbon Tetrachloride	2017/02/16		95	%	60 - 140
			Chlorobenzene	2017/02/16		95	%	60 - 140
			Chloroform	2017/02/16		93	%	60 - 140
			Dibromochloromethane	2017/02/16		93	%	60 - 140
			1,2-Dichlorobenzene	2017/02/16		92	%	60 - 140
			1,3-Dichlorobenzene	2017/02/16		94	%	60 - 140
			1,4-Dichlorobenzene	2017/02/16		94	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2017/02/16		88	%	60 - 140
			1,1-Dichloroethane	2017/02/16		97	%	60 - 140
			1,2-Dichloroethane	2017/02/16		89	%	60 - 140
			1,1-Dichloroethylene	2017/02/16		84	%	60 - 140
			cis-1,2-Dichloroethylene	2017/02/16		99	%	60 - 140
			trans-1,2-Dichloroethylene	2017/02/16		95	%	60 - 140
			1,2-Dichloropropane	2017/02/16		98	%	60 - 140
			cis-1,3-Dichloropropene	2017/02/16		98	%	60 - 140
			trans-1,3-Dichloropropene	2017/02/16		92	%	60 - 140
			Ethylbenzene	2017/02/16		97	%	60 - 140
			Ethylene Dibromide	2017/02/16		93	%	60 - 140
			Hexane	2017/02/16		103	%	60 - 140
			Methylene Chloride(Dichloromethane)	2017/02/16		96	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2017/02/16		97	%	60 - 140
			Methyl Isobutyl Ketone	2017/02/16		98	%	60 - 140
			Methyl t-butyl ether (MTBE)	2017/02/16		96	%	60 - 140
			Styrene	2017/02/16		93	%	60 - 140
			1,1,1,2-Tetrachloroethane	2017/02/16		94	%	60 - 140
			1,1,2,2-Tetrachloroethane	2017/02/16		92	%	60 - 140
			Tetrachloroethylene	2017/02/16		94	%	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
			Toluene	2017/02/16		92	%	60 - 140
			1,1,1-Trichloroethane	2017/02/16		94	%	60 - 140
			1,1,2-Trichloroethane	2017/02/16		92	%	60 - 140
			Trichloroethylene	2017/02/16		94	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2017/02/16		87	%	60 - 140
			Vinyl Chloride	2017/02/16		102	%	60 - 140
			p+m-Xylene	2017/02/16		93	%	60 - 140
			o-Xylene	2017/02/16		92	%	60 - 140
4865758	AYA	Spiked Blank	4-Bromofluorobenzene	2017/02/16		102	%	60 - 140
			D10-o-Xylene	2017/02/16		102	%	60 - 130
			D4-1,2-Dichloroethane	2017/02/16		100	%	60 - 140
			D8-Toluene	2017/02/16		98	%	60 - 140
			Acetone (2-Propanone)	2017/02/16		87	%	60 - 140
			Benzene	2017/02/16		101	%	60 - 130
			Bromodichloromethane	2017/02/16		103	%	60 - 130
			Bromoform	2017/02/16		99	%	60 - 130
			Bromomethane	2017/02/16		106	%	60 - 140
			Carbon Tetrachloride	2017/02/16		101	%	60 - 130
			Chlorobenzene	2017/02/16		102	%	60 - 130
			Chloroform	2017/02/16		100	%	60 - 130
			Dibromochloromethane	2017/02/16		102	%	60 - 130
			1,2-Dichlorobenzene	2017/02/16		97	%	60 - 130
			1,3-Dichlorobenzene	2017/02/16		99	%	60 - 130
			1,4-Dichlorobenzene	2017/02/16		100	%	60 - 130
			Dichlorodifluoromethane (FREON 12)	2017/02/16		94	%	60 - 140
			1,1-Dichloroethane	2017/02/16		104	%	60 - 130
			1,2-Dichloroethane	2017/02/16		96	%	60 - 130
			1,1-Dichloroethylene	2017/02/16		90	%	60 - 130
			cis-1,2-Dichloroethylene	2017/02/16		107	%	60 - 130
			trans-1,2-Dichloroethylene	2017/02/16		102	%	60 - 130
			1,2-Dichloropropane	2017/02/16		105	%	60 - 130
			cis-1,3-Dichloropropene	2017/02/16		108	%	60 - 130
			trans-1,3-Dichloropropene	2017/02/16		100	%	60 - 130
			Ethylbenzene	2017/02/16		102	%	60 - 130
			Ethylene Dibromide	2017/02/16		102	%	60 - 130
			Hexane	2017/02/16		109	%	60 - 130
			Methylene Chloride(Dichloromethane)	2017/02/16		104	%	60 - 130
			Methyl Ethyl Ketone (2-Butanone)	2017/02/16		106	%	60 - 140
			Methyl Isobutyl Ketone	2017/02/16		109	%	60 - 130
			Methyl t-butyl ether (MTBE)	2017/02/16		101	%	60 - 130
			Styrene	2017/02/16		100	%	60 - 130
			1,1,1,2-Tetrachloroethane	2017/02/16		100	%	60 - 130
			1,1,2,2-Tetrachloroethane	2017/02/16		102	%	60 - 130
			Tetrachloroethylene	2017/02/16		100	%	60 - 130
			Toluene	2017/02/16		98	%	60 - 130
			1,1,1-Trichloroethane	2017/02/16		100	%	60 - 130
			1,1,2-Trichloroethane	2017/02/16		99	%	60 - 130
			Trichloroethylene	2017/02/16		101	%	60 - 130
			Trichlorofluoromethane (FREON 11)	2017/02/16		95	%	60 - 130
			Vinyl Chloride	2017/02/16		110	%	60 - 130
			p+m-Xylene	2017/02/16		99	%	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
			o-Xylene	2017/02/16		98	%	60 - 130
4865758	AYA	Method Blank	4-Bromofluorobenzene	2017/02/16		102	%	60 - 140
			D10-o-Xylene	2017/02/16		104	%	60 - 130
			D4-1,2-Dichloroethane	2017/02/16		99	%	60 - 140
			D8-Toluene	2017/02/16		96	%	60 - 140
			Acetone (2-Propanone)	2017/02/16	ND, RDL=0.50		ug/g	
			Benzene	2017/02/16	ND, RDL=0.020		ug/g	
			Bromodichloromethane	2017/02/16	ND, RDL=0.050		ug/g	
			Bromoform	2017/02/16	ND, RDL=0.050		ug/g	
			Bromomethane	2017/02/16	ND, RDL=0.050		ug/g	
			Carbon Tetrachloride	2017/02/16	ND, RDL=0.050		ug/g	
			Chlorobenzene	2017/02/16	ND, RDL=0.050		ug/g	
			Chloroform	2017/02/16	ND, RDL=0.050		ug/g	
			Dibromochloromethane	2017/02/16	ND, RDL=0.050		ug/g	
			1,2-Dichlorobenzene	2017/02/16	ND, RDL=0.050		ug/g	
			1,3-Dichlorobenzene	2017/02/16	ND, RDL=0.050		ug/g	
			1,4-Dichlorobenzene	2017/02/16	ND, RDL=0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2017/02/16	ND, RDL=0.050		ug/g	
			1,1-Dichloroethane	2017/02/16	ND, RDL=0.050		ug/g	
			1,2-Dichloroethane	2017/02/16	ND, RDL=0.050		ug/g	
			1,1-Dichloroethylene	2017/02/16	ND, RDL=0.050		ug/g	
			cis-1,2-Dichloroethylene	2017/02/16	ND, RDL=0.050		ug/g	
			trans-1,2-Dichloroethylene	2017/02/16	ND, RDL=0.050		ug/g	
			1,2-Dichloropropane	2017/02/16	ND, RDL=0.050		ug/g	
			cis-1,3-Dichloropropene	2017/02/16	ND, RDL=0.030		ug/g	
			trans-1,3-Dichloropropene	2017/02/16	ND, RDL=0.040		ug/g	
			Ethylbenzene	2017/02/16	ND, RDL=0.020		ug/g	

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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	2017/02/16	ND, RDL=0.050		ug/g	
			Hexane	2017/02/16	ND, RDL=0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2017/02/16	ND, RDL=0.050		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2017/02/16	ND, RDL=0.50		ug/g	
			Methyl Isobutyl Ketone	2017/02/16	ND, RDL=0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2017/02/16	ND, RDL=0.050		ug/g	
			Styrene	2017/02/16	ND, RDL=0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2017/02/16	ND, RDL=0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2017/02/16	ND, RDL=0.050		ug/g	
			Tetrachloroethylene	2017/02/16	ND, RDL=0.050		ug/g	
			Toluene	2017/02/16	ND, RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2017/02/16	ND, RDL=0.050		ug/g	
			1,1,2-Trichloroethane	2017/02/16	ND, RDL=0.050		ug/g	
			Trichloroethylene	2017/02/16	ND, RDL=0.050		ug/g	
			Trichlorofluoromethane (FREON 11)	2017/02/16	ND, RDL=0.050		ug/g	
			Vinyl Chloride	2017/02/16	ND, RDL=0.020		ug/g	
			p+m-Xylene	2017/02/16	ND, RDL=0.020		ug/g	
			o-Xylene	2017/02/16	ND, RDL=0.020		ug/g	
			Total Xylenes	2017/02/16	ND, RDL=0.020		ug/g	
4865758	AYA	RPD	Acetone (2-Propanone)	2017/02/16	NC		%	50
			Benzene	2017/02/16	NC		%	50
			Bromodichloromethane	2017/02/16	NC		%	50
			Bromoform	2017/02/16	NC		%	50
			Bromomethane	2017/02/16	NC		%	50
			Carbon Tetrachloride	2017/02/16	NC		%	50
			Chlorobenzene	2017/02/16	NC		%	50
			Chloroform	2017/02/16	NC		%	50
			Dibromochloromethane	2017/02/16	NC		%	50
			1,2-Dichlorobenzene	2017/02/16	NC		%	50
			1,3-Dichlorobenzene	2017/02/16	NC		%	50

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,4-Dichlorobenzene	2017/02/16	NC		%	50
			Dichlorodifluoromethane (FREON 12)	2017/02/16	NC		%	50
			1,1-Dichloroethane	2017/02/16	NC		%	50
			1,2-Dichloroethane	2017/02/16	NC		%	50
			1,1-Dichloroethylene	2017/02/16	NC		%	50
			cis-1,2-Dichloroethylene	2017/02/16	NC		%	50
			trans-1,2-Dichloroethylene	2017/02/16	NC		%	50
			1,2-Dichloropropane	2017/02/16	NC		%	50
			cis-1,3-Dichloropropene	2017/02/16	NC		%	50
			trans-1,3-Dichloropropene	2017/02/16	NC		%	50
			Ethylbenzene	2017/02/16	NC		%	50
			Ethylene Dibromide	2017/02/16	NC		%	50
			Hexane	2017/02/16	NC		%	50
			Methylene Chloride(Dichloromethane)	2017/02/16	NC		%	50
			Methyl Ethyl Ketone (2-Butanone)	2017/02/16	NC		%	50
			Methyl Isobutyl Ketone	2017/02/16	NC		%	50
			Methyl t-butyl ether (MTBE)	2017/02/16	NC		%	50
			Styrene	2017/02/16	NC		%	50
			1,1,1,2-Tetrachloroethane	2017/02/16	NC		%	50
			1,1,2,2-Tetrachloroethane	2017/02/16	NC		%	50
			Tetrachloroethylene	2017/02/16	NC		%	50
			Toluene	2017/02/16	NC		%	50
			1,1,1-Trichloroethane	2017/02/16	NC		%	50
			1,1,2-Trichloroethane	2017/02/16	NC		%	50
			Trichloroethylene	2017/02/16	NC		%	50
			Trichlorofluoromethane (FREON 11)	2017/02/16	NC		%	50
			Vinyl Chloride	2017/02/16	NC		%	50
			p+m-Xylene	2017/02/16	NC		%	50
			o-Xylene	2017/02/16	NC		%	50
			Total Xylenes	2017/02/16	NC		%	50
4866030	MC	Matrix Spike	Leachable Mercury (Hg)	2017/02/17		101	%	75 - 125
4866030	MC	Leachate Blank	Leachable Mercury (Hg)	2017/02/17	ND, RDL=0.0010		mg/L	
4866030	MC	Spiked Blank	Leachable Mercury (Hg)	2017/02/17		94	%	80 - 120
4866030	MC	Method Blank	Leachable Mercury (Hg)	2017/02/17	ND, RDL=0.0010		mg/L	
4866030	MC	RPD	Leachable Mercury (Hg)	2017/02/17	NC		%	25
4866051	CPE	Matrix Spike	Leachable Arsenic (As)	2017/02/16		107	%	80 - 120
			Leachable Barium (Ba)	2017/02/16		NC	%	80 - 120
			Leachable Boron (B)	2017/02/16		105	%	80 - 120
			Leachable Cadmium (Cd)	2017/02/16		105	%	80 - 120
			Leachable Chromium (Cr)	2017/02/16		105	%	80 - 120
			Leachable Lead (Pb)	2017/02/16		100	%	80 - 120
			Leachable Selenium (Se)	2017/02/16		108	%	80 - 120
			Leachable Silver (Ag)	2017/02/16		102	%	80 - 120
			Leachable Uranium (U)	2017/02/16		104	%	80 - 120
4866051	CPE	Leachate Blank	Leachable Arsenic (As)	2017/02/16	ND, RDL=0.2		mg/L	
			Leachable Barium (Ba)	2017/02/16	ND, RDL=0.2		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Leachable Boron (B)	2017/02/16	ND, RDL=0.1		mg/L	
			Leachable Cadmium (Cd)	2017/02/16	ND, RDL=0.05		mg/L	
			Leachable Chromium (Cr)	2017/02/16	ND, RDL=0.1		mg/L	
			Leachable Lead (Pb)	2017/02/16	ND, RDL=0.1		mg/L	
			Leachable Selenium (Se)	2017/02/16	ND, RDL=0.1		mg/L	
			Leachable Silver (Ag)	2017/02/16	ND, RDL=0.01		mg/L	
			Leachable Uranium (U)	2017/02/16	ND, RDL=0.01		mg/L	
4866051	CPE	Spiked Blank	Leachable Arsenic (As)	2017/02/16		101	%	80 - 120
			Leachable Barium (Ba)	2017/02/16		99	%	80 - 120
			Leachable Boron (B)	2017/02/16		101	%	80 - 120
			Leachable Cadmium (Cd)	2017/02/16		98	%	80 - 120
			Leachable Chromium (Cr)	2017/02/16		104	%	80 - 120
			Leachable Lead (Pb)	2017/02/16		99	%	80 - 120
			Leachable Selenium (Se)	2017/02/16		101	%	80 - 120
			Leachable Silver (Ag)	2017/02/16		100	%	80 - 120
			Leachable Uranium (U)	2017/02/16		99	%	80 - 120
4866051	CPE	RPD	Leachable Arsenic (As)	2017/02/16	NC		%	35
			Leachable Barium (Ba)	2017/02/16	NC		%	35
			Leachable Boron (B)	2017/02/16	NC		%	35
			Leachable Cadmium (Cd)	2017/02/16	NC		%	35
			Leachable Chromium (Cr)	2017/02/16	NC		%	35
			Leachable Lead (Pb)	2017/02/16	NC		%	35
			Leachable Selenium (Se)	2017/02/16	NC		%	35
			Leachable Silver (Ag)	2017/02/16	NC		%	35
			Leachable Uranium (U)	2017/02/16	NC		%	35
4866176	NS3	RPD	Moisture	2017/02/16	0.85		%	20
4866182	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2017/02/16		103	%	75 - 125
			Acid Extractable Arsenic (As)	2017/02/16		101	%	75 - 125
			Acid Extractable Barium (Ba)	2017/02/16		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2017/02/16		103	%	75 - 125
			Acid Extractable Boron (B)	2017/02/16		98	%	75 - 125
			Acid Extractable Cadmium (Cd)	2017/02/16		101	%	75 - 125
			Acid Extractable Chromium (Cr)	2017/02/16		NC	%	75 - 125
			Acid Extractable Cobalt (Co)	2017/02/16		98	%	75 - 125
			Acid Extractable Copper (Cu)	2017/02/16		100	%	75 - 125
			Acid Extractable Lead (Pb)	2017/02/16		97	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2017/02/16		104	%	75 - 125
			Acid Extractable Nickel (Ni)	2017/02/16		99	%	75 - 125
			Acid Extractable Selenium (Se)	2017/02/16		97	%	75 - 125
			Acid Extractable Silver (Ag)	2017/02/16		107	%	75 - 125
			Acid Extractable Thallium (Tl)	2017/02/16		100	%	75 - 125
			Acid Extractable Uranium (U)	2017/02/16		96	%	75 - 125
			Acid Extractable Vanadium (V)	2017/02/16		NC	%	75 - 125

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Zinc (Zn)	2017/02/16		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2017/02/16		96	%	75 - 125
4866182	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2017/02/16		102	%	80 - 120
			Acid Extractable Arsenic (As)	2017/02/16		99	%	80 - 120
			Acid Extractable Barium (Ba)	2017/02/16		100	%	80 - 120
			Acid Extractable Beryllium (Be)	2017/02/16		102	%	80 - 120
			Acid Extractable Boron (B)	2017/02/16		100	%	80 - 120
			Acid Extractable Cadmium (Cd)	2017/02/16		100	%	80 - 120
			Acid Extractable Chromium (Cr)	2017/02/16		102	%	80 - 120
			Acid Extractable Cobalt (Co)	2017/02/16		102	%	80 - 120
			Acid Extractable Copper (Cu)	2017/02/16		102	%	80 - 120
			Acid Extractable Lead (Pb)	2017/02/16		103	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2017/02/16		104	%	80 - 120
			Acid Extractable Nickel (Ni)	2017/02/16		102	%	80 - 120
			Acid Extractable Selenium (Se)	2017/02/16		102	%	80 - 120
			Acid Extractable Silver (Ag)	2017/02/16		105	%	80 - 120
			Acid Extractable Thallium (Tl)	2017/02/16		101	%	80 - 120
			Acid Extractable Uranium (U)	2017/02/16		97	%	80 - 120
			Acid Extractable Vanadium (V)	2017/02/16		101	%	80 - 120
			Acid Extractable Zinc (Zn)	2017/02/16		98	%	80 - 120
			Acid Extractable Mercury (Hg)	2017/02/16		100	%	80 - 120
4866182	DT1	Method Blank	Acid Extractable Antimony (Sb)	2017/02/16	ND, RDL=0.20		ug/g	
			Acid Extractable Arsenic (As)	2017/02/16	ND, RDL=1.0		ug/g	
			Acid Extractable Barium (Ba)	2017/02/16	ND, RDL=0.50		ug/g	
			Acid Extractable Beryllium (Be)	2017/02/16	ND, RDL=0.20		ug/g	
			Acid Extractable Boron (B)	2017/02/16	ND, RDL=5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2017/02/16	ND, RDL=0.10		ug/g	
			Acid Extractable Chromium (Cr)	2017/02/16	ND, RDL=1.0		ug/g	
			Acid Extractable Cobalt (Co)	2017/02/16	ND, RDL=0.10		ug/g	
			Acid Extractable Copper (Cu)	2017/02/16	ND, RDL=0.50		ug/g	
			Acid Extractable Lead (Pb)	2017/02/16	ND, RDL=1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2017/02/16	ND, RDL=0.50		ug/g	
			Acid Extractable Nickel (Ni)	2017/02/16	ND, RDL=0.50		ug/g	
			Acid Extractable Selenium (Se)	2017/02/16	ND, RDL=0.50		ug/g	
			Acid Extractable Silver (Ag)	2017/02/16	ND, RDL=0.20		ug/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Thallium (Tl)	2017/02/16	ND, RDL=0.050		ug/g	
			Acid Extractable Uranium (U)	2017/02/16	ND, RDL=0.050		ug/g	
			Acid Extractable Vanadium (V)	2017/02/16	ND, RDL=5.0		ug/g	
			Acid Extractable Zinc (Zn)	2017/02/16	ND, RDL=5.0		ug/g	
			Acid Extractable Mercury (Hg)	2017/02/16	ND, RDL=0.050		ug/g	
4866182	DT1	RPD	Acid Extractable Antimony (Sb)	2017/02/16	NC		%	30
			Acid Extractable Arsenic (As)	2017/02/16	NC		%	30
			Acid Extractable Barium (Ba)	2017/02/16	5.8		%	30
			Acid Extractable Beryllium (Be)	2017/02/16	NC		%	30
			Acid Extractable Boron (B)	2017/02/16	NC		%	30
			Acid Extractable Cadmium (Cd)	2017/02/16	NC		%	30
			Acid Extractable Chromium (Cr)	2017/02/16	0.39		%	30
			Acid Extractable Cobalt (Co)	2017/02/16	6.4		%	30
			Acid Extractable Copper (Cu)	2017/02/16	1.1		%	30
			Acid Extractable Lead (Pb)	2017/02/16	17		%	30
			Acid Extractable Molybdenum (Mo)	2017/02/16	NC		%	30
			Acid Extractable Nickel (Ni)	2017/02/16	11		%	30
			Acid Extractable Selenium (Se)	2017/02/16	NC		%	30
			Acid Extractable Silver (Ag)	2017/02/16	NC		%	30
			Acid Extractable Thallium (Tl)	2017/02/16	NC		%	30
			Acid Extractable Uranium (U)	2017/02/16	4.6		%	30
			Acid Extractable Vanadium (V)	2017/02/16	NC		%	30
			Acid Extractable Zinc (Zn)	2017/02/16	2.2		%	30
4866186	TA1	Spiked Blank	Conductivity	2017/02/17		99	%	90 - 110
4866186	TA1	Method Blank	Conductivity	2017/02/17	ND, RDL=0.002		mS/cm	
4866186	TA1	RPD	Conductivity	2017/02/17	0.32		%	10
4866207	KTR	Matrix Spike	o-Terphenyl	2017/02/16		94	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/02/16		94	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2017/02/16		97	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2017/02/16		101	%	50 - 130
4866207	KTR	Spiked Blank	o-Terphenyl	2017/02/16		91	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/02/16		90	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2017/02/16		94	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2017/02/16		98	%	80 - 120
4866207	KTR	Method Blank	o-Terphenyl	2017/02/16		90	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/02/16	ND, RDL=10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2017/02/16	ND, RDL=50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2017/02/16	ND, RDL=50		ug/g	
4866207	KTR	RPD	F2 (C10-C16 Hydrocarbons)	2017/02/16	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2017/02/16	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2017/02/16	NC		%	30

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Maxxam Job #: B729730
Report Date: 2017/02/21

DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4866767	NS3	QC Standard	Sieve - #200 (<0.075mm)	2017/02/17		56	%	53 - 58
			Sieve - #200 (>0.075mm)	2017/02/17		44	%	42 - 47
4866767	NS3	RPD	Sieve - #200 (<0.075mm)	2017/02/17	0.010		%	20
			Sieve - #200 (>0.075mm)	2017/02/17	NC		%	20
4866790	RAJ	Matrix Spike	Leachable D10-Anthracene	2017/02/17		102	%	50 - 130
			Leachable D14-Terphenyl (FS)	2017/02/17		81	%	50 - 130
			Leachable D8-Acenaphthylene	2017/02/17		106	%	50 - 130
			Leachable Benzo(a)pyrene	2017/02/17		109	%	50 - 130
4866790	RAJ	Spiked Blank	Leachable D10-Anthracene	2017/02/16		100	%	50 - 130
			Leachable D14-Terphenyl (FS)	2017/02/16		81	%	50 - 130
			Leachable D8-Acenaphthylene	2017/02/16		109	%	50 - 130
			Leachable Benzo(a)pyrene	2017/02/16		111	%	50 - 130
4866790	RAJ	Method Blank	Leachable D10-Anthracene	2017/02/17		99	%	50 - 130
			Leachable D14-Terphenyl (FS)	2017/02/17		81	%	50 - 130
			Leachable D8-Acenaphthylene	2017/02/17		104	%	50 - 130
			Leachable Benzo(a)pyrene	2017/02/17	ND, RDL=0.10		ug/L	
4866790	RAJ	RPD	Leachable Benzo(a)pyrene	2017/02/17	NC		%	40
4867406	JOH	Matrix Spike [DXD106-01]	Hot Water Ext. Boron (B)	2017/02/17		96	%	75 - 125
4867406	JOH	Spiked Blank	Hot Water Ext. Boron (B)	2017/02/17		100	%	75 - 125
4867406	JOH	Method Blank	Hot Water Ext. Boron (B)	2017/02/17	ND, RDL=0.050		ug/g	
4867406	JOH	RPD [DXD106-01]	Hot Water Ext. Boron (B)	2017/02/17	NC		%	40
4868969	SK1	Matrix Spike	F4G-sg (Grav. Heavy Hydrocarbons)	2017/02/18		84	%	65 - 135
4868969	SK1	Spiked Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2017/02/18		100	%	65 - 135
4868969	SK1	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2017/02/18	ND, RDL=100		ug/g	
4868969	SK1	RPD [DXD102-01]	F4G-sg (Grav. Heavy Hydrocarbons)	2017/02/18	NC		%	50

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) The recovery was above the upper control limit. This may represent a high bias in some results for this specific analyte.

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Maxxam Job #: B729730
Report Date: 2017/02/21

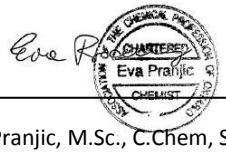
DST Consulting
Client Project #: GV-SO-027667
Site Location: 289 CARLING AVE, OTTAWA
Your P.O. #: 45064626
Sampler Initials: GR

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

Cristina Carriere, Scientific Services



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

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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 #: MB729730
Site Location: GV-SO-027667
Your C.O.C. #: B729730-M060-01-01

Attention:SUBCONTRACTOR

MAXXAM ANALYTICS
OTTAWA
32 COLONNADE RD N
UNIT 1000
NEPEAN, ON
CANADA K2E7J6

Report Date: 2017/02/16
Report #: R2346125
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B710384
Received: 2017/02/14, 09:00

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Flash Point	1	N/A	2017/02/15	AB SOP-00062	ASTM D3828-12A/A 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Your Project #: MB729730
Site Location: GV-SO-027667
Your C.O.C. #: B729730-M060-01-01

Attention:SUBCONTRACTOR

MAXXAM ANALYTICS
OTTAWA
32 COLONNADE RD N
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NEPEAN, ON
CANADA K2E7J6

Report Date: 2017/02/16
Report #: R2346125
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B710384
Received: 2017/02/14, 09:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Joyce Kimani, Project Manager Assistant
Email: JKimani@maxxam.ca
Phone# (403)735-2287
==========
This report has been generated and distributed using a secure automated process.
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Maxxam Job #: B710384
Report Date: 2017/02/16

MAXXAM ANALYTICS
Client Project #: MB729730
Site Location: GV-SO-027667

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		QN9185	
Sampling Date		2017/02/12 13:00	
COC Number		B729730-M060-01-01	
	UNITS	**TCLP COMP (DXD109)**	**QC Batch**
Physical Properties			
Closed Cup Flash Point	deg. C	>61 (1)	8553457
(1) Headspace in sample container was noted at the time of extraction			

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Maxxam Job #: B710384
Report Date: 2017/02/16

MAXXAM ANALYTICS
Client Project #: MB729730
Site Location: GV-SO-027667

GENERAL COMMENTS

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

Package 1	3.0°C

Results relate only to the items tested.

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Maxxam Job #: B710384
Report Date: 2017/02/16

MAXXAM ANALYTICS
Client Project #: MB729730
Site Location: GV-SO-027667

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8553457	HE1	RPD	Closed Cup Flash Point	2017/02/15	NC		%	35

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

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 (one or both samples < 5x RDL).

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Maxxam Job #: B710384
Report Date: 2017/02/16

MAXXAM ANALYTICS
Client Project #: MB729730
Site Location: GV-SO-027667

VALIDATION SIGNATURE PAGE

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

Harry (Peng) Liang, Senior Analyst

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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 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#99646 City of Ottawa	Company Name:	#21334 DST Consulting	Quotation #:		Maxxam Job #:	Bottle Order #: 596990
Attention:	Accounts Payable	Attention:	Ginger Rogers	P.O. #:			
Address:	800 Greens Creek Dr Ottawa ON K1J 1A6	Address:	203, 2150 Thurston Drive ON Ottawa, ON	Project:	GV-SO-027667	COC #: C#596990-01-01	Project Manager: Madison Bingley
Tel:	(613) 580-2424 x Fax: (613) 745-7655 x	Tel:	613-247-2461 Fax: 613-748-1356	Project Name:	289 Carling AVE, Ottawa		
Email:	ap-cf@ottawa.ca	Email:	grogers@dstgroup.com	Site #:	Phase Two ESA		
				Sampled By:	GAR		

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: Please Report TCLP Comp Seperately

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 PAHs (Soil)	O.Reg 153 Metals & Inorganics Pkg (Soil)	O.Reg 153 PCBs (Soil)	Phenols (4AAP)	O.Reg 153 VOCs & F1-F4 (Soil)	Sieve, 75um	TCLP PHC F1-F4	TCLP METALS	TCLP PAH	FLASH + PH	# of Bottles	Comments
1		MW17-01 0.03-0.30	11Feb2016	0830	Soil	NO	X	X	X	X	X	X					3	LIMITED SAMPLE
2		MW17-02 0.03-0.10	11Feb2016	1200	Soil	NO		X				X					1	LIMITED SAMPLE
3		MW17-03 0.03-0.50	11Feb2016	1500	Soil	NO	X	X	X	X	X						3	LIMITED SAMPLE
4		MW17-04 0.03-0.50	12Feb2016	0900	Soil	NO	X	X	X	X	X						3	LIMITED SAMPLE
5		BH17-05 0.03-0.60	12Feb2016	1200	Soil	NO	X	X	X	X	X							LIMITED SAMPLE
6		BH17-06 0.03-0.60	12Feb2016	1230	Soil	NO	X	X	X	X	X							LIMITED SAMPLE
7		DUP#1	12Feb2016	—		NO	X	X	X	X	X							
8		TCLP COMP	12Feb2016	1300	Soil Comp	NO							X	X	X	X	4	RECEIVED IN OTTAWA
9																		
10																		ON ICE

13-Feb-17 13:05
Madison Bingley
B729730
OTT-001
KJY

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
B.ROGERS	17/02/13	1305	[illegible]	2017/02/13	13:05	0		1,0,4	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

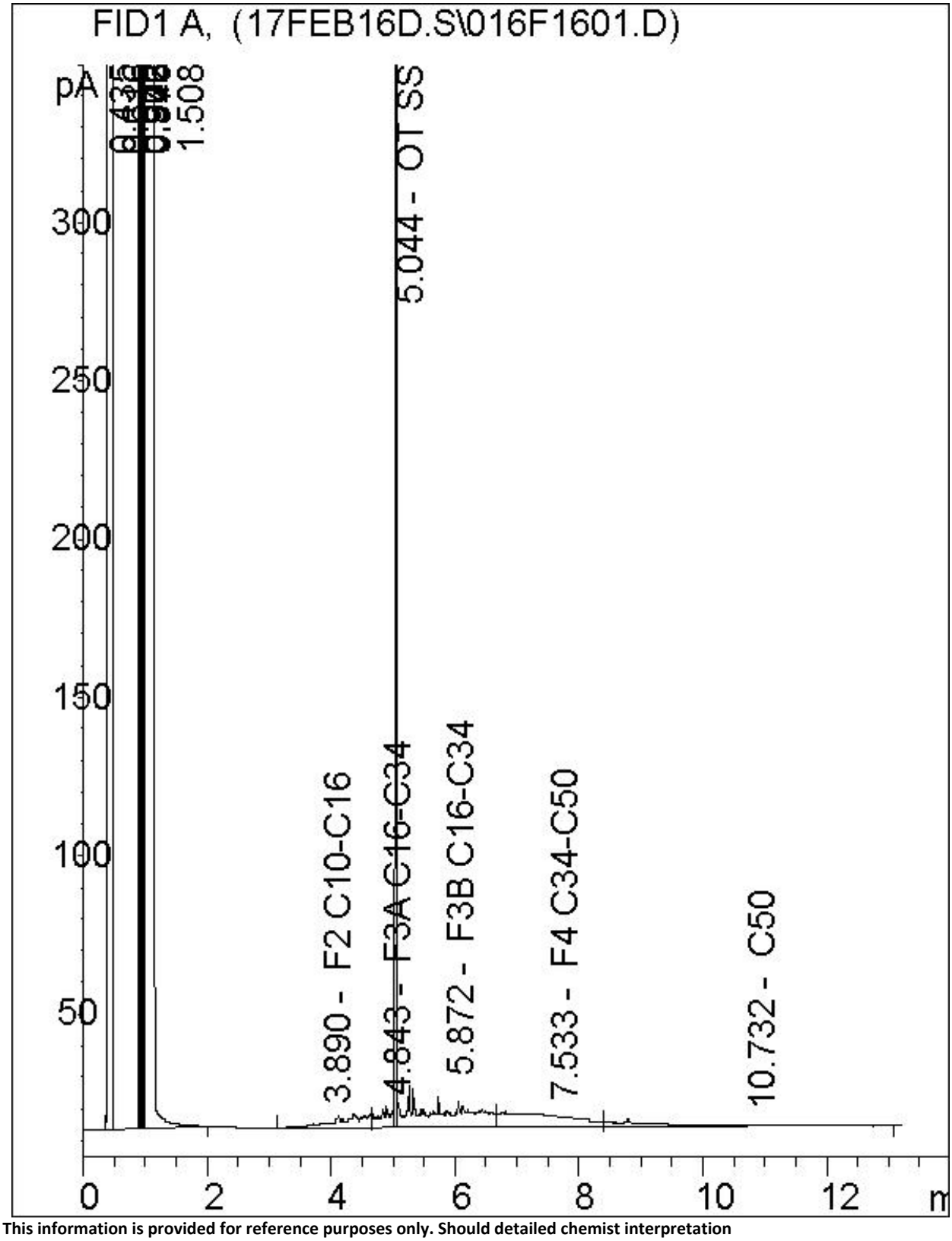
White: Maxxa Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam Job #: B729730
Report Date: 2017/02/21
Maxxam Sample: DXD102

DST Consulting
Client Project #: GV-SO-027667
Project name: 289 CARLING AVE, OTTAWA
Client ID: MW17.01 0.03-0.30

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

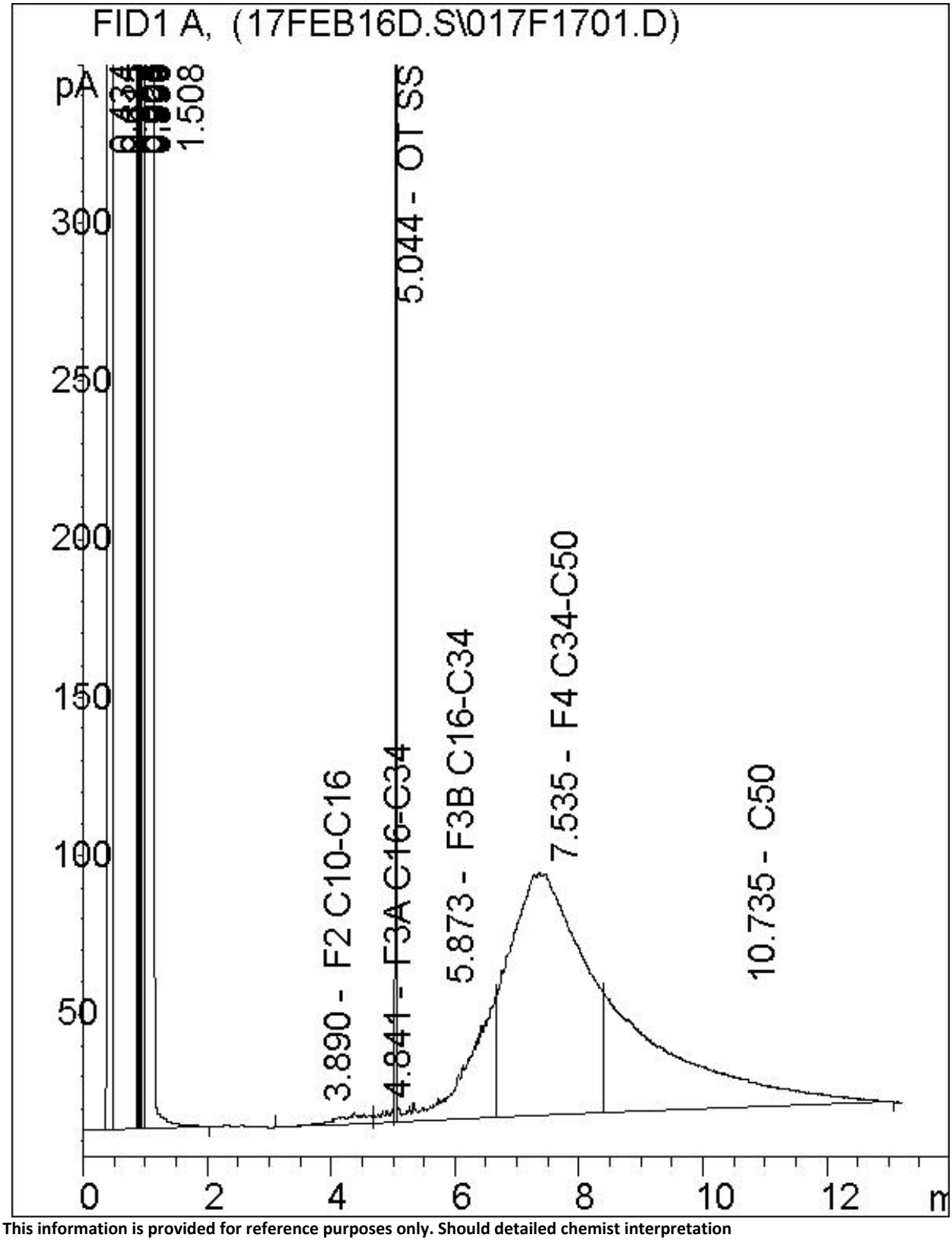


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B729730
Report Date: 2017/02/21
Maxxam Sample: DXD104

DST Consulting
Client Project #: GV-SO-027667
Project name: 289 CARLING AVE, OTTAWA
Client ID: MW17.03 0.03-0.50

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

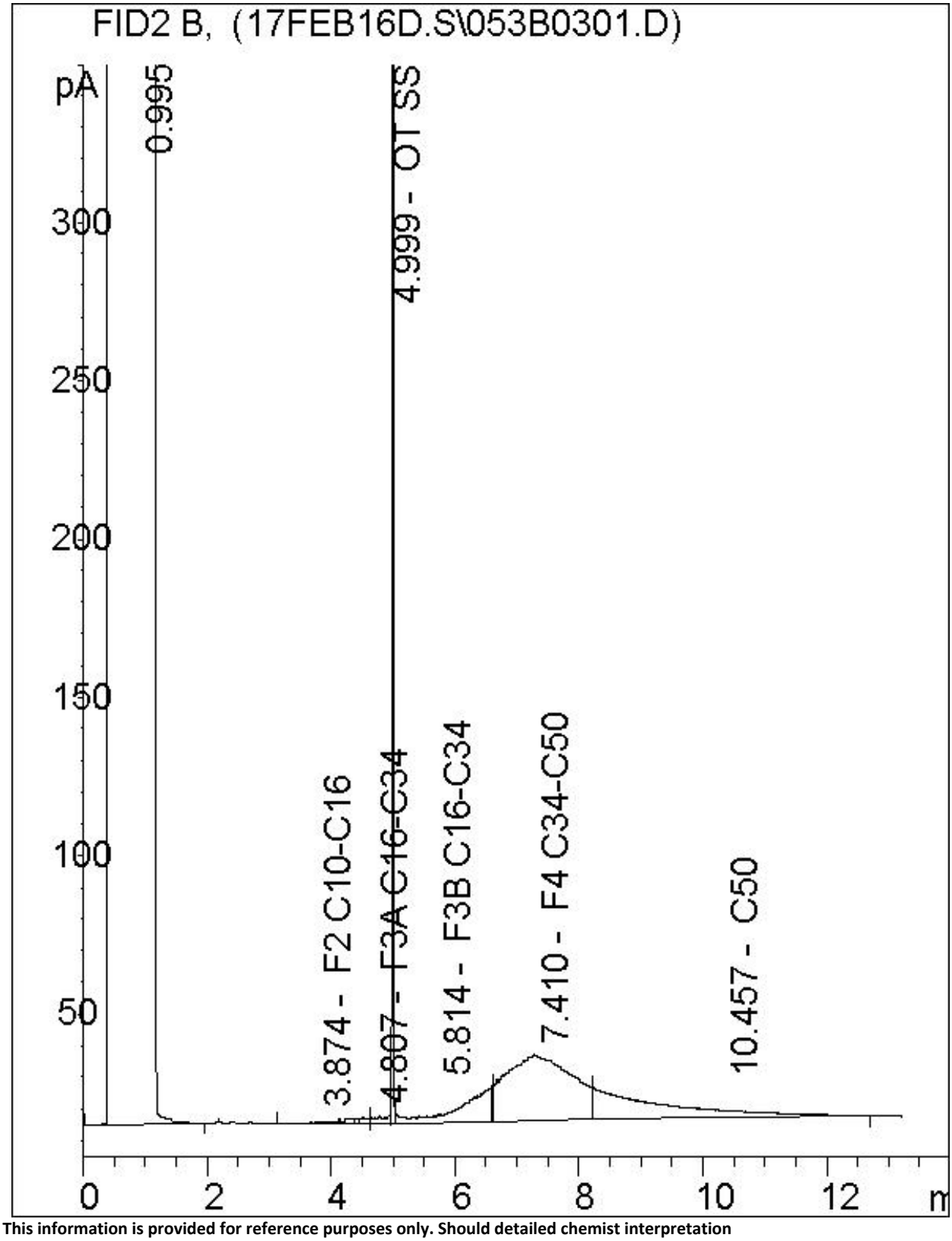


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B729730
Report Date: 2017/02/21
Maxxam Sample: DXD105

DST Consulting
Client Project #: GV-SO-027667
Project name: 289 CARLING AVE, OTTAWA
Client ID: MW17.04 0.03-0.50

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

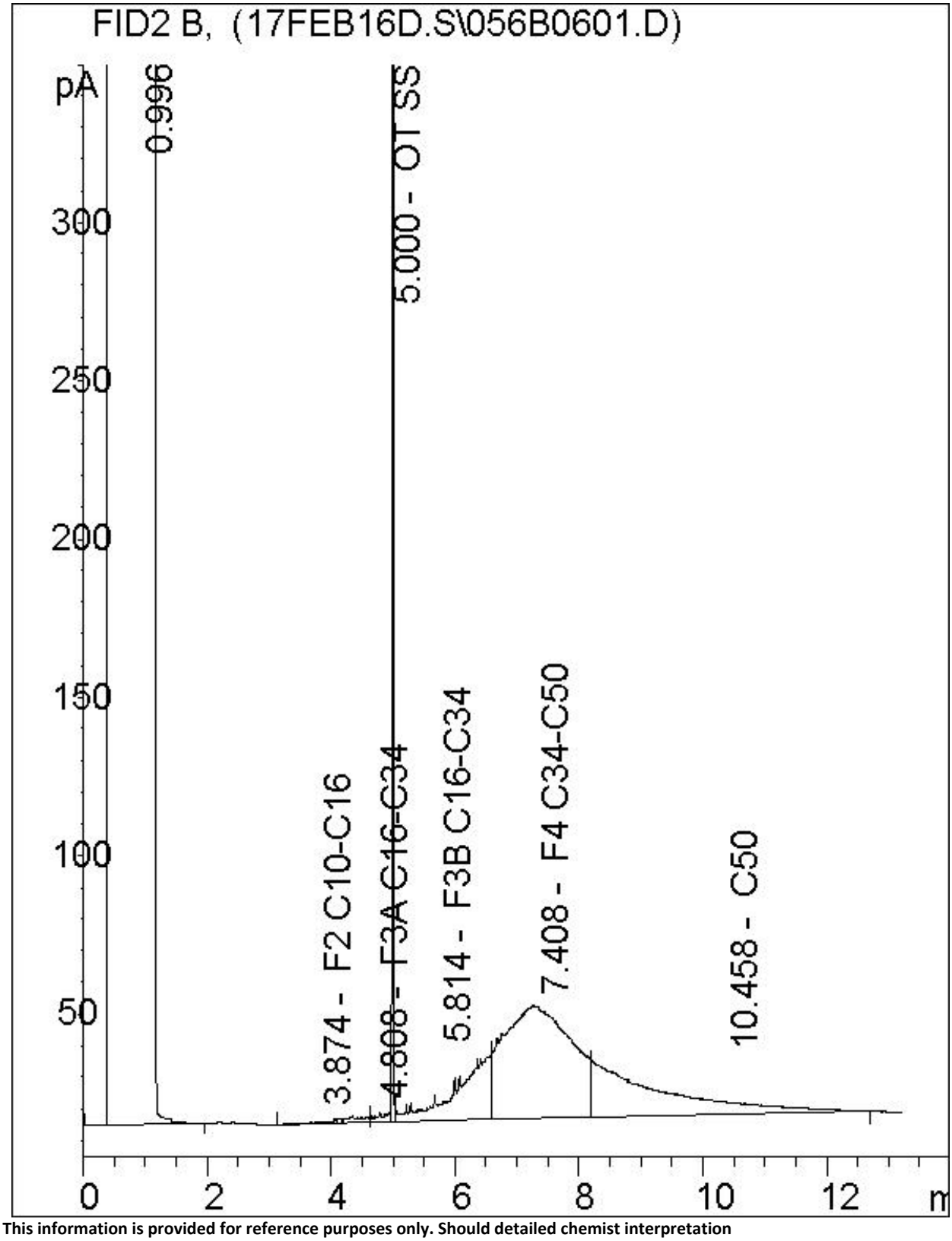


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B729730
Report Date: 2017/02/21
Maxxam Sample: DXD106

DST Consulting
Client Project #: GV-SO-027667
Project name: 289 CARLING AVE, OTTAWA
Client ID: MW17.05 0.03-0.60

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

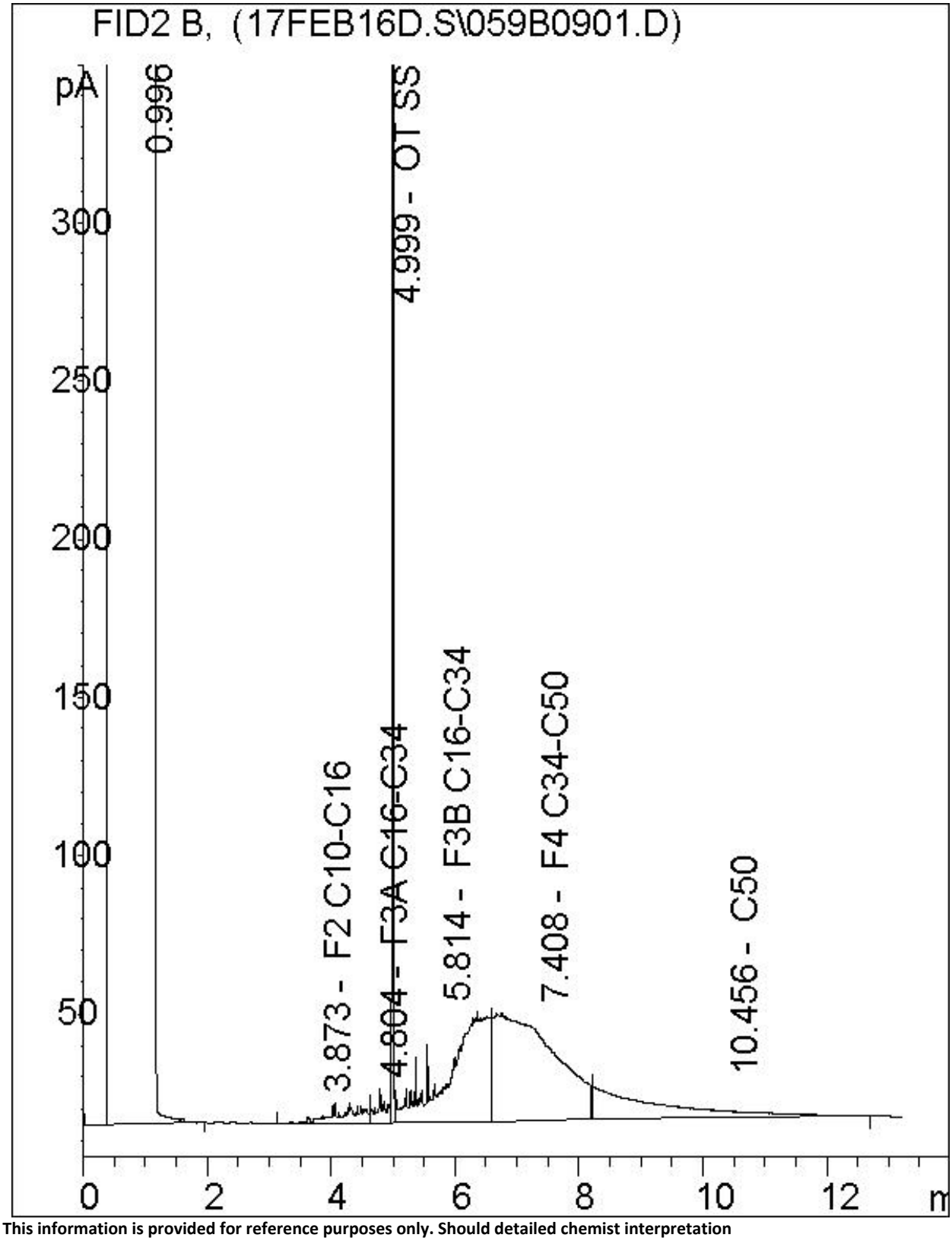


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B729730
Report Date: 2017/02/21
Maxxam Sample: DXD107

DST Consulting
Client Project #: GV-SO-027667
Project name: 289 CARLING AVE, OTTAWA
Client ID: MW17.06 0.03-0.60

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

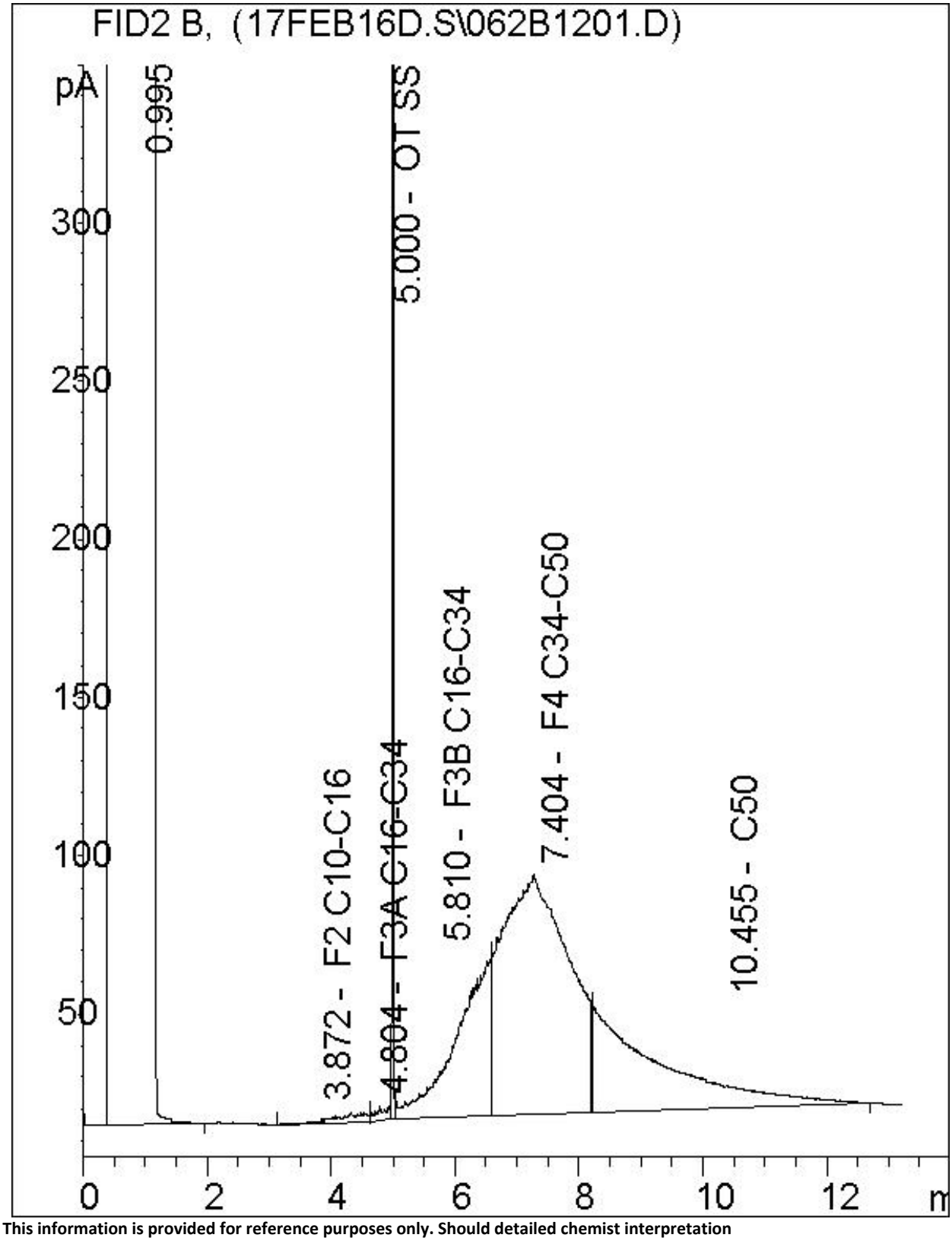


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B729730
Report Date: 2017/02/21
Maxxam Sample: DXD109

DST Consulting
Client Project #: GV-SO-027667
Project name: 289 CARLING AVE, OTTAWA
Client ID: TCLP COMP

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.

Your Project #: GVSO-027667
Your C.O.C. #: 598517-01-01

Attention:Ginger Rogers

DST Consulting Engineers Inc
Ottawa - Standing Offer
2150 Thurston Dr
Unit 203
Ottawa, ON
K1G 5T9

Report Date: 2017/03/02
Report #: R4378564
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B734576
Received: 2017/02/21, 09:30

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	4	N/A	2017/03/02	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum (1)	6	N/A	2017/02/27		EPA 8260C m
Acid Extractables by GC/MS (1)	3	2017/02/23	2017/02/23	CAM SOP-00332	EPA 8270 m
Chromium (VI) in Water (1)	4	N/A	2017/02/23	CAM SOP-00436	EPA 7199 m
Petroleum Hydro. CCME F1 & BTEX in Water	6	N/A	2017/02/22	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water (2)	6	2017/02/22	2017/02/22	OTT SOP-00001	CCME Hydrocarbons
Mercury (1)	4	2017/02/24	2017/02/27	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS (1)	4	N/A	2017/02/24	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM) (1)	3	2017/03/01	2017/03/01	CAM SOP-00318	EPA 8270D m
PAH Compounds in Water by GC/MS (SIM) (1)	1	2017/03/01	2017/03/02	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds in Water (1)	6	N/A	2017/02/24	CAM SOP-00228	EPA 8260C m

Remarks:

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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.

Your Project #: GVSO-027667
Your C.O.C. #: 598517-01-01

Attention:Ginger Rogers

DST Consulting Engineers Inc
Ottawa - Standing Offer
2150 Thurston Dr
Unit 203
Ottawa, ON
K1G 5T9

Report Date: 2017/03/02
Report #: R4378564
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B734576
Received: 2017/02/21, 09:30

(1) This test was performed by Maxxam Analytics Mississauga
(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.
Madison Bingley, Project Manager
Email: MBingley@maxxam.ca
Phone# (613)274-3549
==========
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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 #: B734576
Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		DXZ752	DXZ753	DXZ754	DXZ755		
Sampling Date		2017/02/18 12:30	2017/02/18 14:30	2017/02/18 11:15	2017/02/18 13:30		
COC Number		598517-01-01	598517-01-01	598517-01-01	598517-01-01		
	UNITS	MW17-02	MW17-03	MW17-04	MW17-07	RDL	QC Batch
Polyaromatic Hydrocarbons							
Biphenyl	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Acenaphthene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Acenaphthylene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Anthracene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Benzo(a)anthracene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Benzo(a)pyrene	ug/L		<0.010	<0.010	<0.010	0.010	4881522
Benzo(b/j)fluoranthene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Benzo(g,h,i)perylene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Benzo(k)fluoranthene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Chrysene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Dibenz(a,h)anthracene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Fluoranthene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Fluorene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Indeno(1,2,3-cd)pyrene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
1-Methylnaphthalene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
2-Methylnaphthalene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Naphthalene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Phenanthrene	ug/L		<0.030	<0.030	<0.030	0.030	4881522
Pyrene	ug/L		<0.050	<0.050	<0.050	0.050	4881522
Phenolics							
2-Chlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2,3,4,6-Tetrachlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2,3,5-Trichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2,4-Dichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2,4-Dimethylphenol	ug/L	<1	<1	<1		1	4873493
2,4,6-Trichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2,6-Dichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
4-Chloro-3-Methylphenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
4-Nitrophenol	ug/L	<1	<1	<1		1	4873493
m/p-Cresol	ug/L	<0.5	<0.5	<0.5		0.5	4873493
o-Cresol	ug/L	<0.5	<0.5	<0.5		0.5	4873493
Pentachlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
Phenol	ug/L	<0.5	<0.5	<0.5		0.5	4873493
2,3,4,5-Tetrachlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2,3,5,6-Tetrachlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B734576
Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		DXZ752	DXZ753	DXZ754	DXZ755		
Sampling Date		2017/02/18 12:30	2017/02/18 14:30	2017/02/18 11:15	2017/02/18 13:30		
COC Number		598517-01-01	598517-01-01	598517-01-01	598517-01-01		
	UNITS	MW17-02	MW17-03	MW17-04	MW17-07	RDL	QC Batch
2,3,4-Trichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2,3,6-Trichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2,4,5-Trichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
3,4,5-Trichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2,4-Dinitrophenol	ug/L	<1	<1	<1		1	4873493
2,3-Dichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2,5-Dichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
3,4-Dichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
3,5-Dichlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
4,6-Dinitro-2-methylphenol	ug/L	<1	<1	<1		1	4873493
3 & 4-Chlorophenol	ug/L	<0.1	<0.1	<0.1		0.1	4873493
2-Nitrophenol	ug/L	<1	<1	<1		1	4873493
Surrogate Recovery (%)							
2,4,6-Tribromophenol	%	94	91	99			4873493
2-Fluorophenol	%	56	46 (1)	33 (1)			4873493
D5-Phenol	%	70	70	58			4873493
D10-Anthracene	%		97	93	106		4881522
D14-Terphenyl (FS)	%		97	88	108		4881522
D8-Acenaphthylene	%		102	106	94		4881522

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) Surrogate recovery was below the lower control limit due to matrix interference. This may represent a lower bias in some results.

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Maxxam Job #: B734576
Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

O.REG 153 METALS PACKAGE (WATER)

Maxxam ID		DXZ752	DXZ752		DXZ753		DXZ754		DXZ755		
Sampling Date		2017/02/18 12:30	2017/02/18 12:30		2017/02/18 14:30		2017/02/18 11:15		2017/02/18 13:30		
COC Number		598517-01-01	598517-01-01		598517-01-01		598517-01-01		598517-01-01		
	UNITS	MW17-02	MW17-02 Lab-Dup	RDL	MW17-03	RDL	MW17-04	RDL	MW17-07	RDL	QC Batch
Metals											
Chromium (VI)	ug/L	<0.50	<0.50	0.50	<0.50	0.50	<0.50	0.50	<0.50	0.50	4874438
Mercury (Hg)	ug/L	<0.1		0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	4875211
Dissolved Antimony (Sb)	ug/L	0.61		0.50	<0.50	0.50	<5.0	5.0	0.80	0.50	4872817
Dissolved Arsenic (As)	ug/L	<1.0		1.0	<1.0	1.0	<10	10	<1.0	1.0	4872817
Dissolved Barium (Ba)	ug/L	110		2.0	1100	2.0	1200	20	110	2.0	4872817
Dissolved Beryllium (Be)	ug/L	<0.50		0.50	<0.50	0.50	<5.0	5.0	<0.50	0.50	4872817
Dissolved Boron (B)	ug/L	71		10	43	10	100	100	69	10	4872817
Dissolved Cadmium (Cd)	ug/L	<0.10		0.10	<0.10	0.10	<1.0	1.0	<0.10	0.10	4872817
Dissolved Chromium (Cr)	ug/L	<5.0		5.0	<5.0	5.0	<50	50	<5.0	5.0	4872817
Dissolved Cobalt (Co)	ug/L	0.98		0.50	<2.5 (1)	2.5	<5.0	5.0	1.1	0.50	4872817
Dissolved Copper (Cu)	ug/L	4.2		1.0	1.4	1.0	<50	50	1.9	1.0	4872817
Dissolved Lead (Pb)	ug/L	<0.50		0.50	<0.50	0.50	<5.0	5.0	<0.50	0.50	4872817
Dissolved Molybdenum (Mo)	ug/L	1.8		0.50	0.78	0.50	<5.0	5.0	1.8	0.50	4872817
Dissolved Nickel (Ni)	ug/L	3.5		1.0	<5.0 (1)	5.0	11	10	3.6	1.0	4872817
Dissolved Selenium (Se)	ug/L	<2.0		2.0	<2.0	2.0	<20	20	<2.0	2.0	4872817
Dissolved Silver (Ag)	ug/L	<0.10		0.10	<0.10	0.10	<1.0	1.0	<0.10	0.10	4872817
Dissolved Sodium (Na)	ug/L	270000		100	1600000	500	7000000	5000	260000	100	4872817
Dissolved Thallium (Tl)	ug/L	0.071		0.050	0.072	0.050	<0.50	0.50	0.067	0.050	4872817
Dissolved Uranium (U)	ug/L	2.2		0.10	1.1	0.10	10	1.0	2.3	0.10	4872817
Dissolved Vanadium (V)	ug/L	<0.50		0.50	<2.5 (1)	2.5	<10	10	<0.50	0.50	4872817
Dissolved Zinc (Zn)	ug/L	8.1		5.0	7.8	5.0	<50	50	5.2	5.0	4872817

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
(1) Metal Analysis:Detection Limit was raised due to matrix interferences.

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Maxxam Job #: B734576
Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

O.REG 153 PAHS (WATER)

Maxxam ID		DXZ752		
Sampling Date		2017/02/18 12:30		
COC Number		598517-01-01		
	UNITS	MW17-02	RDL	QC Batch
Polyaromatic Hydrocarbons				
Acenaphthene	ug/L	<0.050	0.050	4881522
Acenaphthylene	ug/L	<0.050	0.050	4881522
Anthracene	ug/L	<0.050	0.050	4881522
Benzo(a)anthracene	ug/L	<0.050	0.050	4881522
Benzo(a)pyrene	ug/L	<0.010	0.010	4881522
Benzo(b/j)fluoranthene	ug/L	<0.050	0.050	4881522
Benzo(g,h,i)perylene	ug/L	<0.050	0.050	4881522
Benzo(k)fluoranthene	ug/L	<0.050	0.050	4881522
Chrysene	ug/L	<0.050	0.050	4881522
Dibenz(a,h)anthracene	ug/L	<0.050	0.050	4881522
Fluoranthene	ug/L	<0.050	0.050	4881522
Fluorene	ug/L	<0.050	0.050	4881522
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	0.050	4881522
1-Methylnaphthalene	ug/L	<0.050	0.050	4881522
2-Methylnaphthalene	ug/L	<0.050	0.050	4881522
Naphthalene	ug/L	<0.050	0.050	4881522
Phenanthrene	ug/L	<0.030	0.030	4881522
Pyrene	ug/L	<0.050	0.050	4881522
Surrogate Recovery (%)				
D10-Anthracene	%	98		4881522
D14-Terphenyl (FS)	%	98		4881522
D8-Acenaphthylene	%	90		4881522

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2017/03/02

DST Consulting Engineers Inc
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O.REG 153 PAHS (WATER)

Maxxam ID		DXZ752	DXZ753	DXZ754	DXZ755		
Sampling Date		2017/02/18 12:30	2017/02/18 14:30	2017/02/18 11:15	2017/02/18 13:30		
COC Number		598517-01-01	598517-01-01	598517-01-01	598517-01-01		
	UNITS	MW17-02	MW17-03	MW17-04	MW17-07	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	<0.071	<0.071	<0.071	<0.071	0.071	4870327

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B734576
Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

O.REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		DXZ752	DXZ752	DXZ753	DXZ754	DXZ755	DXZ756		
Sampling Date		2017/02/18 12:30	2017/02/18 12:30	2017/02/18 14:30	2017/02/18 11:15	2017/02/18 13:30	2017/02/18		
COC Number		598517-01-01	598517-01-01	598517-01-01	598517-01-01	598517-01-01	598517-01-01		
	UNITS	MW17-02	MW17-02 Lab-Dup	MW17-03	MW17-04	MW17-07	TRIP BLANK	RDL	QC Batch
BTEX & F1 Hydrocarbons									
F1 (C6-C10)	ug/L	<25		<25	<25	<25	<25	25	4870106
F1 (C6-C10) - BTEX	ug/L	<25		<25	<25	<25	<25	25	4870106
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	<100	<100	100	4871918
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	<200	200	4871918
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	<200	200	4871918
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	Yes	Yes		4871918
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	107		108	106	107	107		4870106
4-Bromofluorobenzene	%	101		100	101	100	101		4870106
D10-Ethylbenzene	%	118		110	120	113	119		4870106
D4-1,2-Dichloroethane	%	111		107	107	107	108		4870106
o-Terphenyl	%	103	98	101	99	100	100		4871918

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

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Maxxam Job #: B734576
Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

O.REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		DXZ757		
Sampling Date		2017/02/18		
COC Number		598517-01-01		
	UNITS	FIELD BLANK	RDL	QC Batch
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/L	<25	25	4870106
F1 (C6-C10) - BTEX	ug/L	<25	25	4870106
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	4871918
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	4871918
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	4871918
Reached Baseline at C50	ug/L	Yes		4871918
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	109		4870106
4-Bromofluorobenzene	%	100		4870106
D10-Ethylbenzene	%	97		4870106
D4-1,2-Dichloroethane	%	107		4870106
o-Terphenyl	%	101		4871918

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		DXZ752	DXZ753	DXZ753	DXZ754	DXZ755		
Sampling Date		2017/02/18 12:30	2017/02/18 14:30	2017/02/18 14:30	2017/02/18 11:15	2017/02/18 13:30		
COC Number		598517-01-01	598517-01-01	598517-01-01	598517-01-01	598517-01-01		
	UNITS	MW17-02	MW17-03	MW17-03 Lab-Dup	MW17-04	MW17-07	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	<0.50		<0.50	<0.50	0.50	4870226
Volatile Organics								
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	<10	10	4867776
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
Bromodichloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
Bromoform	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4867776
Bromomethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
Carbon Tetrachloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
Chlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
Chloroform	ug/L	<0.20	<0.20	<0.20	0.21	<0.20	0.20	4867776
Dibromochloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4867776
1,1-Dichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
1,2-Dichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
1,1-Dichloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
1,2-Dichloropropane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	4867776
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	4867776
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
Hexane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4867776
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4867776
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	<10	<10	<10	<10	10	4867776
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	4867776
Methyl t-butyl ether (MTBE)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
Styrene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
Tetrachloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776

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

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Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		DXZ752	DXZ753	DXZ753	DXZ754	DXZ755		
Sampling Date		2017/02/18 12:30	2017/02/18 14:30	2017/02/18 14:30	2017/02/18 11:15	2017/02/18 13:30		
COC Number		598517-01-01	598517-01-01	598517-01-01	598517-01-01	598517-01-01		
	UNITS	MW17-02	MW17-03	MW17-03 Lab-Dup	MW17-04	MW17-07	RDL	QC Batch
Toluene	ug/L	0.31	0.23	0.22	0.63	0.31	0.20	4867776
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
Trichloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4867776
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
p+m-Xylene	ug/L	0.29	0.25	0.24	0.47	0.30	0.20	4867776
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4867776
Total Xylenes	ug/L	0.29	0.25	0.24	0.47	0.30	0.20	4867776
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	95	95	95	94	94		4867776
D4-1,2-Dichloroethane	%	106	105	106	107	105		4867776
D8-Toluene	%	95	95	95	94	95		4867776

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

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O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		DXZ756	DXZ757		
Sampling Date		2017/02/18	2017/02/18		
COC Number		598517-01-01	598517-01-01		
	UNITS	FIELD BLANK	TRIP BLANK	RDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	<0.50	0.50	4870226
Volatile Organics					
Acetone (2-Propanone)	ug/L	<10	<10	10	4867776
Benzene	ug/L	<0.20	<0.20	0.20	4867776
Bromodichloromethane	ug/L	<0.50	<0.50	0.50	4867776
Bromoform	ug/L	<1.0	<1.0	1.0	4867776
Bromomethane	ug/L	<0.50	<0.50	0.50	4867776
Carbon Tetrachloride	ug/L	<0.20	<0.20	0.20	4867776
Chlorobenzene	ug/L	<0.20	<0.20	0.20	4867776
Chloroform	ug/L	<0.20	<0.20	0.20	4867776
Dibromochloromethane	ug/L	<0.50	<0.50	0.50	4867776
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	4867776
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	4867776
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	4867776
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	<1.0	1.0	4867776
1,1-Dichloroethane	ug/L	<0.20	<0.20	0.20	4867776
1,2-Dichloroethane	ug/L	<0.50	<0.50	0.50	4867776
1,1-Dichloroethylene	ug/L	<0.20	<0.20	0.20	4867776
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	0.50	4867776
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	0.50	4867776
1,2-Dichloropropane	ug/L	<0.20	<0.20	0.20	4867776
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	0.30	4867776
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	0.40	4867776
Ethylbenzene	ug/L	<0.20	<0.20	0.20	4867776
Ethylene Dibromide	ug/L	<0.20	<0.20	0.20	4867776
Hexane	ug/L	<1.0	<1.0	1.0	4867776
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	4867776
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	<10	10	4867776
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	5.0	4867776
Methyl t-butyl ether (MTBE)	ug/L	<0.50	<0.50	0.50	4867776
Styrene	ug/L	<0.50	<0.50	0.50	4867776
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	0.50	4867776
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	0.50	4867776
Tetrachloroethylene	ug/L	<0.20	<0.20	0.20	4867776
Toluene	ug/L	<0.20	<0.20	0.20	4867776

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B734576
Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		DXZ756	DXZ757		
Sampling Date		2017/02/18	2017/02/18		
COC Number		598517-01-01	598517-01-01		
	UNITS	FIELD BLANK	TRIP BLANK	RDL	QC Batch
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	0.20	4867776
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	0.50	4867776
Trichloroethylene	ug/L	<0.20	<0.20	0.20	4867776
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	<0.50	0.50	4867776
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	4867776
p+m-Xylene	ug/L	<0.20	<0.20	0.20	4867776
o-Xylene	ug/L	<0.20	<0.20	0.20	4867776
Total Xylenes	ug/L	<0.20	<0.20	0.20	4867776
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	95	94		4867776
D4-1,2-Dichloroethane	%	103	104		4867776
D8-Toluene	%	95	95		4867776

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B734576
Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

TEST SUMMARY

Maxxam ID: DXZ752
Sample ID: MW17-02
Matrix: Water

Collected: 2017/02/18
Shipped:
Received: 2017/02/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4870327	N/A	2017/03/02	Automated Statchk
1,3-Dichloropropene Sum	CALC	4870226	N/A	2017/02/27	Automated Statchk
Acid Extractables by GC/MS	GC/MS	4873493	2017/02/23	2017/02/23	May Yin Mak
Chromium (VI) in Water	IC	4874438	N/A	2017/02/23	Sally Coughlin
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4870106	N/A	2017/02/22	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4871918	2017/02/22	2017/02/22	Liliana Gaburici
Mercury	CV/AA	4875211	2017/02/24	2017/02/27	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	4872817	N/A	2017/02/24	Cristina Petran
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4881522	2017/03/01	2017/03/01	Lingyun Feng
Volatile Organic Compounds in Water	GC/MS	4867776	N/A	2017/02/24	Xueming Jiang

Maxxam ID: DXZ752 Dup
Sample ID: MW17-02
Matrix: Water

Collected: 2017/02/18
Shipped:
Received: 2017/02/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	4874438	N/A	2017/02/23	Sally Coughlin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4871918	2017/02/22	2017/02/22	Liliana Gaburici

Maxxam ID: DXZ753
Sample ID: MW17-03
Matrix: Water

Collected: 2017/02/18
Shipped:
Received: 2017/02/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4870327	N/A	2017/03/02	Automated Statchk
1,3-Dichloropropene Sum	CALC	4870226	N/A	2017/02/27	Automated Statchk
Acid Extractables by GC/MS	GC/MS	4873493	2017/02/23	2017/02/23	May Yin Mak
Chromium (VI) in Water	IC	4874438	N/A	2017/02/23	Sally Coughlin
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4870106	N/A	2017/02/22	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4871918	2017/02/22	2017/02/22	Liliana Gaburici
Mercury	CV/AA	4875211	2017/02/24	2017/02/27	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	4872817	N/A	2017/02/24	Cristina Petran
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4881522	2017/03/01	2017/03/01	Lingyun Feng
Volatile Organic Compounds in Water	GC/MS	4867776	N/A	2017/02/24	Xueming Jiang

Maxxam ID: DXZ753 Dup
Sample ID: MW17-03
Matrix: Water

Collected: 2017/02/18
Shipped:
Received: 2017/02/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds in Water	GC/MS	4867776	N/A	2017/02/24	Xueming Jiang

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Maxxam Job #: B734576
Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

TEST SUMMARY

Maxxam ID: DXZ754
Sample ID: MW17-04
Matrix: Water

Collected: 2017/02/18
Shipped:
Received: 2017/02/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4870327	N/A	2017/03/02	Automated Statchk
1,3-Dichloropropene Sum	CALC	4870226	N/A	2017/02/27	Automated Statchk
Acid Extractables by GC/MS	GC/MS	4873493	2017/02/23	2017/02/23	May Yin Mak
Chromium (VI) in Water	IC	4874438	N/A	2017/02/23	Sally Coughlin
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4870106	N/A	2017/02/22	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4871918	2017/02/22	2017/02/22	Liliana Gaburici
Mercury	CV/AA	4875211	2017/02/24	2017/02/27	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	4872817	N/A	2017/02/24	Cristina Petran
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4881522	2017/03/01	2017/03/01	Lingyun Feng
Volatile Organic Compounds in Water	GC/MS	4867776	N/A	2017/02/24	Xueming Jiang

Maxxam ID: DXZ755
Sample ID: MW17-07
Matrix: Water

Collected: 2017/02/18
Shipped:
Received: 2017/02/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4870327	N/A	2017/03/02	Automated Statchk
1,3-Dichloropropene Sum	CALC	4870226	N/A	2017/02/27	Automated Statchk
Chromium (VI) in Water	IC	4874438	N/A	2017/02/23	Sally Coughlin
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4870106	N/A	2017/02/22	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4871918	2017/02/22	2017/02/22	Liliana Gaburici
Mercury	CV/AA	4875211	2017/02/24	2017/02/27	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	4872817	N/A	2017/02/24	Cristina Petran
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4881522	2017/03/01	2017/03/02	Lingyun Feng
Volatile Organic Compounds in Water	GC/MS	4867776	N/A	2017/02/24	Xueming Jiang

Maxxam ID: DXZ756
Sample ID: TRIP BLANK
Matrix: Water

Collected: 2017/02/18
Shipped:
Received: 2017/02/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4870226	N/A	2017/02/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4870106	N/A	2017/02/22	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4871918	2017/02/22	2017/02/22	Liliana Gaburici
Volatile Organic Compounds in Water	GC/MS	4867776	N/A	2017/02/24	Xueming Jiang

Maxxam ID: DXZ757
Sample ID: FIELD BLANK
Matrix: Water

Collected: 2017/02/18
Shipped:
Received: 2017/02/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4870226	N/A	2017/02/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4870106	N/A	2017/02/22	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4871918	2017/02/22	2017/02/22	Liliana Gaburici
Volatile Organic Compounds in Water	GC/MS	4867776	N/A	2017/02/24	Xueming Jiang

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Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

GENERAL COMMENTS

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

Package 1	2.3°C

Cooler custody seal was present and intact.
The samples were received at the laboratory on the sampling date with ice in the cooler.

Sample DXZ754 [MW17-04] : Metal Analysis:Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4867776	4-Bromofluorobenzene	2017/02/24	100	70 - 130	100	70 - 130	97	%		
4867776	D4-1,2-Dichloroethane	2017/02/24	104	70 - 130	101	70 - 130	103	%		
4867776	D8-Toluene	2017/02/24	99	70 - 130	100	70 - 130	96	%		
4870106	1,4-Difluorobenzene	2017/02/22	104	70 - 130	107	70 - 130	108	%		
4870106	4-Bromofluorobenzene	2017/02/22	100	70 - 130	100	70 - 130	104	%		
4870106	D10-Ethylbenzene	2017/02/22	112	70 - 130	104	70 - 130	107	%		
4870106	D4-1,2-Dichloroethane	2017/02/22	107	70 - 130	106	70 - 130	109	%		
4871918	o-Terphenyl	2017/02/22	104	30 - 130	103	30 - 130	100	%		
4873493	2,4,6-Tribromophenol	2017/02/23	97	50 - 130	87	50 - 130	88	%		
4873493	2-Fluorophenol	2017/02/23	36 (1)	50 - 130	61	50 - 130	52	%		
4873493	D5-Phenol	2017/02/23	75	30 - 130	71	30 - 130	66	%		
4881522	D10-Anthracene	2017/03/01			93	50 - 130	111	%		
4881522	D14-Terphenyl (FS)	2017/03/01			95	50 - 130	115	%		
4881522	D8-Acenaphthylene	2017/03/01			101	50 - 130	94	%		
4867776	1,1,1,2-Tetrachloroethane	2017/02/24	115	70 - 130	103	70 - 130	<0.50	ug/L	NC	30
4867776	1,1,1-Trichloroethane	2017/02/24	104	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
4867776	1,1,2,2-Tetrachloroethane	2017/02/24	117	70 - 130	103	70 - 130	<0.50	ug/L	NC	30
4867776	1,1,2-Trichloroethane	2017/02/24	113	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
4867776	1,1-Dichloroethane	2017/02/24	105	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
4867776	1,1-Dichloroethylene	2017/02/24	106	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
4867776	1,2-Dichlorobenzene	2017/02/24	106	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
4867776	1,2-Dichloroethane	2017/02/24	108	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
4867776	1,2-Dichloropropane	2017/02/24	107	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
4867776	1,3-Dichlorobenzene	2017/02/24	104	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
4867776	1,4-Dichlorobenzene	2017/02/24	105	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
4867776	Acetone (2-Propanone)	2017/02/24	117	60 - 140	90	60 - 140	<10	ug/L	NC	30
4867776	Benzene	2017/02/24	106	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
4867776	Bromodichloromethane	2017/02/24	115	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
4867776	Bromoform	2017/02/24	125	70 - 130	109	70 - 130	<1.0	ug/L	NC	30
4867776	Bromomethane	2017/02/24	109	60 - 140	98	60 - 140	<0.50	ug/L	NC	30
4867776	Carbon Tetrachloride	2017/02/24	112	70 - 130	102	70 - 130	<0.20	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4867776	Chlorobenzene	2017/02/24	112	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
4867776	Chloroform	2017/02/24	107	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
4867776	cis-1,2-Dichloroethylene	2017/02/24	110	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
4867776	cis-1,3-Dichloropropene	2017/02/24	113	70 - 130	95	70 - 130	<0.30	ug/L	NC	30
4867776	Dibromochloromethane	2017/02/24	119	70 - 130	105	70 - 130	<0.50	ug/L	NC	30
4867776	Dichlorodifluoromethane (FREON 12)	2017/02/24	94	60 - 140	87	60 - 140	<1.0	ug/L	NC	30
4867776	Ethylbenzene	2017/02/24	105	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
4867776	Ethylene Dibromide	2017/02/24	117	70 - 130	101	70 - 130	<0.20	ug/L	NC	30
4867776	Hexane	2017/02/24	107	70 - 130	98	70 - 130	<1.0	ug/L	NC	30
4867776	Methyl Ethyl Ketone (2-Butanone)	2017/02/24	118	60 - 140	95	60 - 140	<10	ug/L	NC	30
4867776	Methyl Isobutyl Ketone	2017/02/24	115	70 - 130	98	70 - 130	<5.0	ug/L	NC	30
4867776	Methyl t-butyl ether (MTBE)	2017/02/24	104	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
4867776	Methylene Chloride(Dichloromethane)	2017/02/24	113	70 - 130	98	70 - 130	<2.0	ug/L	NC	30
4867776	o-Xylene	2017/02/24	100	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
4867776	p+m-Xylene	2017/02/24	103	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
4867776	Styrene	2017/02/24	107	70 - 130	99	70 - 130	<0.50	ug/L	NC	30
4867776	Tetrachloroethylene	2017/02/24	105	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
4867776	Toluene	2017/02/24	103	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
4867776	Total Xylenes	2017/02/24					<0.20	ug/L	NC	30
4867776	trans-1,2-Dichloroethylene	2017/02/24	105	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
4867776	trans-1,3-Dichloropropene	2017/02/24	117	70 - 130	94	70 - 130	<0.40	ug/L	NC	30
4867776	Trichloroethylene	2017/02/24	105	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
4867776	Trichlorofluoromethane (FREON 11)	2017/02/24	110	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
4867776	Vinyl Chloride	2017/02/24	108	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
4870106	F1 (C6-C10) - BTEX	2017/02/22					<25	ug/L	NC	40
4870106	F1 (C6-C10)	2017/02/22	90	70 - 130	97	70 - 130	<25	ug/L	NC	40
4871918	F2 (C10-C16 Hydrocarbons)	2017/02/22	97	50 - 130	97	80 - 120	<100	ug/L	NC	50
4871918	F3 (C16-C34 Hydrocarbons)	2017/02/22	97	50 - 130	97	80 - 120	<200	ug/L	NC	50
4871918	F4 (C34-C50 Hydrocarbons)	2017/02/22	97	50 - 130	97	80 - 120	<200	ug/L	NC	50
4872817	Dissolved Antimony (Sb)	2017/02/24	110	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
4872817	Dissolved Arsenic (As)	2017/02/24	104	80 - 120	100	80 - 120	<1.0	ug/L	NC	20

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QUALITY ASSURANCE REPORT(CONT'D)

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4872817	Dissolved Barium (Ba)	2017/02/24	102	80 - 120	98	80 - 120	<2.0	ug/L	4.8	20
4872817	Dissolved Beryllium (Be)	2017/02/24	108	80 - 120	102	80 - 120	<0.50	ug/L	NC	20
4872817	Dissolved Boron (B)	2017/02/24	107	80 - 120	102	80 - 120	<10	ug/L	NC	20
4872817	Dissolved Cadmium (Cd)	2017/02/24	103	80 - 120	96	80 - 120	<0.10	ug/L	NC	20
4872817	Dissolved Chromium (Cr)	2017/02/24	102	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
4872817	Dissolved Cobalt (Co)	2017/02/24	100	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
4872817	Dissolved Copper (Cu)	2017/02/24	103	80 - 120	97	80 - 120	<1.0	ug/L	NC	20
4872817	Dissolved Lead (Pb)	2017/02/24	97	80 - 120	95	80 - 120	<0.50	ug/L	NC	20
4872817	Dissolved Molybdenum (Mo)	2017/02/24	109	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
4872817	Dissolved Nickel (Ni)	2017/02/24	100	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
4872817	Dissolved Selenium (Se)	2017/02/24	104	80 - 120	98	80 - 120	<2.0	ug/L	NC	20
4872817	Dissolved Silver (Ag)	2017/02/24	99	80 - 120	95	80 - 120	<0.10	ug/L	NC	20
4872817	Dissolved Sodium (Na)	2017/02/24	NC	80 - 120	100	80 - 120	<100	ug/L		
4872817	Dissolved Thallium (Tl)	2017/02/24	96	80 - 120	95	80 - 120	<0.050	ug/L	NC	20
4872817	Dissolved Uranium (U)	2017/02/24	103	80 - 120	98	80 - 120	<0.10	ug/L	1.6	20
4872817	Dissolved Vanadium (V)	2017/02/24	102	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
4872817	Dissolved Zinc (Zn)	2017/02/24	100	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
4873493	2,3,4,5-Tetrachlorophenol	2017/02/23	93	10 - 130	95	10 - 130	<0.1	ug/L	NC	40
4873493	2,3,4,6-Tetrachlorophenol	2017/02/23	91	10 - 130	94	10 - 130	<0.1	ug/L	NC	40
4873493	2,3,4-Trichlorophenol	2017/02/23	87	10 - 130	91	10 - 130	<0.1	ug/L	NC	40
4873493	2,3,5,6-Tetrachlorophenol	2017/02/23	112	10 - 130	100	10 - 130	<0.1	ug/L	NC	40
4873493	2,3,5-Trichlorophenol	2017/02/23	79	10 - 130	84	10 - 130	<0.1	ug/L	NC	40
4873493	2,3,6-Trichlorophenol	2017/02/23	92	30 - 130	91	30 - 130	<0.1	ug/L	NC	40
4873493	2,3-Dichlorophenol	2017/02/23	100	10 - 130	95	10 - 130	<0.1	ug/L	NC	40
4873493	2,4,5-Trichlorophenol	2017/02/23	63	50 - 130	86	50 - 130	<0.1	ug/L	NC	30
4873493	2,4,6-Trichlorophenol	2017/02/23	93	10 - 130	93	10 - 130	<0.1	ug/L	NC	30
4873493	2,4-Dichlorophenol	2017/02/23	93	50 - 130	95	50 - 130	<0.1	ug/L	NC	30
4873493	2,4-Dimethylphenol	2017/02/23	81	30 - 130	96	30 - 130	<1	ug/L	2.7	30
4873493	2,4-Dinitrophenol	2017/02/23	80	30 - 130	67	30 - 130	<1	ug/L	NC	30
4873493	2,5-Dichlorophenol	2017/02/23	99	10 - 130	95	10 - 130	<0.1	ug/L	NC	40
4873493	2,6-Dichlorophenol	2017/02/23	79	10 - 130	90	10 - 130	<0.1	ug/L	NC	40

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Maxxam Job #: B734576
Report Date: 2017/03/02

QUALITY ASSURANCE REPORT(CONT'D)

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4873493	2-Chlorophenol	2017/02/23	47 (2)	50 - 130	79	50 - 130	<0.1	ug/L	NC	30
4873493	2-Nitrophenol	2017/02/23	85	10 - 130	89	10 - 130	<1	ug/L	NC	40
4873493	3 & 4-Chlorophenol	2017/02/23	55	10 - 130	97	10 - 130	<0.1	ug/L	NC	40
4873493	3,4,5-Trichlorophenol	2017/02/23	80	10 - 130	78	10 - 130	<0.1	ug/L	NC	40
4873493	3,4-Dichlorophenol	2017/02/23	42	10 - 130	76	10 - 130	<0.1	ug/L	NC	40
4873493	3,5-Dichlorophenol	2017/02/23	63	10 - 130	88	10 - 130	<0.1	ug/L	NC	40
4873493	4,6-Dinitro-2-methylphenol	2017/02/23	98	10 - 130	76	10 - 130	<1	ug/L	NC	40
4873493	4-Chloro-3-Methylphenol	2017/02/23	120	10 - 130	103	10 - 130	<0.1	ug/L	NC	40
4873493	4-Nitrophenol	2017/02/23	80	10 - 130	88	10 - 130	<1	ug/L	NC	40
4873493	m/p-Cresol	2017/02/23	93	10 - 130	101	10 - 130	<0.5	ug/L	2.5	40
4873493	o-Cresol	2017/02/23	97	10 - 130	96	10 - 130	<0.5	ug/L	0.33	40
4873493	Pentachlorophenol	2017/02/23	88	50 - 130	85	50 - 130	<0.1	ug/L	NC	30
4873493	Phenol	2017/02/23	82	30 - 130	79	30 - 130	<0.5	ug/L	3.0	30
4874438	Chromium (VI)	2017/02/23	100	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
4875211	Mercury (Hg)	2017/02/27	112	75 - 125	102	80 - 120	<0.1	ug/L	NC	20
4881522	1-Methylnaphthalene	2017/03/01			95	50 - 130	<0.050	ug/L	3.5	30
4881522	2-Methylnaphthalene	2017/03/01			87	50 - 130	<0.050	ug/L	2.6	30
4881522	Acenaphthene	2017/03/01			88	50 - 130	<0.050	ug/L	7.0	30
4881522	Acenaphthylene	2017/03/01			99	50 - 130	<0.050	ug/L	4.6	30
4881522	Anthracene	2017/03/01			82	50 - 130	<0.050	ug/L	9.5	30
4881522	Benzo(a)anthracene	2017/03/01			93	50 - 130	<0.050	ug/L	7.9	30
4881522	Benzo(a)pyrene	2017/03/01			89	50 - 130	<0.010	ug/L	4.4	30
4881522	Benzo(b/j)fluoranthene	2017/03/01			89	50 - 130	<0.050	ug/L	3.4	30
4881522	Benzo(g,h,i)perylene	2017/03/01			81	50 - 130	<0.050	ug/L	4.8	30
4881522	Benzo(k)fluoranthene	2017/03/01			83	50 - 130	<0.050	ug/L	5.6	30
4881522	Biphenyl	2017/03/01			94	50 - 130	<0.050	ug/L	4.2	30
4881522	Chrysene	2017/03/01			87	50 - 130	<0.050	ug/L	8.6	30
4881522	Dibenz(a,h)anthracene	2017/03/01			83	50 - 130	<0.050	ug/L	4.7	30
4881522	Fluoranthene	2017/03/01			98	50 - 130	<0.050	ug/L	12	30
4881522	Fluorene	2017/03/01			88	50 - 130	<0.050	ug/L	4.6	30
4881522	Indeno(1,2,3-cd)pyrene	2017/03/01			91	50 - 130	<0.050	ug/L	4.6	30

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Maxxam Job #: B734576
Report Date: 2017/03/02

QUALITY ASSURANCE REPORT(CONT'D)

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4881522	Naphthalene	2017/03/01			84	50 - 130	<0.050	ug/L	3.1	30
4881522	Phenanthrene	2017/03/01			86	50 - 130	<0.030	ug/L	8.3	30
4881522	Pyrene	2017/03/01			99	50 - 130	<0.050	ug/L	11	30

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).

(1) Surrogate recovery was below the lower control limit due to matrix interference. This may represent a lower bias in some results.

(2) The recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.

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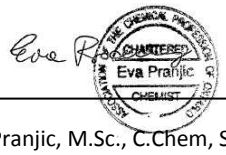
Maxxam Job #: B734576
Report Date: 2017/03/02

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Sampler Initials: KS

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

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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Maxxam
A Bureau Veritas Group Company

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

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:

Company Name: #3824 DST Consulting Engineers Inc
Attention: Accounts Payable
Address: 2150 Thurston Dr Unit 203
Ottawa ON K1G 5T9
Tel: (613) 748-1415 x Fax: (613) 748-1356 x
Email: ap@dstgroup.com

REPORT TO:

Company Name:
Attention: Ginger Rogers
Address:
Tel: Fax:
Email: grogers@dstgroup.com

PROJECT INFORMATION:

Quotation #: B61802
P.O. #:
Project: 6V50-02 7667
Project Name:
Site #:
Sampled By: KS

Laboratory Use Only:

Maxxam Job #:
Bottle Order #: 598517
COC #: C#598517-01-01
Project Manager: Madison Bingley

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)

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 Metals Package (Water)	Acid Extractables by GC/MS	O.Reg 153 VOCs & F1-F4 (Water)	O.Reg 153 PAHs (Water)	# of Bottles	Comments
1		mw17-02	2/18/17	12:30	GW	yes	X	X	X	X	14	2 coolers
2		mw17-03	"	2:30	"	"	X	X	X	X	14	"
3		mw17-04	"	11:15	"	"	X	X	X	X	14	
4		mw17-07	"	1:30	"	"	X	X	X	X	12	
5		Trip blank	"						X			
6		Field Blank	"		DIW				X			
7												RECEIVED IN OTTAWA
8												
9												ON Ice
10												

21-Feb-17 09:30
Madison Bingley
B734576
KJY OTT-001

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Kelly St. Denis Kelly St. Denis	17/02/16	4:40 pm	Karmi Jayaseelan KJ	2017/02/21	9.30	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	2 | 1 | 4	Present	X	
		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

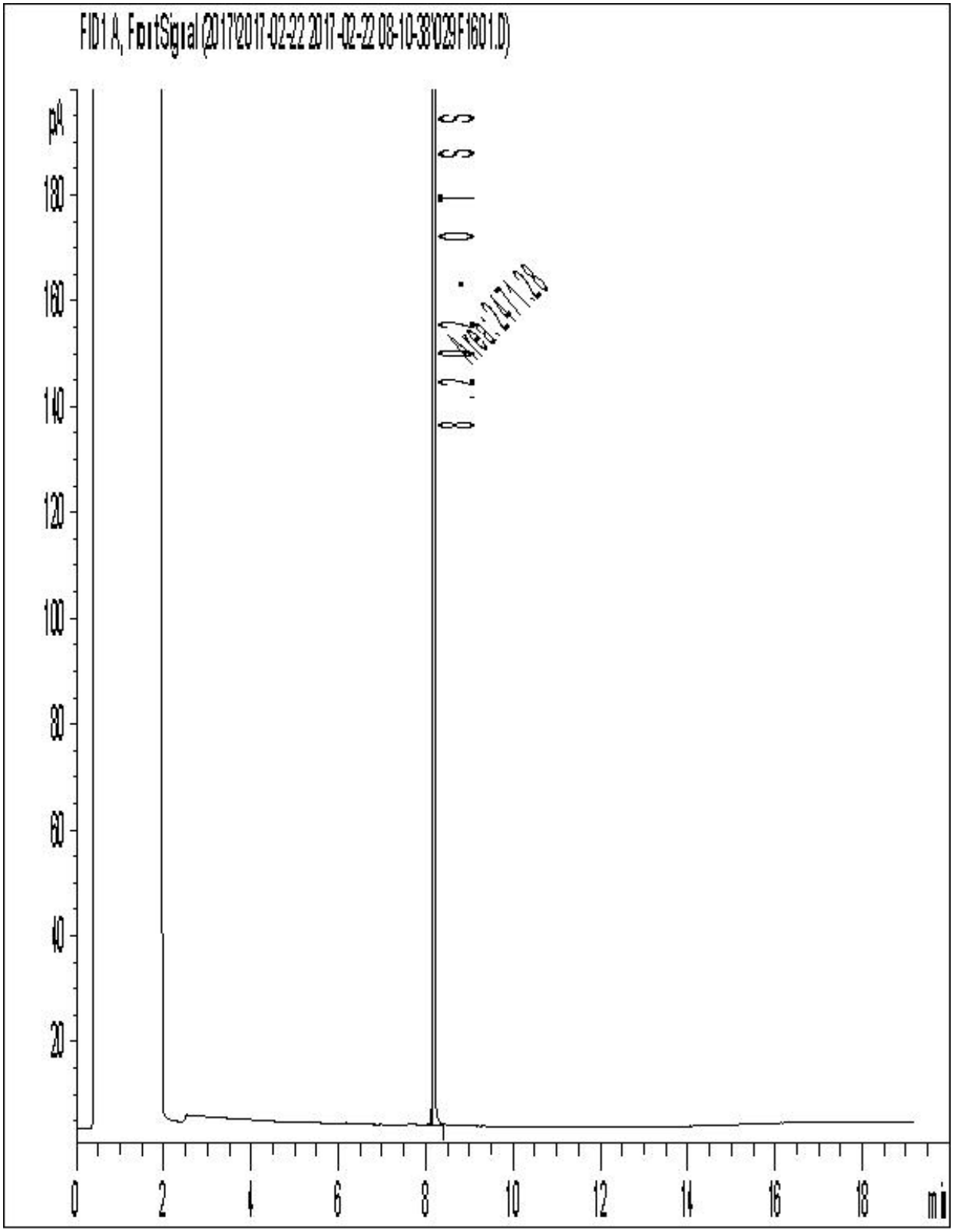
2, 1, 2

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam Job #: B734576
Report Date: 2017/03/02
Maxxam Sample: DXZ752

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Client ID: MW17-02

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

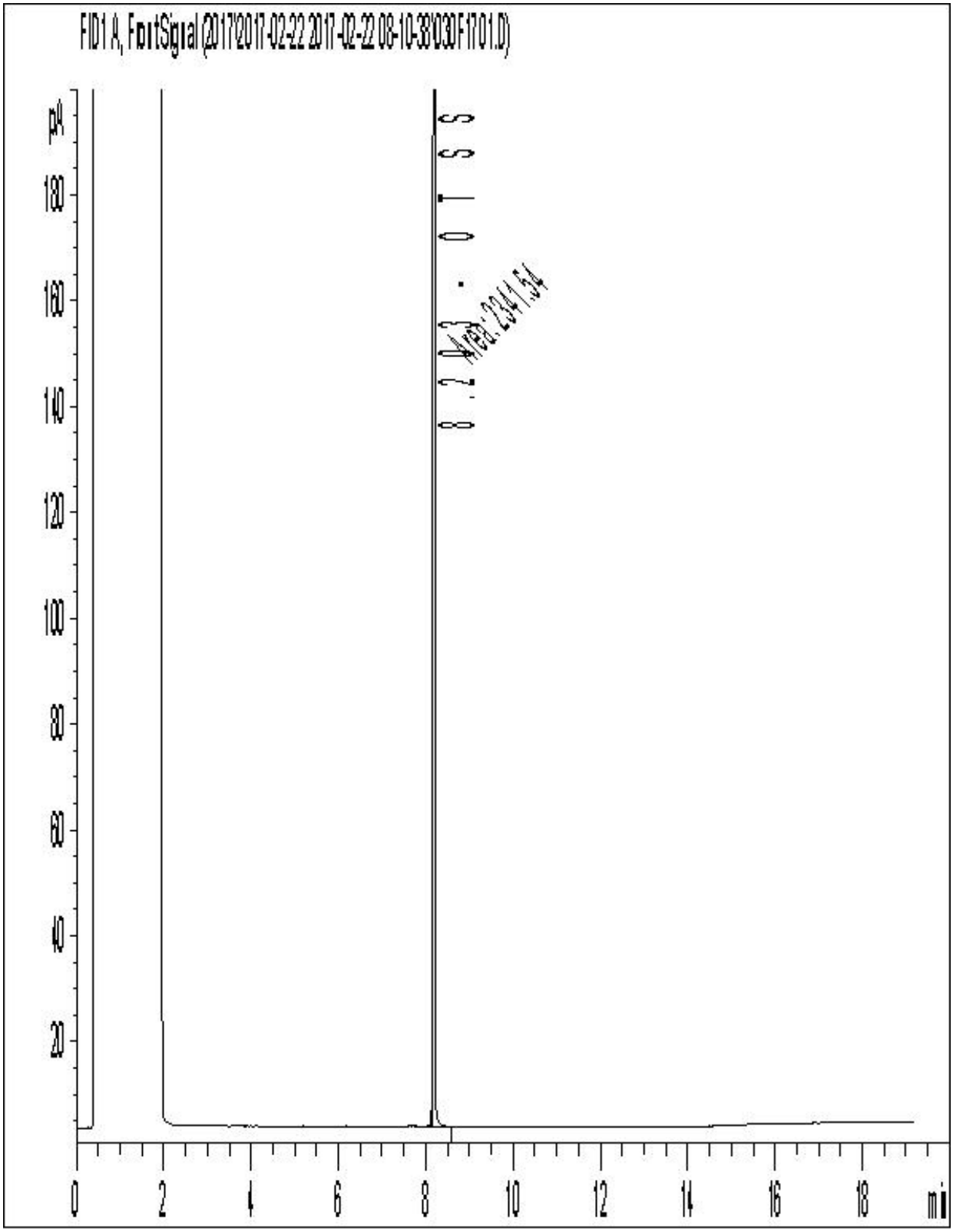


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B734576
Report Date: 2017/03/02
Maxxam Sample: DXZ752 Lab-Dup

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Client ID: MW17-02

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

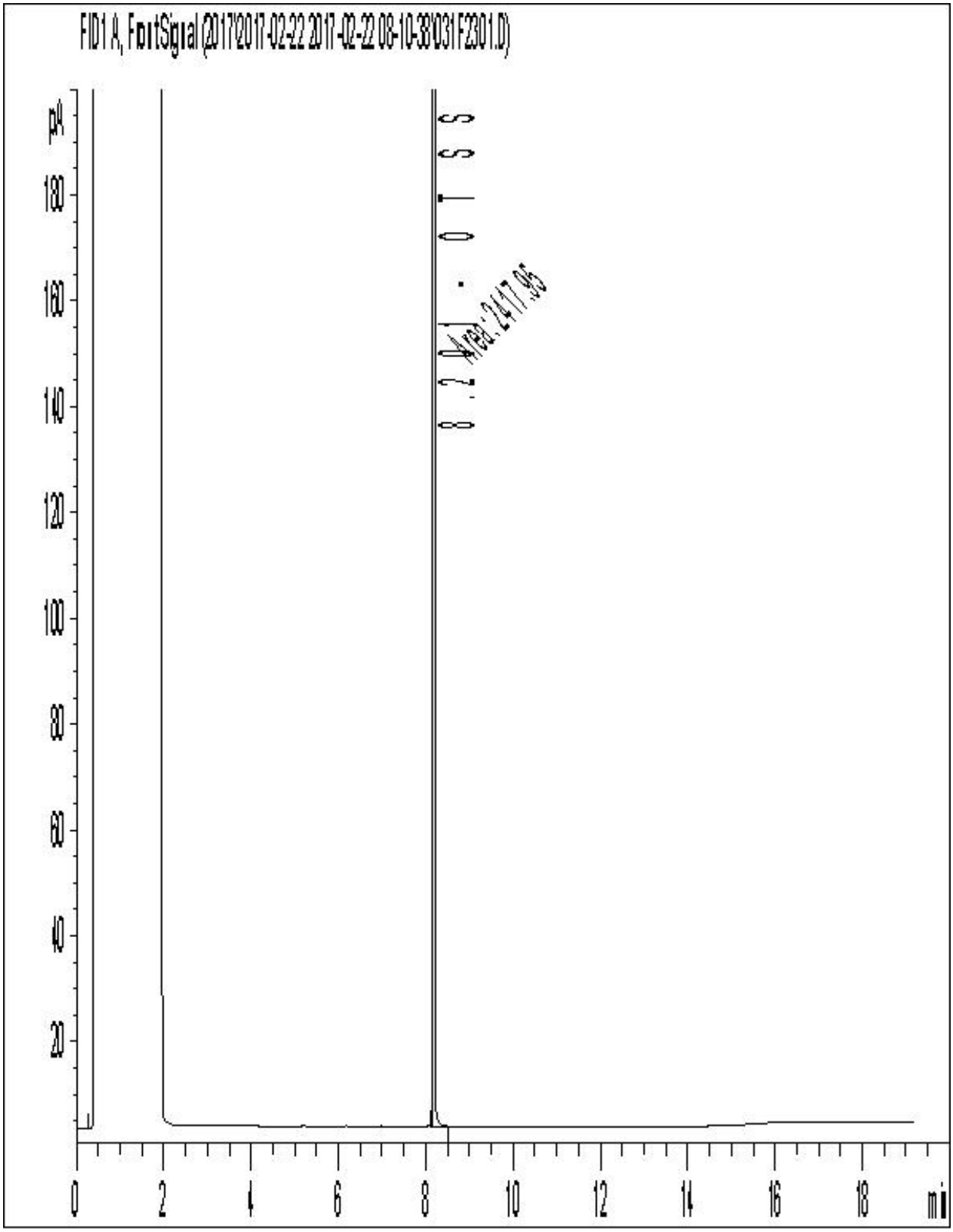


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B734576
Report Date: 2017/03/02
Maxxam Sample: DXZ753

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Client ID: MW17-03

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

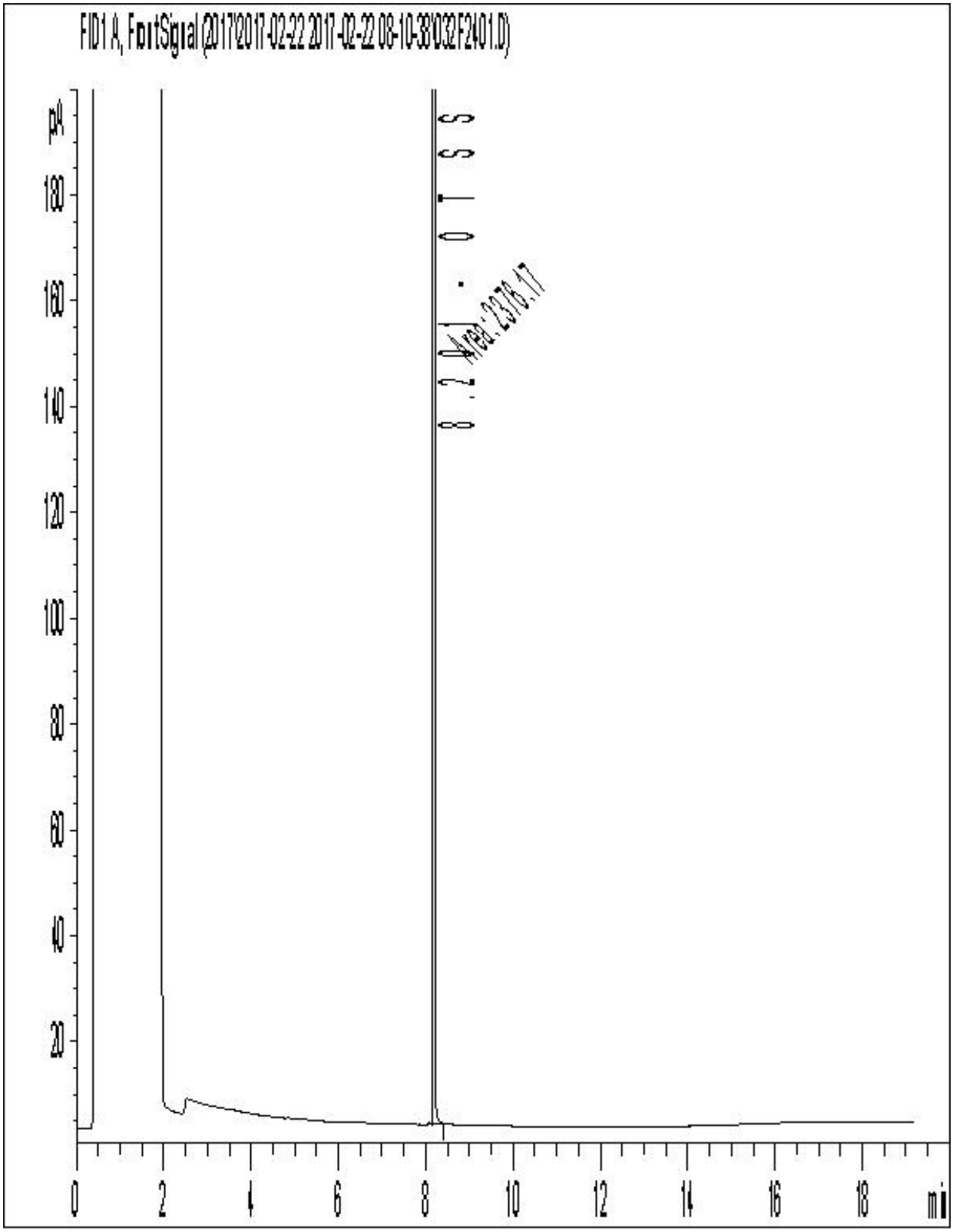


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B734576
Report Date: 2017/03/02
Maxxam Sample: DXZ754

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Client ID: MW17-04

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

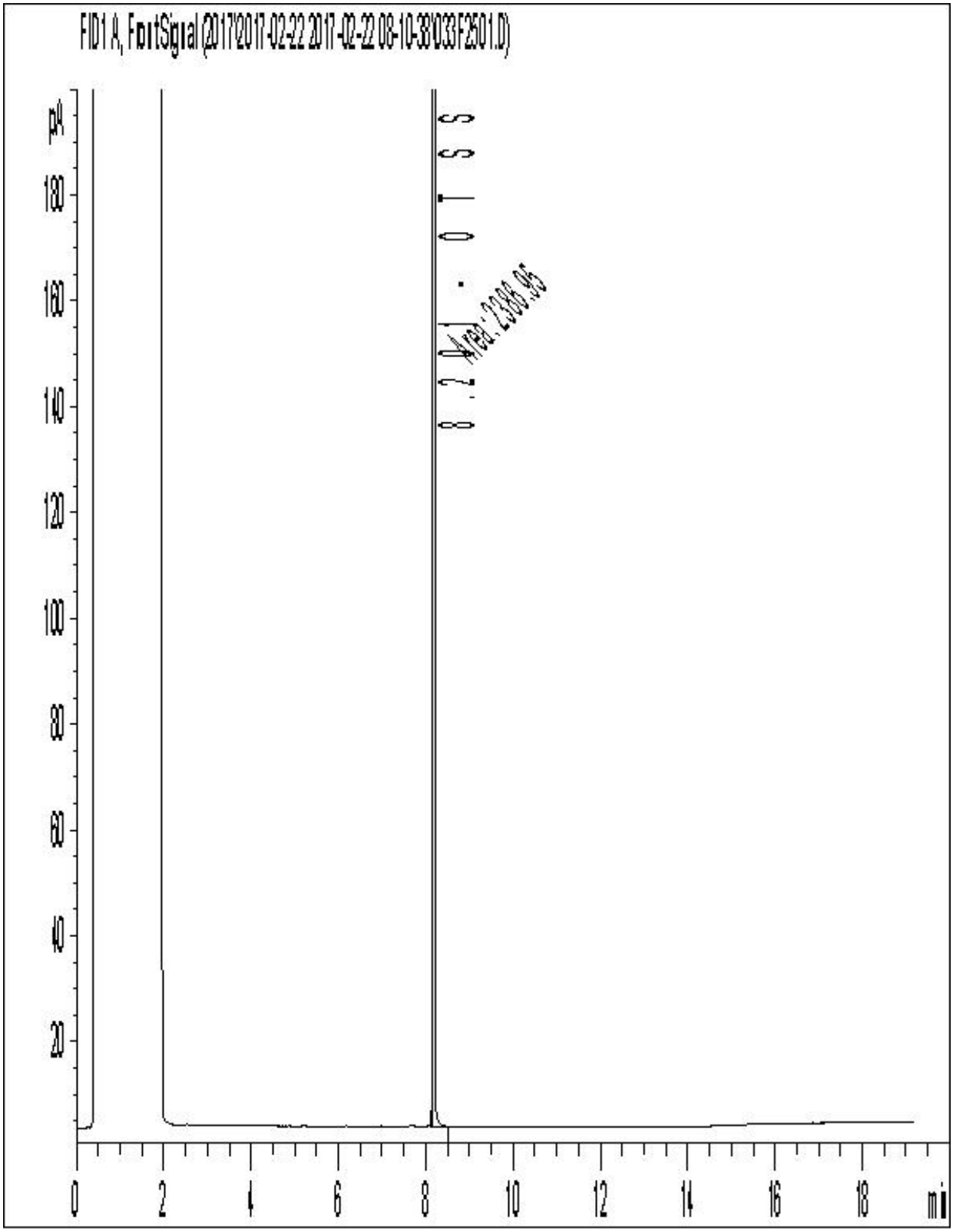


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B734576
Report Date: 2017/03/02
Maxxam Sample: DXZ755

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Client ID: MW17-07

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

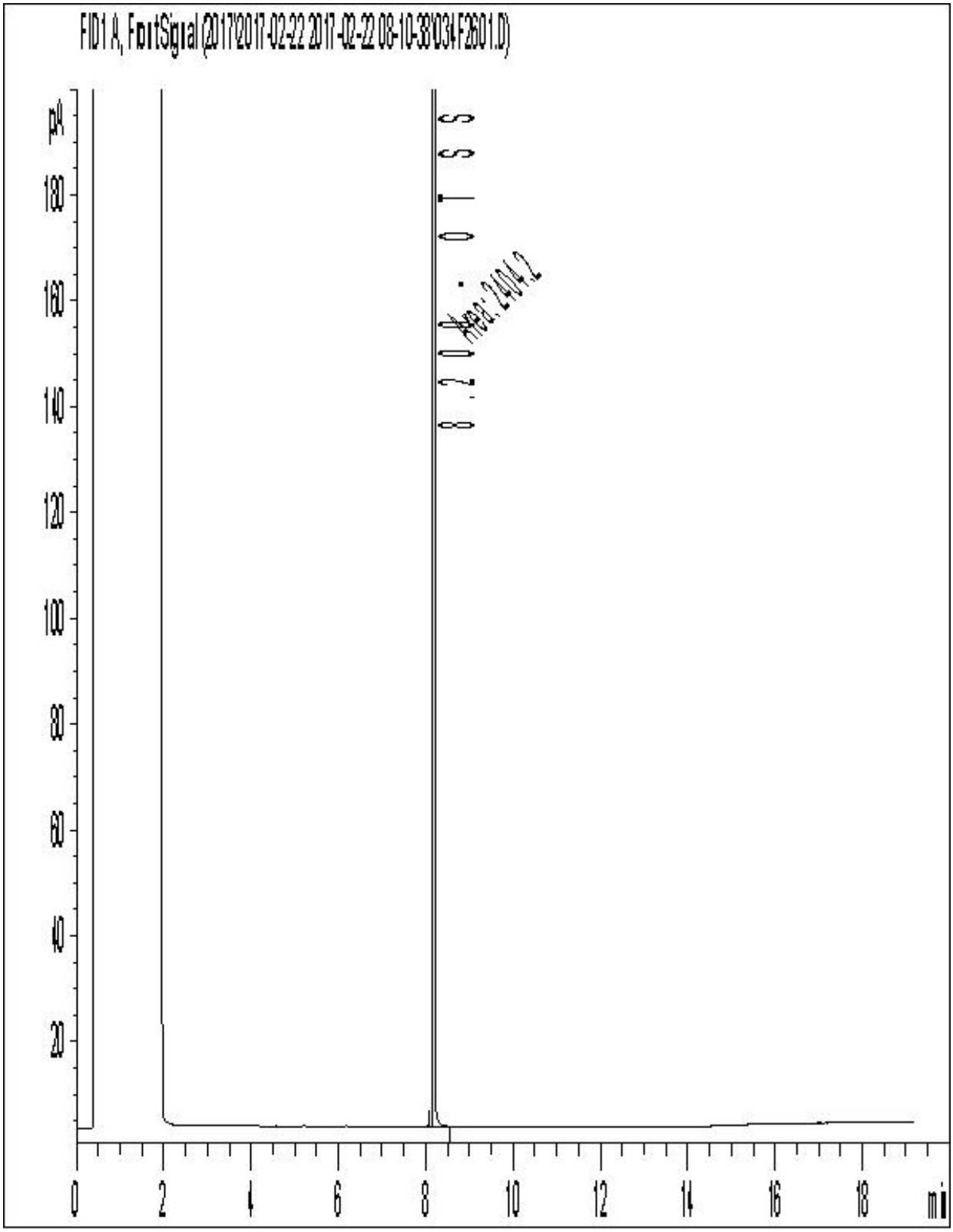


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B734576
Report Date: 2017/03/02
Maxxam Sample: DXZ756

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Client ID: TRIP BLANK

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

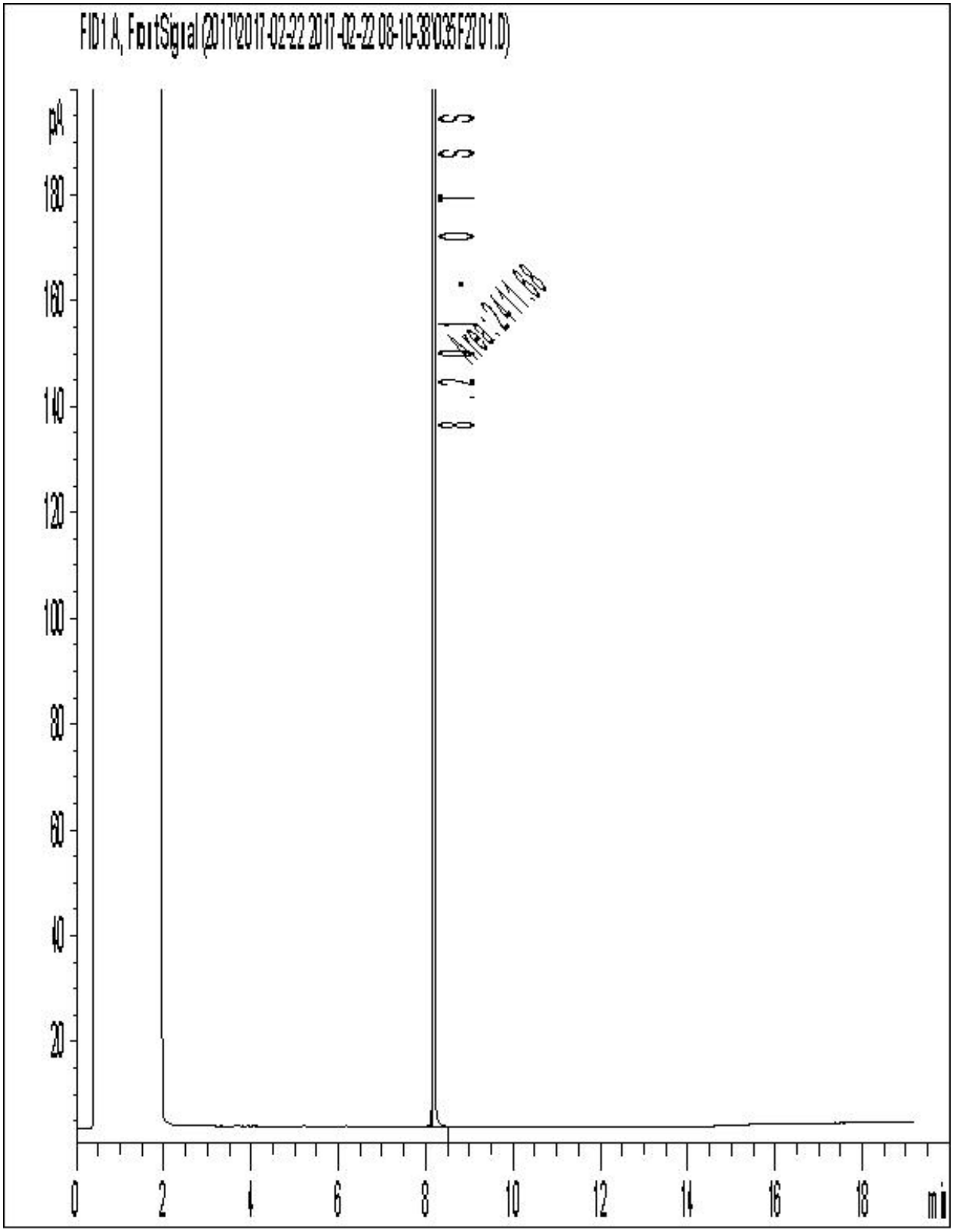


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B734576
Report Date: 2017/03/02
Maxxam Sample: DXZ757

DST Consulting Engineers Inc
Client Project #: GVSO-027667
Client ID: FIELD BLANK

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.

Your P.O. #: 45064626
Your C.O.C. #: 64307

Attention:Ginger Rogers

DST Consulting
ON
Canada

Report Date: 2017/03/06
Report #: R4382542
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B740104
Received: 2017/02/27, 15:14

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	1	N/A	2017/03/02	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum (1)	1	N/A	2017/03/03		EPA 8260C m
Acid Extractables by GC/MS (1)	1	2017/03/02	2017/03/03	CAM SOP-00332	EPA 8270 m
Chromium (VI) in Water (1)	1	N/A	2017/03/02	CAM SOP-00436	EPA 7199 m
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	1	2017/03/02	2017/03/03	CAM SOP-00316	CCME PHC-CWS m
Mercury (1)	1	2017/03/06	2017/03/06	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS (1)	1	N/A	2017/03/03	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM) (1)	1	2017/03/01	2017/03/02	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs (1)	1	N/A	2017/03/02	CAM SOP-00230	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.

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Your P.O. #: 45064626
Your C.O.C. #: 64307

Attention:Ginger Rogers

DST Consulting
ON
Canada

Report Date: 2017/03/06
Report #: R4382542
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B740104
Received: 2017/02/27, 15:14

(1) This test was performed by Maxxam Analytics Mississauga
(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.
Madison Bingley, Project Manager
Email: MBingley@maxxam.ca
Phone# (613)274-3549

==========

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 #: B740104
Report Date: 2017/03/06

DST Consulting
Your P.O. #: 45064626

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		DZA948		
Sampling Date		2017/02/27 14:15		
COC Number		64307		
	UNITS	MW17-01	RDL	QC Batch
2-Chlorophenol	ug/L	ND	0.5	4884121
2,3,4,6-Tetrachlorophenol	ug/L	ND	0.5	4884121
2,3,5-Trichlorophenol	ug/L	ND	0.5	4884121
2,4-Dichlorophenol	ug/L	ND	0.5	4884121
2,4-Dimethylphenol	ug/L	ND	5	4884121
2,4,6-Trichlorophenol	ug/L	ND	0.5	4884121
2,6-Dichlorophenol	ug/L	ND	0.5	4884121
4-Chloro-3-Methylphenol	ug/L	ND	0.5	4884121
4-Nitrophenol	ug/L	ND	5	4884121
m/p-Cresol	ug/L	ND	2.5	4884121
o-Cresol	ug/L	ND	2.5	4884121
Pentachlorophenol	ug/L	ND	0.5	4884121
Phenol	ug/L	ND	2.5	4884121
2,3,4,5-Tetrachlorophenol	ug/L	ND	0.5	4884121
2,3,5,6-Tetrachlorophenol	ug/L	ND	0.5	4884121
2,3,4-Trichlorophenol	ug/L	ND	0.5	4884121
2,3,6-Trichlorophenol	ug/L	ND	0.5	4884121
2,4,5-Trichlorophenol	ug/L	ND	0.5	4884121
3,4,5-Trichlorophenol	ug/L	ND	0.5	4884121
2,4-Dinitrophenol	ug/L	ND	5	4884121
2,3-Dichlorophenol	ug/L	ND	0.5	4884121
2,5-Dichlorophenol	ug/L	ND	0.5	4884121
3,4-Dichlorophenol	ug/L	ND	0.5	4884121
3,5-Dichlorophenol	ug/L	ND	0.5	4884121
4,6-Dinitro-2-methylphenol	ug/L	ND	5	4884121
3 & 4-Chlorophenol	ug/L	ND	0.5	4884121
2-Nitrophenol	ug/L	ND	5	4884121
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	98		4884121
2-Fluorophenol	%	92		4884121
D5-Phenol	%	59		4884121

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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 #: B740104
Report Date: 2017/03/06

DST Consulting
Your P.O. #: 45064626

O.REG 153 METALS PACKAGE (WATER)

Maxxam ID		DZA948		
Sampling Date		2017/02/27 14:15		
COC Number		64307		
	UNITS	**MW17-01**	**RDL**	**QC Batch**
Chromium (VI)	ug/L	5.7	0.50	4883671
Mercury (Hg)	ug/L	ND	0.1	4887087
Dissolved Antimony (Sb)	ug/L	1.9	0.50	4883527
Dissolved Arsenic (As)	ug/L	ND	1.0	4883527
Dissolved Barium (Ba)	ug/L	290	2.0	4883527
Dissolved Beryllium (Be)	ug/L	ND	0.50	4883527
Dissolved Boron (B)	ug/L	47	10	4883527
Dissolved Cadmium (Cd)	ug/L	ND	0.10	4883527
Dissolved Chromium (Cr)	ug/L	6.3	5.0	4883527
Dissolved Cobalt (Co)	ug/L	ND (1)	1.0	4883527
Dissolved Copper (Cu)	ug/L	2.2	1.0	4883527
Dissolved Lead (Pb)	ug/L	ND	0.50	4883527
Dissolved Molybdenum (Mo)	ug/L	2.3	0.50	4883527
Dissolved Nickel (Ni)	ug/L	4.5	2.0	4883527
Dissolved Selenium (Se)	ug/L	ND	2.0	4883527
Dissolved Silver (Ag)	ug/L	ND	0.10	4883527
Dissolved Sodium (Na)	ug/L	910000	500	4883527
Dissolved Thallium (Tl)	ug/L	0.063	0.050	4883527
Dissolved Uranium (U)	ug/L	2.3	0.10	4883527
Dissolved Vanadium (V)	ug/L	ND (1)	2.5	4883527
Dissolved Zinc (Zn)	ug/L	13	5.0	4883527

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected
(1) Metal Analysis:Detection Limit was raised due to matrix interferences.

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Maxxam Job #: B740104
Report Date: 2017/03/06

DST Consulting
Your P.O. #: 45064626

O.REG 153 PAHS (WATER)

Maxxam ID		DZA948		
Sampling Date		2017/02/27 14:15		
COC Number		64307		
	UNITS	MW17-01	RDL	QC Batch
Methylnaphthalene, 2-(1-)	ug/L	ND	0.071	4879750
Biphenyl	ug/L	ND	0.050	4882937
Acenaphthene	ug/L	ND	0.050	4882937
Acenaphthylene	ug/L	ND	0.050	4882937
Anthracene	ug/L	ND	0.050	4882937
Benzo(a)anthracene	ug/L	ND	0.050	4882937
Benzo(a)pyrene	ug/L	ND	0.010	4882937
Benzo(b/j)fluoranthene	ug/L	ND	0.050	4882937
Benzo(g,h,i)perylene	ug/L	ND	0.050	4882937
Benzo(k)fluoranthene	ug/L	ND	0.050	4882937
Chrysene	ug/L	ND	0.050	4882937
Dibenz(a,h)anthracene	ug/L	ND	0.050	4882937
Fluoranthene	ug/L	ND	0.050	4882937
Fluorene	ug/L	ND	0.050	4882937
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.050	4882937
1-Methylnaphthalene	ug/L	ND	0.050	4882937
2-Methylnaphthalene	ug/L	ND	0.050	4882937
Naphthalene	ug/L	ND	0.050	4882937
Phenanthrene	ug/L	ND	0.030	4882937
Pyrene	ug/L	ND	0.050	4882937
Surrogate Recovery (%)				
D10-Anthracene	%	98		4882937
D14-Terphenyl (FS)	%	90		4882937
D8-Acenaphthylene	%	98		4882937

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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O.REG 153 VOCS & F1-F4 (WATER)

Maxxam ID		DZA948		
Sampling Date		2017/02/27 14:15		
COC Number		64307		
	UNITS	MW17-01	RDL	QC Batch
1,3-Dichloropropene (cis+trans)	ug/L	ND	0.50	4881084
Acetone (2-Propanone)	ug/L	ND	10	4883216
Benzene	ug/L	ND	0.20	4883216
Bromodichloromethane	ug/L	ND	0.50	4883216
Bromoform	ug/L	ND	1.0	4883216
Bromomethane	ug/L	ND	0.50	4883216
Carbon Tetrachloride	ug/L	ND	0.20	4883216
Chlorobenzene	ug/L	ND	0.20	4883216
Chloroform	ug/L	ND	0.20	4883216
Dibromochloromethane	ug/L	ND	0.50	4883216
1,2-Dichlorobenzene	ug/L	ND	0.50	4883216
1,3-Dichlorobenzene	ug/L	ND	0.50	4883216
1,4-Dichlorobenzene	ug/L	ND	0.50	4883216
Dichlorodifluoromethane (FREON 12)	ug/L	ND	1.0	4883216
1,1-Dichloroethane	ug/L	ND	0.20	4883216
1,2-Dichloroethane	ug/L	ND	0.50	4883216
1,1-Dichloroethylene	ug/L	ND	0.20	4883216
cis-1,2-Dichloroethylene	ug/L	ND	0.50	4883216
trans-1,2-Dichloroethylene	ug/L	ND	0.50	4883216
1,2-Dichloropropane	ug/L	ND	0.20	4883216
cis-1,3-Dichloropropene	ug/L	ND	0.30	4883216
trans-1,3-Dichloropropene	ug/L	ND	0.40	4883216
Ethylbenzene	ug/L	0.23	0.20	4883216
Ethylene Dibromide	ug/L	ND	0.20	4883216
Hexane	ug/L	ND	1.0	4883216
Methylene Chloride(Dichloromethane)	ug/L	ND	2.0	4883216
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	10	4883216
Methyl Isobutyl Ketone	ug/L	ND	5.0	4883216
Methyl t-butyl ether (MTBE)	ug/L	ND	0.50	4883216
Styrene	ug/L	ND	0.50	4883216
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	4883216
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	4883216
Tetrachloroethylene	ug/L	ND	0.20	4883216
Toluene	ug/L	ND	0.20	4883216
1,1,1-Trichloroethane	ug/L	ND	0.20	4883216

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B740104
Report Date: 2017/03/06

DST Consulting
Your P.O. #: 45064626

O.REG 153 VOCS & F1-F4 (WATER)

Maxxam ID		DZA948		
Sampling Date		2017/02/27 14:15		
COC Number		64307		
	UNITS	MW17-01	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	ND	0.50	4883216
Trichloroethylene	ug/L	ND	0.20	4883216
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.50	4883216
Vinyl Chloride	ug/L	ND	0.20	4883216
p+m-Xylene	ug/L	ND	0.20	4883216
o-Xylene	ug/L	0.69	0.20	4883216
Total Xylenes	ug/L	0.69	0.20	4883216
F1 (C6-C10)	ug/L	ND	25	4883216
F1 (C6-C10) - BTEX	ug/L	ND	25	4883216
F2 (C10-C16 Hydrocarbons)	ug/L	ND	100	4884116
F3 (C16-C34 Hydrocarbons)	ug/L	ND	200	4884116
F4 (C34-C50 Hydrocarbons)	ug/L	ND	200	4884116
Reached Baseline at C50	ug/L	Yes		4884116
Surrogate Recovery (%)				
o-Terphenyl	%	100		4884116
4-Bromofluorobenzene	%	98		4883216
D4-1,2-Dichloroethane	%	103		4883216
D8-Toluene	%	97		4883216

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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GENERAL COMMENTS

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

Package 1	7.0°C

All samples (except for DISM, HGHC, LR) were received with Trace Settled Sediment (just covers bottom of container or less).

Sample DZA948 [MW17-01] : CPH Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

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
4882937	JET	Matrix Spike	Biphenyl	2017/03/02		78	%	50 - 130
			D10-Anthracene	2017/03/02		103	%	50 - 130
			D14-Terphenyl (FS)	2017/03/02		101	%	50 - 130
			D8-Acenaphthylene	2017/03/02		98	%	50 - 130
			Acenaphthene	2017/03/02		114	%	50 - 130
			Acenaphthylene	2017/03/02		97	%	50 - 130
			Anthracene	2017/03/02		92	%	50 - 130
			Benzo(a)anthracene	2017/03/02		92	%	50 - 130
			Benzo(a)pyrene	2017/03/02		92	%	50 - 130
			Benzo(b/j)fluoranthene	2017/03/02		105	%	50 - 130
			Benzo(g,h,i)perylene	2017/03/02		85	%	50 - 130
			Benzo(k)fluoranthene	2017/03/02		84	%	50 - 130
			Chrysene	2017/03/02		89	%	50 - 130
			Dibenz(a,h)anthracene	2017/03/02		89	%	50 - 130
			Fluoranthene	2017/03/02		108	%	50 - 130
			Fluorene	2017/03/02		95	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2017/03/02		90	%	50 - 130
			1-Methylnaphthalene	2017/03/02		96	%	50 - 130
			2-Methylnaphthalene	2017/03/02		93	%	50 - 130
			Naphthalene	2017/03/02		88	%	50 - 130
			Phenanthrene	2017/03/02		104	%	50 - 130
			Pyrene	2017/03/02		108	%	50 - 130
4882937	JET	Spiked Blank	Biphenyl	2017/03/02		64	%	50 - 130
			D10-Anthracene	2017/03/02		101	%	50 - 130
			D14-Terphenyl (FS)	2017/03/02		100	%	50 - 130
			D8-Acenaphthylene	2017/03/02		90	%	50 - 130
			Acenaphthene	2017/03/02		97	%	50 - 130
			Acenaphthylene	2017/03/02		88	%	50 - 130
			Anthracene	2017/03/02		89	%	50 - 130
			Benzo(a)anthracene	2017/03/02		94	%	50 - 130
			Benzo(a)pyrene	2017/03/02		99	%	50 - 130
			Benzo(b/j)fluoranthene	2017/03/02		112	%	50 - 130
			Benzo(g,h,i)perylene	2017/03/02		104	%	50 - 130
			Benzo(k)fluoranthene	2017/03/02		112	%	50 - 130
			Chrysene	2017/03/02		103	%	50 - 130
			Dibenz(a,h)anthracene	2017/03/02		106	%	50 - 130
			Fluoranthene	2017/03/02		106	%	50 - 130
			Fluorene	2017/03/02		93	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2017/03/02		107	%	50 - 130
			1-Methylnaphthalene	2017/03/02		74	%	50 - 130
			2-Methylnaphthalene	2017/03/02		80	%	50 - 130
			Naphthalene	2017/03/02		81	%	50 - 130
			Phenanthrene	2017/03/02		102	%	50 - 130
			Pyrene	2017/03/02		110	%	50 - 130
4882937	JET	Method Blank	Biphenyl	2017/03/02	ND, RDL=0.050		ug/L	
			D10-Anthracene	2017/03/02		101	%	50 - 130
			D14-Terphenyl (FS)	2017/03/02		104	%	50 - 130
			D8-Acenaphthylene	2017/03/02		84	%	50 - 130
			Acenaphthene	2017/03/02	ND, RDL=0.050		ug/L	
			Acenaphthylene	2017/03/02	ND, RDL=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
			Anthracene	2017/03/02	ND, RDL=0.050		ug/L	
			Benzo(a)anthracene	2017/03/02	ND, RDL=0.050		ug/L	
			Benzo(a)pyrene	2017/03/02	ND, RDL=0.010		ug/L	
			Benzo(b/j)fluoranthene	2017/03/02	ND, RDL=0.050		ug/L	
			Benzo(g,h,i)perylene	2017/03/02	ND, RDL=0.050		ug/L	
			Benzo(k)fluoranthene	2017/03/02	ND, RDL=0.050		ug/L	
			Chrysene	2017/03/02	ND, RDL=0.050		ug/L	
			Dibenz(a,h)anthracene	2017/03/02	ND, RDL=0.050		ug/L	
			Fluoranthene	2017/03/02	ND, RDL=0.050		ug/L	
			Fluorene	2017/03/02	ND, RDL=0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/03/02	ND, RDL=0.050		ug/L	
			1-Methylnaphthalene	2017/03/02	ND, RDL=0.050		ug/L	
			2-Methylnaphthalene	2017/03/02	ND, RDL=0.050		ug/L	
			Naphthalene	2017/03/02	ND, RDL=0.050		ug/L	
			Phenanthrene	2017/03/02	ND, RDL=0.030		ug/L	
			Pyrene	2017/03/02	ND, RDL=0.050		ug/L	
4882937	JET	RPD [DZA948-03]	Biphenyl	2017/03/02	NC		%	30
			Acenaphthene	2017/03/02	NC		%	30
			Acenaphthylene	2017/03/02	NC		%	30
			Anthracene	2017/03/02	NC		%	30
			Benzo(a)anthracene	2017/03/02	NC		%	30
			Benzo(a)pyrene	2017/03/02	NC		%	30
			Benzo(b/j)fluoranthene	2017/03/02	NC		%	30
			Benzo(g,h,i)perylene	2017/03/02	NC		%	30
			Benzo(k)fluoranthene	2017/03/02	NC		%	30
			Chrysene	2017/03/02	NC		%	30
			Dibenz(a,h)anthracene	2017/03/02	NC		%	30
			Fluoranthene	2017/03/02	NC		%	30
			Fluorene	2017/03/02	NC		%	30
			Indeno(1,2,3-cd)pyrene	2017/03/02	NC		%	30
			1-Methylnaphthalene	2017/03/02	NC		%	30
			2-Methylnaphthalene	2017/03/02	NC		%	30
			Naphthalene	2017/03/02	NC		%	30
			Phenanthrene	2017/03/02	NC		%	30
			Pyrene	2017/03/02	NC		%	30
4883216	DR1	Matrix Spike	4-Bromofluorobenzene	2017/03/02		102	%	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
			D4-1,2-Dichloroethane	2017/03/02		99	%	70 - 130
			D8-Toluene	2017/03/02		102	%	70 - 130
			Acetone (2-Propanone)	2017/03/02		96	%	60 - 140
			Benzene	2017/03/02		NC	%	70 - 130
			Bromodichloromethane	2017/03/02		95	%	70 - 130
			Bromoform	2017/03/02		96	%	70 - 130
			Bromomethane	2017/03/02		91	%	60 - 140
			Carbon Tetrachloride	2017/03/02		91	%	70 - 130
			Chlorobenzene	2017/03/02		99	%	70 - 130
			Chloroform	2017/03/02		92	%	70 - 130
			Dibromochloromethane	2017/03/02		96	%	70 - 130
			1,2-Dichlorobenzene	2017/03/02		96	%	70 - 130
			1,3-Dichlorobenzene	2017/03/02		95	%	70 - 130
			1,4-Dichlorobenzene	2017/03/02		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2017/03/02		74	%	60 - 140
			1,1-Dichloroethane	2017/03/02		92	%	70 - 130
			1,2-Dichloroethane	2017/03/02		96	%	70 - 130
			1,1-Dichloroethylene	2017/03/02		93	%	70 - 130
			cis-1,2-Dichloroethylene	2017/03/02		97	%	70 - 130
			trans-1,2-Dichloroethylene	2017/03/02		92	%	70 - 130
			1,2-Dichloropropane	2017/03/02		91	%	70 - 130
			cis-1,3-Dichloropropene	2017/03/02		96	%	70 - 130
			trans-1,3-Dichloropropene	2017/03/02		104	%	70 - 130
			Ethylbenzene	2017/03/02		NC	%	70 - 130
			Ethylene Dibromide	2017/03/02		98	%	70 - 130
			Hexane	2017/03/02		97	%	70 - 130
			Methylene Chloride(Dichloromethane)	2017/03/02		101	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2017/03/02		99	%	60 - 140
			Methyl Isobutyl Ketone	2017/03/02		99	%	70 - 130
			Methyl t-butyl ether (MTBE)	2017/03/02		93	%	70 - 130
			Styrene	2017/03/02		103	%	70 - 130
			1,1,1,2-Tetrachloroethane	2017/03/02		94	%	70 - 130
			1,1,2,2-Tetrachloroethane	2017/03/02		97	%	70 - 130
			Tetrachloroethylene	2017/03/02		93	%	70 - 130
			Toluene	2017/03/02		NC	%	70 - 130
			1,1,1-Trichloroethane	2017/03/02		90	%	70 - 130
			1,1,2-Trichloroethane	2017/03/02		95	%	70 - 130
			Trichloroethylene	2017/03/02		92	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2017/03/02		91	%	70 - 130
			Vinyl Chloride	2017/03/02		88	%	70 - 130
			p+m-Xylene	2017/03/02		NC	%	70 - 130
			o-Xylene	2017/03/02		NC	%	70 - 130
			F1 (C6-C10)	2017/03/02		NC	%	60 - 140
4883216	DR1	Spiked Blank	4-Bromofluorobenzene	2017/03/02		104	%	70 - 130
			D4-1,2-Dichloroethane	2017/03/02		102	%	70 - 130
			D8-Toluene	2017/03/02		102	%	70 - 130
			Acetone (2-Propanone)	2017/03/02		99	%	60 - 140
			Benzene	2017/03/02		99	%	70 - 130
			Bromodichloromethane	2017/03/02		102	%	70 - 130
			Bromoform	2017/03/02		101	%	70 - 130
			Bromomethane	2017/03/02		97	%	60 - 140
			Carbon Tetrachloride	2017/03/02		100	%	70 - 130
			Chlorobenzene	2017/03/02		104	%	70 - 130
			Chloroform	2017/03/02		98	%	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
			Dibromochloromethane	2017/03/02		102	%	70 - 130
			1,2-Dichlorobenzene	2017/03/02		100	%	70 - 130
			1,3-Dichlorobenzene	2017/03/02		100	%	70 - 130
			1,4-Dichlorobenzene	2017/03/02		102	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2017/03/02		90	%	60 - 140
			1,1-Dichloroethane	2017/03/02		99	%	70 - 130
			1,2-Dichloroethane	2017/03/02		98	%	70 - 130
			1,1-Dichloroethylene	2017/03/02		103	%	70 - 130
			cis-1,2-Dichloroethylene	2017/03/02		104	%	70 - 130
			trans-1,2-Dichloroethylene	2017/03/02		99	%	70 - 130
			1,2-Dichloropropane	2017/03/02		96	%	70 - 130
			cis-1,3-Dichloropropene	2017/03/02		98	%	70 - 130
			trans-1,3-Dichloropropene	2017/03/02		100	%	70 - 130
			Ethylbenzene	2017/03/02		104	%	70 - 130
			Ethylene Dibromide	2017/03/02		102	%	70 - 130
			Hexane	2017/03/02		106	%	70 - 130
			Methylene Chloride(Dichloromethane)	2017/03/02		108	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2017/03/02		103	%	60 - 140
			Methyl Isobutyl Ketone	2017/03/02		104	%	70 - 130
			Methyl t-butyl ether (MTBE)	2017/03/02		102	%	70 - 130
			Styrene	2017/03/02		105	%	70 - 130
			1,1,1,2-Tetrachloroethane	2017/03/02		101	%	70 - 130
			1,1,2,2-Tetrachloroethane	2017/03/02		101	%	70 - 130
			Tetrachloroethylene	2017/03/02		101	%	70 - 130
			Toluene	2017/03/02		95	%	70 - 130
			1,1,1-Trichloroethane	2017/03/02		99	%	70 - 130
			1,1,2-Trichloroethane	2017/03/02		100	%	70 - 130
			Trichloroethylene	2017/03/02		100	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2017/03/02		101	%	70 - 130
			Vinyl Chloride	2017/03/02		98	%	70 - 130
			p+m-Xylene	2017/03/02		103	%	70 - 130
			o-Xylene	2017/03/02		103	%	70 - 130
			F1 (C6-C10)	2017/03/02		93	%	60 - 140
4883216	DR1	Method Blank	4-Bromofluorobenzene	2017/03/02		97	%	70 - 130
			D4-1,2-Dichloroethane	2017/03/02		102	%	70 - 130
			D8-Toluene	2017/03/02		97	%	70 - 130
			Acetone (2-Propanone)	2017/03/02	ND, RDL=10		ug/L	
			Benzene	2017/03/02	ND, RDL=0.20		ug/L	
			Bromodichloromethane	2017/03/02	ND, RDL=0.50		ug/L	
			Bromoform	2017/03/02	ND, RDL=1.0		ug/L	
			Bromomethane	2017/03/02	ND, RDL=0.50		ug/L	
			Carbon Tetrachloride	2017/03/02	ND, RDL=0.20		ug/L	
			Chlorobenzene	2017/03/02	ND, RDL=0.20		ug/L	
			Chloroform	2017/03/02	ND, RDL=0.20		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibromochloromethane	2017/03/02	ND, RDL=0.50		ug/L	
			1,2-Dichlorobenzene	2017/03/02	ND, RDL=0.50		ug/L	
			1,3-Dichlorobenzene	2017/03/02	ND, RDL=0.50		ug/L	
			1,4-Dichlorobenzene	2017/03/02	ND, RDL=0.50		ug/L	
			Dichlorodifluoromethane (FREON 12)	2017/03/02	ND, RDL=1.0		ug/L	
			1,1-Dichloroethane	2017/03/02	ND, RDL=0.20		ug/L	
			1,2-Dichloroethane	2017/03/02	ND, RDL=0.50		ug/L	
			1,1-Dichloroethylene	2017/03/02	ND, RDL=0.20		ug/L	
			cis-1,2-Dichloroethylene	2017/03/02	ND, RDL=0.50		ug/L	
			trans-1,2-Dichloroethylene	2017/03/02	ND, RDL=0.50		ug/L	
			1,2-Dichloropropane	2017/03/02	ND, RDL=0.20		ug/L	
			cis-1,3-Dichloropropene	2017/03/02	ND, RDL=0.30		ug/L	
			trans-1,3-Dichloropropene	2017/03/02	ND, RDL=0.40		ug/L	
			Ethylbenzene	2017/03/02	ND, RDL=0.20		ug/L	
			Ethylene Dibromide	2017/03/02	ND, RDL=0.20		ug/L	
			Hexane	2017/03/02	ND, RDL=1.0		ug/L	
			Methylene Chloride(Dichloromethane)	2017/03/02	ND, RDL=2.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2017/03/02	ND, RDL=10		ug/L	
			Methyl Isobutyl Ketone	2017/03/02	ND, RDL=5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2017/03/02	ND, RDL=0.50		ug/L	
			Styrene	2017/03/02	ND, RDL=0.50		ug/L	
			1,1,1,2-Tetrachloroethane	2017/03/02	ND, RDL=0.50		ug/L	
			1,1,2,2-Tetrachloroethane	2017/03/02	ND, RDL=0.50		ug/L	
			Tetrachloroethylene	2017/03/02	ND, RDL=0.20		ug/L	
			Toluene	2017/03/02	ND, RDL=0.20		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
			1,1,1-Trichloroethane	2017/03/02	ND, RDL=0.20		ug/L	
			1,1,2-Trichloroethane	2017/03/02	ND, RDL=0.50		ug/L	
			Trichloroethylene	2017/03/02	ND, RDL=0.20		ug/L	
			Trichlorofluoromethane (FREON 11)	2017/03/02	ND, RDL=0.50		ug/L	
			Vinyl Chloride	2017/03/02	ND, RDL=0.20		ug/L	
			p+m-Xylene	2017/03/02	ND, RDL=0.20		ug/L	
			o-Xylene	2017/03/02	ND, RDL=0.20		ug/L	
			Total Xylenes	2017/03/02	ND, RDL=0.20		ug/L	
			F1 (C6-C10)	2017/03/02	ND, RDL=25		ug/L	
			F1 (C6-C10) - BTEX	2017/03/02	ND, RDL=25		ug/L	
4883216	DR1	RPD	Acetone (2-Propanone)	2017/03/02	NC		%	30
			Benzene	2017/03/02	0.62		%	30
			Bromodichloromethane	2017/03/02	NC		%	30
			Bromoform	2017/03/02	NC		%	30
			Bromomethane	2017/03/02	NC		%	30
			Carbon Tetrachloride	2017/03/02	NC		%	30
			Chlorobenzene	2017/03/02	NC		%	30
			Chloroform	2017/03/02	NC		%	30
			Dibromochloromethane	2017/03/02	NC		%	30
			1,2-Dichlorobenzene	2017/03/02	NC		%	30
			1,3-Dichlorobenzene	2017/03/02	NC		%	30
			1,4-Dichlorobenzene	2017/03/02	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2017/03/02	NC		%	30
			1,1-Dichloroethane	2017/03/02	NC		%	30
			1,2-Dichloroethane	2017/03/02	NC		%	30
			1,1-Dichloroethylene	2017/03/02	NC		%	30
			cis-1,2-Dichloroethylene	2017/03/02	NC		%	30
			trans-1,2-Dichloroethylene	2017/03/02	NC		%	30
			1,2-Dichloropropane	2017/03/02	NC		%	30
			cis-1,3-Dichloropropene	2017/03/02	NC		%	30
			trans-1,3-Dichloropropene	2017/03/02	NC		%	30
			Ethylbenzene	2017/03/02	1.4		%	30
			Ethylene Dibromide	2017/03/02	NC		%	30
			Hexane	2017/03/02	NC		%	30
			Methylene Chloride(Dichloromethane)	2017/03/02	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2017/03/02	NC		%	30
			Methyl Isobutyl Ketone	2017/03/02	NC		%	30
			Methyl t-butyl ether (MTBE)	2017/03/02	NC		%	30
			Styrene	2017/03/02	1.5		%	30
			1,1,1,2-Tetrachloroethane	2017/03/02	NC		%	30
			1,1,2,2-Tetrachloroethane	2017/03/02	NC		%	30
			Tetrachloroethylene	2017/03/02	NC		%	30
			Toluene	2017/03/02	1.7		%	30

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,1,1-Trichloroethane	2017/03/02	NC		%	30
			1,1,2-Trichloroethane	2017/03/02	NC		%	30
			Trichloroethylene	2017/03/02	NC		%	30
			Trichlorofluoromethane (FREON 11)	2017/03/02	NC		%	30
			Vinyl Chloride	2017/03/02	NC		%	30
			p+m-Xylene	2017/03/02	1.0		%	30
			o-Xylene	2017/03/02	1.5		%	30
			Total Xylenes	2017/03/02	1.2		%	30
			F1 (C6-C10)	2017/03/02	3.4		%	30
			F1 (C6-C10) - BTEX	2017/03/02	7.3		%	30
4883527	CPE	Matrix Spike [DZA948-05]	Dissolved Antimony (Sb)	2017/03/02		116	%	80 - 120
			Dissolved Arsenic (As)	2017/03/02		107	%	80 - 120
			Dissolved Barium (Ba)	2017/03/02		112	%	80 - 120
			Dissolved Beryllium (Be)	2017/03/02		108	%	80 - 120
			Dissolved Boron (B)	2017/03/02		106	%	80 - 120
			Dissolved Cadmium (Cd)	2017/03/02		106	%	80 - 120
			Dissolved Chromium (Cr)	2017/03/02		104	%	80 - 120
			Dissolved Cobalt (Co)	2017/03/02		100	%	80 - 120
			Dissolved Copper (Cu)	2017/03/02		107	%	80 - 120
			Dissolved Lead (Pb)	2017/03/02		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/03/02		115	%	80 - 120
			Dissolved Nickel (Ni)	2017/03/02		97	%	80 - 120
			Dissolved Selenium (Se)	2017/03/02		102	%	80 - 120
			Dissolved Silver (Ag)	2017/03/02		100	%	80 - 120
			Dissolved Sodium (Na)	2017/03/02		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/03/02		97	%	80 - 120
			Dissolved Uranium (U)	2017/03/02		104	%	80 - 120
			Dissolved Vanadium (V)	2017/03/02		107	%	80 - 120
			Dissolved Zinc (Zn)	2017/03/02		97	%	80 - 120
4883527	CPE	Spiked Blank	Dissolved Antimony (Sb)	2017/03/02		107	%	80 - 120
			Dissolved Arsenic (As)	2017/03/02		99	%	80 - 120
			Dissolved Barium (Ba)	2017/03/02		104	%	80 - 120
			Dissolved Beryllium (Be)	2017/03/02		101	%	80 - 120
			Dissolved Boron (B)	2017/03/02		100	%	80 - 120
			Dissolved Cadmium (Cd)	2017/03/02		101	%	80 - 120
			Dissolved Chromium (Cr)	2017/03/02		100	%	80 - 120
			Dissolved Cobalt (Co)	2017/03/02		98	%	80 - 120
			Dissolved Copper (Cu)	2017/03/02		100	%	80 - 120
			Dissolved Lead (Pb)	2017/03/02		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/03/02		102	%	80 - 120
			Dissolved Nickel (Ni)	2017/03/02		96	%	80 - 120
			Dissolved Selenium (Se)	2017/03/02		98	%	80 - 120
			Dissolved Silver (Ag)	2017/03/02		97	%	80 - 120
			Dissolved Sodium (Na)	2017/03/02		97	%	80 - 120
			Dissolved Thallium (Tl)	2017/03/02		97	%	80 - 120
			Dissolved Uranium (U)	2017/03/02		99	%	80 - 120
			Dissolved Vanadium (V)	2017/03/02		99	%	80 - 120
			Dissolved Zinc (Zn)	2017/03/02		100	%	80 - 120
4883527	CPE	Method Blank	Dissolved Antimony (Sb)	2017/03/02	ND, RDL=0.50		ug/L	
			Dissolved Arsenic (As)	2017/03/02	ND, RDL=1.0		ug/L	
			Dissolved Barium (Ba)	2017/03/02	ND, RDL=2.0		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Beryllium (Be)	2017/03/02	ND, RDL=0.50		ug/L	
			Dissolved Boron (B)	2017/03/02	ND, RDL=10		ug/L	
			Dissolved Cadmium (Cd)	2017/03/02	ND, RDL=0.10		ug/L	
			Dissolved Chromium (Cr)	2017/03/02	ND, RDL=5.0		ug/L	
			Dissolved Cobalt (Co)	2017/03/02	ND, RDL=0.50		ug/L	
			Dissolved Copper (Cu)	2017/03/02	ND, RDL=1.0		ug/L	
			Dissolved Lead (Pb)	2017/03/02	ND, RDL=0.50		ug/L	
			Dissolved Molybdenum (Mo)	2017/03/02	ND, RDL=0.50		ug/L	
			Dissolved Nickel (Ni)	2017/03/02	ND, RDL=1.0		ug/L	
			Dissolved Selenium (Se)	2017/03/02	ND, RDL=2.0		ug/L	
			Dissolved Silver (Ag)	2017/03/02	ND, RDL=0.10		ug/L	
			Dissolved Sodium (Na)	2017/03/02	ND, RDL=100		ug/L	
			Dissolved Thallium (Tl)	2017/03/02	ND, RDL=0.050		ug/L	
			Dissolved Uranium (U)	2017/03/02	ND, RDL=0.10		ug/L	
			Dissolved Vanadium (V)	2017/03/02	ND, RDL=0.50		ug/L	
			Dissolved Zinc (Zn)	2017/03/02	ND, RDL=5.0		ug/L	
4883527	CPE	RPD [DZA948-05]	Dissolved Antimony (Sb)	2017/03/03	NC		%	20
			Dissolved Arsenic (As)	2017/03/03	NC		%	20
			Dissolved Barium (Ba)	2017/03/03	2.5		%	20
			Dissolved Beryllium (Be)	2017/03/03	NC		%	20
			Dissolved Boron (B)	2017/03/03	NC		%	20
			Dissolved Cadmium (Cd)	2017/03/03	NC		%	20
			Dissolved Chromium (Cr)	2017/03/03	NC		%	20
			Dissolved Cobalt (Co)	2017/03/03	NC		%	20
			Dissolved Copper (Cu)	2017/03/03	NC		%	20
			Dissolved Lead (Pb)	2017/03/03	NC		%	20
			Dissolved Molybdenum (Mo)	2017/03/03	NC		%	20
			Dissolved Nickel (Ni)	2017/03/03	NC		%	20
			Dissolved Selenium (Se)	2017/03/03	NC		%	20
			Dissolved Silver (Ag)	2017/03/03	NC		%	20
			Dissolved Sodium (Na)	2017/03/03	0.020		%	20
			Dissolved Thallium (Tl)	2017/03/03	NC		%	20
			Dissolved Uranium (U)	2017/03/03	0.88		%	20
			Dissolved Vanadium (V)	2017/03/03	NC		%	20
			Dissolved Zinc (Zn)	2017/03/03	NC		%	20
4883671	SAC	Matrix Spike [DZA948-04]	Chromium (VI)	2017/03/02		95	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4883671	SAC	Spiked Blank	Chromium (VI)	2017/03/02		97	%	80 - 120
4883671	SAC	Method Blank	Chromium (VI)	2017/03/02	ND, RDL=0.50		ug/L	
4883671	SAC	RPD [DZA948-04]	Chromium (VI)	2017/03/02	NC		%	20
4884116	ZZ	Matrix Spike [DZA948-02]	o-Terphenyl	2017/03/02		103	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/03/02		89	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2017/03/02		92	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2017/03/02		97	%	50 - 130
4884116	ZZ	Spiked Blank	o-Terphenyl	2017/03/02		102	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/03/02		89	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2017/03/02		95	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2017/03/02		98	%	60 - 130
4884116	ZZ	Method Blank	o-Terphenyl	2017/03/02		101	%	60 - 130
			F2 (C10-C16 Hydrocarbons)	2017/03/02	ND, RDL=100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2017/03/02	ND, RDL=200		ug/L	
			F4 (C34-C50 Hydrocarbons)	2017/03/02	ND, RDL=200		ug/L	
4884116	ZZ	RPD	F2 (C10-C16 Hydrocarbons)	2017/03/03	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2017/03/03	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2017/03/03	NC		%	30
4884121	MYI	Matrix Spike	2,4,6-Tribromophenol	2017/03/03		101	%	50 - 130
			2-Fluorophenol	2017/03/03		54	%	50 - 130
			D5-Phenol	2017/03/03		70	%	30 - 130
			2-Chlorophenol	2017/03/03		70	%	50 - 130
			2,3,4,6-Tetrachlorophenol	2017/03/03		101	%	10 - 130
			2,3,5-Trichlorophenol	2017/03/03		92	%	10 - 130
			2,4-Dichlorophenol	2017/03/03		93	%	50 - 130
			2,4-Dimethylphenol	2017/03/03		98	%	30 - 130
			2,4,6-Trichlorophenol	2017/03/03		103	%	10 - 130
			2,6-Dichlorophenol	2017/03/03		96	%	10 - 130
			4-Chloro-3-Methylphenol	2017/03/03		95	%	10 - 130
			4-Nitrophenol	2017/03/03		96	%	10 - 130
			m/p-Cresol	2017/03/03		109	%	10 - 130
			o-Cresol	2017/03/03		98	%	10 - 130
			Pentachlorophenol	2017/03/03		95	%	50 - 130
			Phenol	2017/03/03		95	%	30 - 130
			2,3,4,5-Tetrachlorophenol	2017/03/03		109	%	10 - 130
			2,3,5,6-Tetrachlorophenol	2017/03/03		108	%	10 - 130
			2,3,4-Trichlorophenol	2017/03/03		92	%	10 - 130
			2,3,6-Trichlorophenol	2017/03/03		102	%	30 - 130
			2,4,5-Trichlorophenol	2017/03/03		95	%	50 - 130
			3,4,5-Trichlorophenol	2017/03/03		87	%	10 - 130
			2,4-Dinitrophenol	2017/03/03		86	%	30 - 130
			2,3-Dichlorophenol	2017/03/03		94	%	10 - 130
			2,5-Dichlorophenol	2017/03/03		97	%	10 - 130
			3,4-Dichlorophenol	2017/03/03		70	%	10 - 130
			3,5-Dichlorophenol	2017/03/03		83	%	10 - 130
			4,6-Dinitro-2-methylphenol	2017/03/03		101	%	10 - 130
			3 & 4-Chlorophenol	2017/03/03		98	%	10 - 130
			2-Nitrophenol	2017/03/03		89	%	10 - 130
4884121	MYI	Spiked Blank	2,4,6-Tribromophenol	2017/03/03		94	%	50 - 130
			2-Fluorophenol	2017/03/03		82	%	50 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			D5-Phenol	2017/03/03		72	%	30 - 130
			2-Chlorophenol	2017/03/03		98	%	50 - 130
			2,3,4,6-Tetrachlorophenol	2017/03/03		92	%	10 - 130
			2,3,5-Trichlorophenol	2017/03/03		91	%	10 - 130
			2,4-Dichlorophenol	2017/03/03		98	%	50 - 130
			2,4-Dimethylphenol	2017/03/03		96	%	30 - 130
			2,4,6-Trichlorophenol	2017/03/03		105	%	10 - 130
			2,6-Dichlorophenol	2017/03/03		96	%	10 - 130
			4-Chloro-3-Methylphenol	2017/03/03		92	%	10 - 130
			4-Nitrophenol	2017/03/03		94	%	10 - 130
			m/p-Cresol	2017/03/03		103	%	10 - 130
			o-Cresol	2017/03/03		99	%	10 - 130
			Pentachlorophenol	2017/03/03		90	%	50 - 130
			Phenol	2017/03/03		81	%	30 - 130
			2,3,4,5-Tetrachlorophenol	2017/03/03		100	%	10 - 130
			2,3,5,6-Tetrachlorophenol	2017/03/03		101	%	10 - 130
			2,3,4-Trichlorophenol	2017/03/03		98	%	10 - 130
			2,3,6-Trichlorophenol	2017/03/03		102	%	30 - 130
			2,4,5-Trichlorophenol	2017/03/03		93	%	50 - 130
			3,4,5-Trichlorophenol	2017/03/03		87	%	10 - 130
			2,4-Dinitrophenol	2017/03/03		78	%	30 - 130
			2,3-Dichlorophenol	2017/03/03		97	%	10 - 130
			2,5-Dichlorophenol	2017/03/03		98	%	10 - 130
			3,4-Dichlorophenol	2017/03/03		99	%	10 - 130
			3,5-Dichlorophenol	2017/03/03		96	%	10 - 130
			4,6-Dinitro-2-methylphenol	2017/03/03		86	%	10 - 130
			3 & 4-Chlorophenol	2017/03/03		97	%	10 - 130
			2-Nitrophenol	2017/03/03		96	%	10 - 130
4884121	MYI	Method Blank	2,4,6-Tribromophenol	2017/03/03		91	%	50 - 130
			2-Fluorophenol	2017/03/03		64	%	50 - 130
			D5-Phenol	2017/03/03		70	%	30 - 130
			2-Chlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,3,4,6-Tetrachlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,3,5-Trichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,4-Dichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,4-Dimethylphenol	2017/03/03	ND,RDL=1		ug/L	
			2,4,6-Trichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,6-Dichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			4-Chloro-3-Methylphenol	2017/03/03	ND, RDL=0.1		ug/L	
			4-Nitrophenol	2017/03/03	ND,RDL=1		ug/L	
			m/p-Cresol	2017/03/03	ND, RDL=0.5		ug/L	
			o-Cresol	2017/03/03	ND, RDL=0.5		ug/L	
			Pentachlorophenol	2017/03/03	ND, RDL=0.1		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
			Phenol	2017/03/03	ND, RDL=0.5		ug/L	
			2,3,4,5-Tetrachlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,3,5,6-Tetrachlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,3,4-Trichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,3,6-Trichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,4,5-Trichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			3,4,5-Trichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,4-Dinitrophenol	2017/03/03	ND,RDL=1		ug/L	
			2,3-Dichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2,5-Dichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			3,4-Dichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			3,5-Dichlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			4,6-Dinitro-2-methylphenol	2017/03/03	ND,RDL=1		ug/L	
			3 & 4-Chlorophenol	2017/03/03	ND, RDL=0.1		ug/L	
			2-Nitrophenol	2017/03/03	ND,RDL=1		ug/L	
4884121	MYI	RPD [DZA948-01]	2-Chlorophenol	2017/03/03	NC		%	30
			2,3,4,6-Tetrachlorophenol	2017/03/03	NC		%	40
			2,3,5-Trichlorophenol	2017/03/03	NC		%	40
			2,4-Dichlorophenol	2017/03/03	NC		%	30
			2,4-Dimethylphenol	2017/03/03	NC		%	30
			2,4,6-Trichlorophenol	2017/03/03	NC		%	30
			2,6-Dichlorophenol	2017/03/03	NC		%	40
			4-Chloro-3-Methylphenol	2017/03/03	NC		%	40
			4-Nitrophenol	2017/03/03	NC		%	40
			m/p-Cresol	2017/03/03	NC		%	40
			o-Cresol	2017/03/03	NC		%	40
			Pentachlorophenol	2017/03/03	NC		%	30
			Phenol	2017/03/03	NC		%	30
			2,3,4,5-Tetrachlorophenol	2017/03/03	NC		%	40
			2,3,5,6-Tetrachlorophenol	2017/03/03	NC		%	40
			2,3,4-Trichlorophenol	2017/03/03	NC		%	40
			2,3,6-Trichlorophenol	2017/03/03	NC		%	40
			2,4,5-Trichlorophenol	2017/03/03	NC		%	30
			3,4,5-Trichlorophenol	2017/03/03	NC		%	40
			2,4-Dinitrophenol	2017/03/03	NC		%	30
			2,3-Dichlorophenol	2017/03/03	NC		%	40
			2,5-Dichlorophenol	2017/03/03	NC		%	40
			3,4-Dichlorophenol	2017/03/03	NC		%	40
			3,5-Dichlorophenol	2017/03/03	NC		%	40
			4,6-Dinitro-2-methylphenol	2017/03/03	NC		%	40
			3 & 4-Chlorophenol	2017/03/03	NC		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			2-Nitrophenol	2017/03/03	NC		%	40
4887087	RON	Matrix Spike [DZA948-06]	Mercury (Hg)	2017/03/06		107	%	75 - 125
4887087	RON	Spiked Blank	Mercury (Hg)	2017/03/06		104	%	80 - 120
4887087	RON	Method Blank	Mercury (Hg)	2017/03/06	ND, RDL=0.1		ug/L	
4887087	RON	RPD [DZA948-06]	Mercury (Hg)	2017/03/06	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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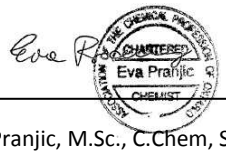
Maxxam Job #: B740104
Report Date: 2017/03/06

DST Consulting
Your P.O. #: 45064626

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

6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/2

CHAIN OF CUSTODY RECORD 64307

Page ____ of ____

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: City of Ottawa	Company Name: DST Consulting	Quotation #:	[X] Regular TAT (5-7 days) Most analyses
Contact Name:	Contact Name: Ginger Rogers	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address:	Address: 805, 2150 Thurston Drive. Ottawa.	Project #:	Rush TAT (Surcharges will be applied)
Phone: Fax:	Phone: Fax:	Site Location:	[ ] 1 Day [ ] 2 Days [ ] 3-4 Days
Email:	Email: grogers@dstgroup.com	Site #:	Date Required:
		Sampled By:	Rush Confirmation #:

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

Regulation 153
[ ] Table 1 [X] Res/Park [ ] Med/ Fine
[ ] Table 2 [ ] Ind/Comm [X] Coarse
[ ] Table 3 [ ] Agri/ Other
[ ] Table ____
FOR RSC (PLEASE CIRCLE) (Y) N

Other Regulations
[ ] CCME [ ] Sanitary Sewer Bylaw
[ ] MISA [ ] Storm Sewer Bylaw
[ ] PWQO Region
[ ] Other (Specify)
[ ] REG 558 (MIN. 3 DAY TAT REQUIRED)

Include Criteria on Certificate of Analysis: Y / N

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

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)	Phenols	PAHs	HOLD- DO NOT ANALYZE
					REFER TO BACK OF COC										
1	MW17-01	2017/02/27	1415	GW	12	4	X	X	X	X		X	X	X	
2															
3															
4															
5															
6															
7															
8															
9															
10															

27-Feb-17 15:14
Simona Vatamanescu
B740104
HGR ENV-840

RECEIVED IN OTTAWA

ON Fte

LABORATORY USE ONLY

CUSTODY SEAL Y / (N)		COOLER TEMPERATURES
Present	Intact	
N	N.	6, 7, 8
		3/6/3

COOLING MEDIA PRESENT: Y / N

COMMENTS

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
Ginger Rogers G. Rogers	2017/02/27	3:10	Kim Jungkeun	2017/02/27	15:14	6, 7, 8 2017/02/27
			Heather Ann Britton	2017/02/28	09:28	

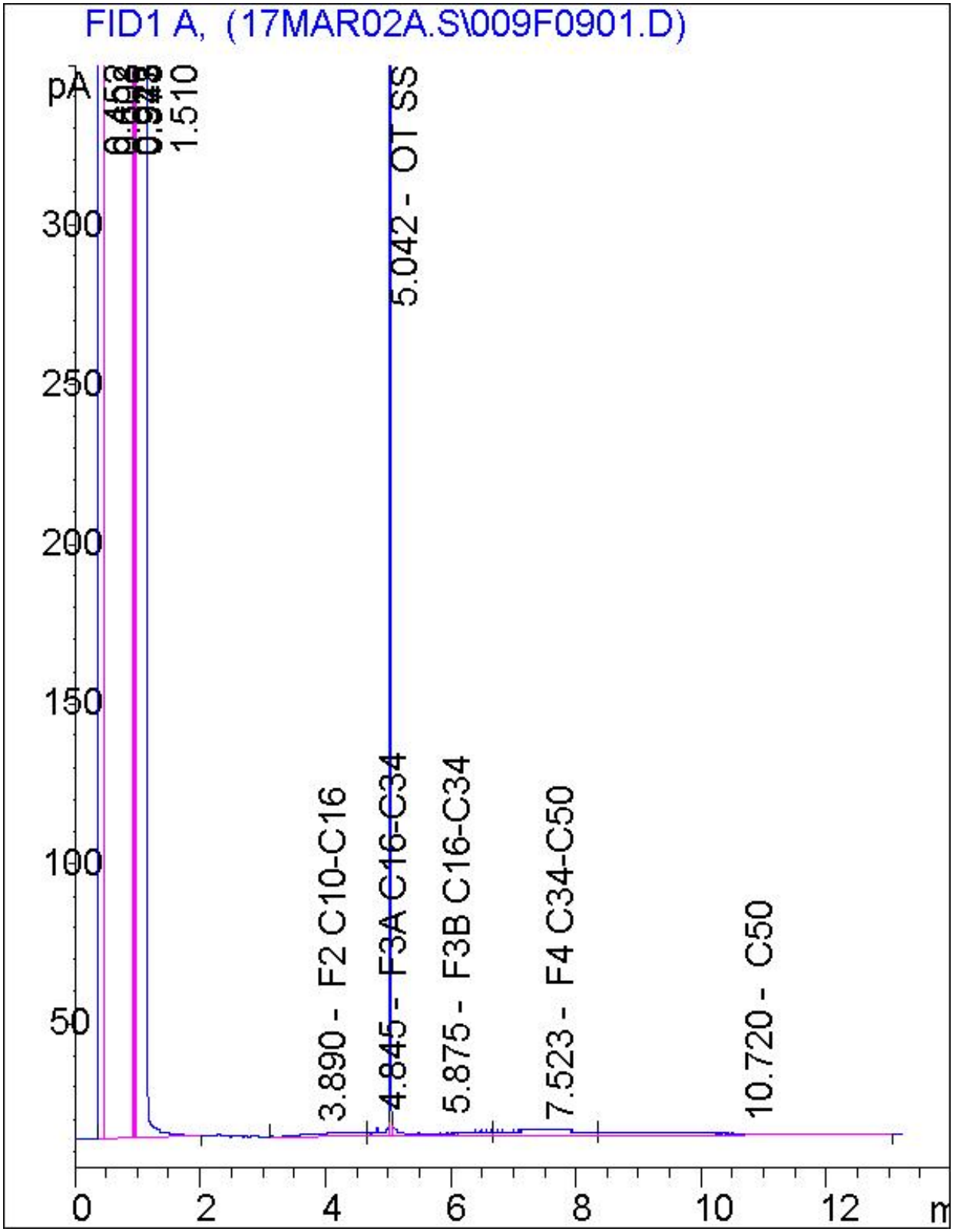
COC-1004 (10/14) - ENV. ENG.

White: Maxxam ~ Yellow: Client

Maxxam Job #: B740104
Report Date: 2017/03/06
Maxxam Sample: DZA948

DST Consulting
Client ID: MW17-01

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.

Your P.O. #: 45064626
Your C.O.C. #: 602271-01-01

Attention:Ginger Rogers

DST Consulting
ON
Canada

Report Date: 2017/03/16
Report #: R4393815
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B750720
Received: 2017/03/14, 10:35

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Chloride by Automated Colourimetry (1)	1	N/A	2017/03/15	CAM SOP-00463	EPA 325.2 m
Lab Filtered Metals by ICPMS (1)	1	2017/03/15	2017/03/16	CAM SOP-00447	EPA 6020B 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.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
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

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Madison Bingley, Project Manager
Email: MBingley@maxxam.ca
Phone# (613)274-3549

==========

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 #: B750720
Report Date: 2017/03/16

DST Consulting
Your P.O. #: 45064626
Sampler Initials: GR

RESULTS OF ANALYSES OF WATER

Maxxam ID		EAX506		
Sampling Date		2017/03/14 10:15		
COC Number		602271-01-01		
Received Temperature (°C)		1,0,0		
	UNITS	**MW17-04**	**RDL**	**QC Batch**
Dissolved Chloride (Cl)	mg/L	7200	80	4899649

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B750720
Report Date: 2017/03/16

DST Consulting
Your P.O. #: 45064626
Sampler Initials: GR

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		EAX506		
Sampling Date		2017/03/14 10:15		
COC Number		602271-01-01		
Received Temperature (°C)		1,0,0		
	UNITS	**MW17-04**	**RDL**	**QC Batch**
Dissolved Sodium (Na)	ug/L	3800000	1000	4900375

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B750720
Report Date: 2017/03/16

DST Consulting
Your P.O. #: 45064626
Sampler Initials: GR

GENERAL COMMENTS

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

Package 1	0.3°C

Results relate only to the items tested.

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Maxxam Job #: B750720
Report Date: 2017/03/16

DST Consulting
Your P.O. #: 45064626
Sampler Initials: GR

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4899649	DRM	Matrix Spike	Dissolved Chloride (Cl)	2017/03/15		NC	%	80 - 120
4899649	DRM	Spiked Blank	Dissolved Chloride (Cl)	2017/03/15		104	%	80 - 120
4899649	DRM	Method Blank	Dissolved Chloride (Cl)	2017/03/15	ND, RDL=1.0		mg/L	
4899649	DRM	RPD	Dissolved Chloride (Cl)	2017/03/15	0.23		%	20
4900375	JBW	Matrix Spike	Dissolved Sodium (Na)	2017/03/16		102	%	80 - 120
4900375	JBW	Spiked Blank	Dissolved Sodium (Na)	2017/03/16		99	%	80 - 120
4900375	JBW	Method Blank	Dissolved Sodium (Na)	2017/03/16	ND, RDL=100		ug/L	
4900375	JBW	RPD	Dissolved Sodium (Na)	2017/03/16	2.1		%	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.

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)

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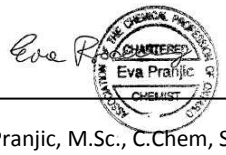
Maxxam Job #: B750720
Report Date: 2017/03/16

DST Consulting
Your P.O. #: 45064626
Sampler Initials: GR

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

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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 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	~~#3824 DST Consulting Engineers Inc~~ City of Ottawa	Company Name:	DST	Quotation #:	B61802	Maxxam Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Ginger Rogers	P.O. #:			602271
Address:	~~2150 Thurston Dr Unit~~ 203 ~~Ottawa ON K1G 5T9~~	Address:	2150 Thurston Dr. Unit 203 Ottawa K1G 5T9	Project:		COC #:	Project Manager:
Tel:	~~(613) 748-1415 x~~	Tel:	6137481415	Project Name:		C#602271-01-01	Madison Bingley
Fax:	~~(613) 748-1356 x~~	Fax:		Site #:			
Email:	ap@dstgroup.com	Email:	grogers@dstgroup.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
Just Sodium only for ICPMS mels

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	Lab Filtered Metals by ICPMS	Chloride by Automated Colourimetry	# of Bottles	Comments
1		MW17-04	2017/03/14	1015	GW	NO	X	X	1	Sodium only
2										
3										
4										
5										RECEIVED IN OTTAWA
6										
7										
8										
9										On ice
10										

14-Mar-17 10:35
Madison Bingley
B750720
KIV OTT 001

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
G. ROGERS	17/03/14	1035	Mariana Sarcon	2017/03/14	10:35	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	1.0.0	Present		N
		Intact		N

* 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

APPENDIX G
LIMITATIONS OF REPORT AND QUALIFICATIONS OF ASSESSORS

LIMITATIONS

The information, conclusions and recommendations given herein are specifically for this project and this Client only, and for the scope of work described herein. It may not be sufficient for other uses. DST does not accept responsibility for use by third parties.

The data, conclusions and recommendations which are presented in this report, and the quality thereof, are based on a scope of work authorized by the Client. Note, however, that no scope of work, no matter how exhaustive, can identify all contaminants or all conditions above and below ground. For example, conditions between test holes may differ from those encountered in the investigation and observed or measured conditions may change with time. This report therefore cannot warranty that all conditions on or off the Site are represented by those identified at specific locations.

Any recommendations and conclusions provided that are based on conditions or assumptions reported herein will inherently include any uncertainty associated with those conditions or assumptions. In fact, many aspects involving professional judgement such as subsurface models and remediation criteria contain a degree of uncertainty which cannot be eliminated. This uncertainty should be managed by periodic review and refinement as additional information becomes available.

Note also that standards, guidelines, and practices related to environmental investigations may change with time. Those which were applied at the time of this investigation may be obsolete or unacceptable at a later date.

Any topographic benchmarks and elevations documented in this report are primarily to establish relative elevation differences between test locations and should not be used for other purposes such as grading, excavation, planning, development, etc.

Any comments given in this report on potential remediation problems and possible methods are intended only for the guidance of the designer. The scope of work may not be sufficient to determine all of the factors that may affect construction or clean-up methods and costs. Contractors bidding on this project or undertaking clean-ups should, therefore, make their own interpretation of the factual information presented and draw their own conclusions as to how the conditions may affect their work.

Any results from an analytical laboratory, title searcher or other subcontractor reported herein have been carried out by others, and DST Consulting Engineers Inc. cannot warranty their accuracy. Similarly, DST cannot warranty the accuracy of information supplied by the client.

QUALIFICATIONS OF ASSESSORS

Bahman Bani Hashemi, Ph. D., is a Project Manager with DST. He has 8 years of experience in the environmental industry. He has been involved in many Phase I/II Environmental Site Assessments, water quality and monitoring programs, environmental compliance audits, and the design of wastewater design and collection systems.

Eric Domingue, P.Eng., QP, is a Principal and senior engineer with DST. Mr. Domingue has 19 years of experience in the environmental industry. He has been involved in a wide range of environmental and hydrogeological projects including environmental site assessments (Phase I, II and III), site remediation and clean-up, hydrogeological investigations, designated substances, and air quality.