Environmental Site Assessment Report, Proposed Combined Sewage Storage Tunnel, Ottawa, Ontario

FINAL

Prepared for:
Planning and Infrastructure Portfolio
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Sign-off Sheet

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Executive Summary

Stantec Consulting Ltd (Stantec) conducted environmental site assessment (ESA) work for the Combined Sewage Storage Tunnel (CSST) alignment which consists of an east-west segment and a north-south segment, herein referred to as the "Site", in Ottawa, Ontario. The east-west segment extends east from the Cave Creek Collector located at the intersection of Brockhill Street and Wellington Street in Lebreton Flats, east along Slater Street to the Rideau Canal, across the canal to continue east along Laurier Avenue to Cumberland Avenue, north along Cumberland Avenue to Cathcart Street, east along Cathcart Street across the Rideau River connecting with existing infrastructure at River Lane. The north-south segment extends east from the intersection of Percy Street and Chamberlain Avenue to Catherine Street, and extends north along Kent Street from Catherine Street to the Ottawa River north of Wellington Street. The alignment is shown on Drawings No. 1 and 2 in **Appendix A**. Stantec completed the ESA work between September 2013 and April 2015 on behalf of the City of Ottawa. The ESA work included a historical review and a soil and groundwater sampling program. It is understood that the portion of the east-west segment from Brockhill Street to Bronson Avenue was previously assessed and is not included in this ESA work.

The purpose of the ESA work was to identify, and evaluate the possible environmental concerns associated with the current and historical activities on properties within, adjacent to, and near the alignment that may adversely affect the proposed tunneling and surface construction activities associated with the CSST.

For the purpose of the historical review, a 250-m distance beyond the centreline of the proposed alignment was assessed for current and historical activities of potential environmental concern.

The historical review consisted of a review of the following sources of information:

- Historical aerial photographs;
- Fire insurance plans;
- Historical reports provided by the National Capital Commission (NCC);
- *Old Landfill Management Strategy, Phase I – Identification of Sites,* October 2004, "Golder Report";
- *The Mapping and Assessment of Former Industrial Sites*, 1988,"Intera Report"; and
- Federal, provincial, municipal, and industry databases.

The sampling program included the collection of soil and groundwater samples from select boreholes near planned surface construction sites and identified historical or current potentially contaminating activities.

Samples were collected and submitted for laboratory analyses to assess the quality of the soil and groundwater along the alignment.

The historical review consisted of an EcoLog ERIS federal, provincial, and private database search for 250 m surrounding the alignment; a historical land use inventory (HLUI) municipal database search provided by the City of Ottawa; fire insurance plans from 1902, updated in 1922, and 1956; historical reports provided by the NCC; the Intera Report from 1988 documenting the location and assessment of former industrial sites in Ottawa; the Golder Report from 2004 documenting the location and details of former landfill sites in Ottawa; and aerial photographs from the geoOttawa website.

The sampling program completed by Stantec along the proposed alignment consisted of the collection of soil samples and groundwater samples for environmental purposes. The borehole drilling and logging, as well as the groundwater monitoring well installation, was undertaken by Golder Associates Ltd.

The analyses of the contaminants of concern were compared to the Full Depth Background Site Condition Standards found in Table 1 Site Condition Standards within the *Soil, Ground Water, and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act* (Ontario Standards) to better assess soil management options. The soil analytical results were also compared to the Ontario Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, as requested by the City of Ottawa.

Groundwater analytical results were compared to sewer discharge limits provided in the City of Ottawa in By-law No. 2003-514. The analyses were compared to both the Table 1 – Limits for Sanitary and Combined Sewers Discharge and the Table 2 – Limits for Storm Sewer Discharge. Comparison to these limits enables a better understanding of the management and disposal options for potentially contaminant-impacted groundwater generated during construction activities at the Site. The groundwater analytical results were also compared to the Ontario Table 3 Standards as requested by the City of Ottawa.

Contaminant concentrations in soil that exceed the applicable Ontario Site Condition Standards are summarized in the table below. The soil sample locations referred to below are also illustrated on Drawing Nos. 5A and 5B in Appendix A.

Summary of Exceedances of Soil Quality Standards

Surface Structure Site Number or Environmental Concern Number	Sample Location	Sample Interval (m bgs)	Contaminant Group Exceeding Ontario Standards - Table 1[1]	Contaminant Group Exceeding Ontario Standards - Table 3[2]
Site 2 EWT / NST Intersection	13-201	0.31-1.80	Metals	Metals
Site 3a RCI Diversion / Drop and Odour Control Facility	13-205 SS1	0.76-1.37	PAHs, metals	PAHs, metals
	13-205 SS3	2.29-2.90	PHC, metals	None
	14-319 SS2	0.76-1.37	PHC, metals	Metals

Surface Structure Site Number or Environmental Concern Number	Sample Location	Sample Interval (m bgs)	Contaminant Group Exceeding Ontario Standards - Table 1[1]	Contaminant Group Exceeding Ontario Standards - Table 3[2]
Site 3c Nicholas St. Shaft	13-209 SS6	4.57-5.18	Metals	Metals
Site 5 EWT Outlet/ RRC Diversion	13-110 SS4	1.52-2.13	VOCs, PAHs, metals	PAHs, metals
	13-227 SS2	0.76-1.37	VOCs, metals	None
	14-228 SS3	2029-2.61	PAHs, PHCs, VOCs	PAHs, VOCs
Site 6 NST Overflow	13-229 SS3	1.52-2.13	PHC, PAHs	None
	13-229 SS4	2.29-2.90	PHC, PAHs, metals	None
	14-502 SA3	0.76-1.37	PAHs	PAHs
	14-502 SA5	3.05-3.51	PAHs, metals	PAHs, metals
Site 9 Catherine St. Drop	13-234 SS6	4.57-5.18	PHC, metals	Metals
Site 10 Odour Control Facility and Chamberlain Street Drop	14-401 SS5	2.29-2.90	Metals	Metals
	14-402 SS3	1.22-1.83	PAHs, VOCs	VOCs
	14-402 SS5	2.44-3.05	Metals	Metals
EC#1 and EC#2 West side of Rideau River	13-107	0.61-1.22	PHC, PAHs	PAHs
EC#3 Cumberland Street and Cathcart Street	14-220A SS1	0.76-1.37	Metals	None
	14-220A SS4	2.80-3.66	Metals	Metals
EC#5 Cumberland Street and Murray Street	13-105 SS1	3.05-3.66	Metals	None
EC#6 Cumberland Street and George Street	14-316 SS1	2.89-3.59	Metals	None
	14-316 SS2	3.58-4.42	Metals	None
EC#14 Kent Street and Lisgar Street	14-317 SS1	3.81-4.42	Metals	Metals

Notes:

1 Table 1 Full Depth Background Site Condition Standards, Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, 2009 (Ontario Standards Table 1).

2 Table 3 Full Depth Generic Site Condition Standard in a Non-Potable Groundwater Condition, Industrial/Commercial/Community Property Use, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, 2009 (Ontario Standards Table 3).

m bgs metres below ground surface

Based on the findings of the ESA work, Stantec Consulting Ltd. makes the following recommendations:

1) Soil Management and Disposal

We recommend that soil and soil-like material that is disturbed and excavated within the project bounds be managed according to the following procedures:

a) Retain/reuse within the Site bounds as much soil as possible, including soil that does not meet the soil quality standards provided in Table 1, Ontario Standards, (i.e., soil that is not considered "inert"). Soil to be reused must meet the applicable required geotechnical specifications.

b) Soil that cannot be accommodated on the Site and that exceeds the Table 1 Ontario Standards and must be disposed off-site, must be placed at an MOECC-approved landfill because it does not satisfy the inert fill quality criteria as we understand it to be applied by the MOECC.

2) Groundwater Quality

Concentrations of contaminants of concern in the groundwater samples obtained from the monitoring wells did not exceed the City of Ottawa sewer use bylaws with the following exceptions:

- 13-105S: detectable concentration of PHC F2 does not comply with the City Storm Sewer Use Discharge Limits and the City Sanitary and Combined Sewer Use Discharge Limits, which prohibit the discharge of fuel;
- 14-221S: total PAHs concentration exceeding the Storm Sewer Use Discharge limits;
- 13-203B: zinc concentration exceeding the Storm Sewer Use Discharge limits;
- manganese at all locations except MW13-111B, 13-201B, 14-223 , 14-223A, 13-227S, MW13-231C, and 14-502 exceeding the Storm Sewer Use Discharge limits.

These conclusions are based solely on the analyses of groundwater samples obtained during the ESA work. The quality of groundwater that may be removed during the construction activities should be assessed at that time to determine if it may be disposed directly to the local sanitary sewer without treatment. The groundwater flow regime may be significantly modified locally during unwatering activities, which could potentially result in significant changes to the groundwater quality.

Concentrations of contaminants of concern in the groundwater samples obtained from the monitoring wells met the City of Ottawa sewer use bylaws for the sanitary sewer with one exception. A detectable concentration of PHC F2 was measured in shallow well, 13-105S. In all other sampled locations, both shallow and deep, the groundwater quality met the Sanitary and Combined Sewer Use Discharge limits.

In addition, if the groundwater monitoring wells are not required for future monitoring purposes, they should be decommissioned in accordance with O.Reg. 903, as amended, of the *Ontario Water Resources Act*.

3) Worker Health and Safety

In our opinion, based on the data acquired to date, no special measures are required during the proposed construction activities to address possible hazards posed by contaminants in the on-site soil and groundwater. Workers can employ normal task appropriate health and safety personal protective measures (to be determined by the appropriate project authority) during construction activities. A project/activity and Site specific health and safety plan must be developed before work proceeds.

4) Affect of Contaminants on the Selection of Construction Materials

In our opinion, the nature and the degree of the contamination discovered during the environmental site assessment activities completed to date do not require special measures/provisions with respect to the specification of materials to be used during construction. Please see the Stantec technical memo documenting the groundwater corrosion potential.

The statements made in this Executive Summary text are subject to the limitations included in Section 10.0, and are to be read in conjunction with the remainder of this report.

1.0 Introduction

Stantec Consulting Ltd (Stantec) conducted environmental site assessment (ESA) work for the Combined Sewage Storage Tunnel (CSST) alignment which consists of an east-west segment and a north-south segment, herein referred to as the "Site", in Ottawa, Ontario. The east-west segment extends east from the Cave Creek Collector located at the intersection of Brockhill Street and Wellington Street in Lebreton Flats, east along Slater Street to the Rideau Canal, across the canal to continue east along Laurier Avenue to Cumberland Avenue, north along Cumberland Avenue to Cathcart Street, east along Cathcart Street across the Rideau River connecting with existing infrastructure at Queen Victoria Street. The north-south segment extends north along Kent Street from Chamberlain Street to east of the Supreme Court building. The alignment is shown on Drawings No. 1 and 2 in **Appendix A**. Stantec completed the ESA work between September 2013 and April 2015, on behalf of the City of Ottawa. The ESA work included a historical review and a soil and groundwater sampling program. It is understood that the portion of the east-west segment from Brockhill Street to Bronson Avenue was previously assessed and is not included in this ESA work.

The purpose of the ESA work was to identify, and evaluate the possible environmental concerns associated with the current and historical activities on properties within, adjacent to, and near the alignment that may adversely affect the proposed tunneling and surface construction activities associated with the CSST.

For the purpose of the historical review, a 250-m distance beyond the centreline of the proposed alignment was assessed for current and historical activities of potential environmental concern.

The historical review consisted of a review of the following sources of information:

- Historical aerial photographs;
- Fire insurance plans;
- Historical reports provided by the National Capital Commission (NCC);
- *Old Landfill Management Strategy, Phase I – Identification of Sites,* October 2004, "Golder Report";
- *The Mapping and Assessment of Former Industrial Sites*, 1988,"Intera Report"; and
- Federal, provincial, municipal and industry databases.

The sampling program included the collection of soil and groundwater samples from select boreholes near planned surface construction sites and identified historical or current potentially contaminating activities. Samples were collected and submitted for laboratory analyses to assess the quality of the soil and groundwater along the alignment.

1.1 OBJECTIVES

The objective of the ESA process was to better determine potential adverse contaminant impacts to the subsurface (soil and groundwater) within the assessment area. This information would be used to support the completion of the following project elements:

- The modification of proposed construction activities, if required;
- The development of appropriate protocols for the protection of health and safety for workers during the Construction Stage;
- The determination of the presence and nature of contaminant impacts in soil and groundwater to better select methods, protocols, and associated costs for the management and/or disposal of contaminant-impacted materials;
- The selection of the appropriate construction materials to ensure compatibility with the contaminants of concern; and
- The development of a more effective tendering process by identifying possible quantities of materials to be disposed, as well as special provisions for the management of materials should it be required (e.g., management of possible contaminated groundwater).

1.2 SCOPE OF WORK

The historical review consisted of an EcoLog ERIS federal, provincial, and private database search for 250 m surrounding the alignment; a historical land use inventory (HLUI) municipal database search provided by the City of Ottawa; fire insurance plans from 1902, updated in 1922, and 1956; the Intera Report from 1988 documenting location and assessment of former industrial sites in Ottawa; historical reports provided by the NCC; the Golder Report from 2004 documenting location and details of former landfills in Ottawa; and aerial photographs from the geoOttawa website.

The sampling program completed by Stantec along the proposed alignment consisted of the collection of soil and groundwater samples from select boreholes and monitoring wells in the vicinity of proposed surface construction and/or site of environmental concern. The borehole drilling and logging, as well as the groundwater monitoring well installation, was undertaken by Golder Associates Ltd.

2.0 Potential Sources of Environmental Impacts

The historical review was completed to determine the potential sources of environmental impact. The primary focus was the proposed locations of surface structures and areas of open excavation (i.e. connection with current infrastructure and tunnel borer entrance pits). The secondary focus was the remainder of the alignment where it is understood that pilot holes are to be drilled during the tunneling activities, approximately every 250 m. Also included in the assessment of the alignment were sites that may have adversely impacted the quality of groundwater as this could affect the groundwater management during construction.

2.1 SURFACE STRUCTURES

Based on a review of the historical sources, locations of potential environmental concern were identified in proximity to many of the proposed locations of surface structures and areas of open excavation. The environmental concerns identified near the surface structures and areas of open excavation include: former fuel storage tanks, gasoline retail outlets with single-walled underground storage tanks (USTs), dry cleaning facilities generating halogenated solvents, and former landfills located on either side of the Rideau River. The proposed positions of surface structures and areas of open excavation are provided in Table 1 along with any sites of potential environmental concern adjacent to the proposed features. Locations of the proposed surface structures and areas of open excavation and the sites of potential environmental are shown on Figure 3 in **Appendix A**.

Table 1 Potential Sources of Environmental Impacts to Surface Structures

Surface Structure Identification	Proposed Surface Structure Location	Current Land Use	Operations of Potential Environmental Concern
Site 2	EWT / NST Intersection	High rise office buildings	Former dry cleaners from at least 1986 to 1990 and from 1999 to 2001. Former foundry located in the block to the southwest of the intersection of Slater Street and Kent Street.
Site 3a	RCI Diversion / Drop and Odour Control Facility	Parkland with walking paths.	Former storage yard for coal and oil.
Site 3c	Nicholas St. Shaft	Parkland with walking paths.	Former railway tracks along the east side of the Rideau Canal.
Site 4	Intersection of Cumberland Street and York Street	Intersection of two roadways.	Former Bytown Gasworks is located to the east of the intersection. Produced ammonium sulphate, coal gas, tar and other products.
Site 5	EWT Outlet/ RRC Diversion	Park land adjacent to the northeast of the Rideau River	Former New Edinburgh and Stanley Park dumps. In operation from at least the early 1920s to the 1950s. Former railway tracks and yard to the northeast of the surface structure.
Site 6	NST Overflow	Parkland and parking lot northeast of the Supreme Court building.	An historical landfill identified behind the Supreme Court building.
Site 7	Intersection of Kent Street and Florence Street	Intersection of two roadways.	No concerns are associated with this location.
Site 8	Intersection of Kent Street and McLeod Street	Intersection of two roadways.	No concerns are associated with this location.
Site 9	Catherine St. Drop	Minute Car Wash, Mini Storage, gym	Minute Car Wash formerly had a self-service gas station with one retail UST. Former lumber, coal and wood storage yard to the southwest, and a former paving company and oil storage facility to the southeast of the proposed structure.
Site 10	Odour Control Facility and Chamberlain Street Drop	Undeveloped land beside the highway.	Former coal storage yard to the west of the proposed structure. Former machine shop and laundry at the proposed structure.

2.2 SUBJECT SITE AND SURROUNDING LAND USE

Based on the historical review, activities were identified that may have impacted the groundwater which will be encountered during the tunneling portion of construction. The sites of potential environmental concern to groundwater along the proposed alignment are summarized in Table 2. Locations of the sites of environmental concern to groundwater are shown on Figure 3 in **Appendix A**.

Table 2 Potential Source of Environmental Impacts to Groundwater

Environmental Concern No. and Address or Location	Location Along Alignment	Current Land Use	Operations of Potential Environmental Concern
EC#1 Bordeleau Park	North of alignment prior to Rideau River Crossing	Parkland adjacent to the southwest of the Rideau River	Former Bordeleau dump from at least the early 1920s to the 1950s.
EC#2 Cathcart Street and Rose Street	South of alignment prior to Rideau River Crossing	Parkland adjacent to the southwest of the Rideau River	Former tannery on the shore of the Rideau River.
EC#3 266 Cathcart Street	Near intersection of Cumberland Street and Cathcart Street	Residential housing	An unknown amount of heating oil spilled to the ground in March 1991. Environmental impact to the land confirmed.
EC#4 227 Cumberland Street	On southeast corner of Cumberland Street and St. Andrew Street	Auto repair garage	Former Petro Canada retail gasoline outlet with a fuel storage tank.
EC#5 305 Cumberland Street	Southeast corner of Cumberland Street and Murray Street	Auto repair garage	Former producer of petroleum distillates and waste oils and lubricants from 1986 to 1995. Expired licenses for full service gas station.
EC#6 George Street and Cumberland Street	Northeast corners of Cumberland Street and George Street	High rise apartment building with commercial space on ground floor.	Former retail gasoline outlet.
EC#7 Rideau Street and Cumberland Street	Intersection of Rideau Street and Cumberland Street	High rise office building and high rise condominiums.	Former retail gasoline outlets at the east and west corners of the intersection.
EC#8 19 Stewart Street	North side of Stewart Street between Cumberland Street and Nicholas Street.	Single family houses.	Former factory with foundry and blacksmith.
EC#9 77 Metcalfe Street	North of Slater Street on Metcalfe	High rise office building	Former dry cleaner and producer of halogenated solvents from at least 1986 to 1998.
EC#10 222 Albert Street	Southeast corner of Albert Street and Bank Street	Dry cleaners	Multiple past dry cleaners and producers of halogenated solvents from at least 1986 to present. Former location of a foundry, plating company and fabric dyer.
EC #11 320 Queen Street	Southwest corner of Queen Street and Kent Street	High rise office buildings	Former dry cleaners and producers of halogenated solvents from 1990 to 1998. Former street car sheds.

Environmental Concern No. and Address or Location	Location Along Alignment	Current Land Use	Operations of Potential Environmental Concern
EC#12	260 to 264 Sparks Street	Retail and office buildings	Former printer and textile dyer.
EC# 13 280 Gloucester Street	Southwest corner of Gloucester Street and Kent Street	St Patrick Church	Release of an unknown amount of heating oil to soil with land contamination possible.
EC#14 Lisgar Street and Kent Street	Northeast corner of Kent Street and Lisgar Street	High rise condominium building.	Former retail gasoline outlet.
EC#15 429 Somerset Street West	Northeast corner of Kent Street and Somerset Street	High rise condominium building	Expired licenses for a full service gas station and retail fuel tanks.
EC#16 Somerset Street W and Kent Street	Intersection of Somerset Street West and Kent Street	Budget car rental	Ottawa Hydro reportedly found gasoline within an excavation at the intersection in August 1994.
EC#17 328 Kent Street	Southwest corner of Somerset Street and Kent Street	Residential houses	Former full service gas station with retail fuel tanks.
EC#18 435 Gladstone Street	Northeast corner of Gladstone Street and Kent Street	High rise condominiums	Former Main Garage Ltd with full service gas station with three 22,600 L underground storage tanks installed in 1986.

2.3 TOPOGRAPHY AND DRAINAGE

Based on a review of topographic information from NTS Map 31G/5 (Energy, Mines, and Resources Canada), Google Earth™, the City of Ottawa webpage (http://maps.ottawa.ca/geoOttawa/), and on the conditions observed during the assessment, the topography within the assessment area is generally flat, displaying a gradual slope towards the south along Kent Street; and sloping towards the west at the west end of Slater Street. The inferred local shallow groundwater flow direction within the assessment area is generally to the north towards the Ottawa River, or to the east towards the Rideau River at the east end of the east-west alignment.

It is difficult to determine the principal direction of shallow groundwater flow without site-specific data because several factors such as local topography, water courses, and underground structures can alter the flow pattern at a local scale. However, the local shallow groundwater typically mimics the topography and is most influenced by water courses at a local scale.

2.4 REVIEW OF PREVIOUS REPORTS

Previous reports provided to Stantec by the National Capital Commission were reviewed and are summarized in **Appendix B**. Below is a brief summary of the locations investigated in the reports. The reports were provided for information purposes only and were not to be relied upon.

2.4.1 Bordeleau Park

According to the previous reports reviewed, a Phase I ESA, Phase II ESA and Screening Level Risk Assessment (SLRA) were completed between February 2004 and October 2005, to address environmental concerns of the soil and groundwater quality at Bordeleau Park due to historical activities. The contaminants found in soil included: metals, polycyclic aromatic hydrocarbons (PAHs), and benzene toluene, ethylbenzene and xylenes (BTEX); and groundwater contaminants identified included: metals and PAHs. Bordeleau Park is located at the northeast corner of King Edward Avenue and Cathcart Street on the southwest shore of the Rideau River near EC#2. The SLRA did not identify unacceptable health risks to park visitors, park construction workers or park maintenance workers, or unacceptable ecological risk to terrestrial receptors from the contaminants identified in the Phase II ESA. The groundwater sampling data did not indicate any adverse effect on the Rideau River. The wells were decommissioned according to O.Reg. 903 in March, 2006.

2.4.2 New Edinburgh Park

New Edinburgh Park is located on a point on the northeast bank of the Rideau River near the linear portion of surface structure Site 5. A Phase I ESA and SLRA were conducted at New Edinburgh Park between February 2004 and September 2004. The SLRA recommended completing a detailed delineation of the impacts followed by a quantitative human health and ecological risk assessment due to moderate health risks being identified for adults and children visiting the park. The 2009 sampling plan, completed by October 2011, did not identify any provincial exceedances in the groundwater samples; however, an additional round of groundwater sampling was recommended to monitor the slight federal exceedances of metals and PAHs identified in groundwater. The Human Health and Ecological Risk Assessment (HHERA), report dated March 30, 2012, identified risk to visitors and park maintenance workers due to carcinogenic PAHs and lead concentrations in the soil. The recommendations included capping the site with 0.30 m of clean fill material; any soils excavated should be disposed appropriately. The recommended 2012 groundwater and surface water sampling program did not identify exceedances in the groundwater with the exception of some metals. Surficial soil sampling was completed to delineate the areas for capping. The remediation consisted of the removal of selected trees and vegetation, excavation of contaminated fill and for drainage swales, and capping of the property with clean soil cap placed directly on the contaminated fill.

2.4.3 Confederation Park

Confederation Park is located north of Laurier Avenue between Elgin Street and the Rideau Canal and contains surface structure Site 3a. The reports reviewed included a Phase I ESA, Phase II ESA, Supplemental Phase II ESA, and SLRA completed between February 2011 and September 2014. PAH and metal impacts were identified in the subsurface soils and groundwater; however, no potential risk was identified to park workers, park visitors, and festival attendees, based on exposure to surficial soils. No ecological risk was identified for ornamental or fruit bearing plants, nor to humans by translocation of contaminants to the fruit of the fruit bearing trees. Excavated subsurface soils and groundwater should

be managed to mitigate the risk of exposure to metals and PAH parameters by preventing dermal contact or accidental ingestion.

2.4.4 Other Reports

Reports were reviewed of several areas in the vicinity of the alignment but not directly affecting any surface structure sites. The reports consisted of Phase I ESAs, Phase II ESA, and soil sampling of fill material. The recommendations ranged from no further work to additional soil sampling to delineate soil impacts and a risk assessment to manage the widespread soil impacts.

3.0 Regulatory Framework

In Ontario, the roles and powers of the Ministry of the Environment and Climate Change (MOECC) when dealing with contaminated sites are outlined primarily in the Environmental Protection Act (R.S.O. 1990).

The MOECC has a mandate to deal with situations where there is an adverse effect, or the likelihood of an adverse effect, associated with the presence or discharge of a contaminant.

Ontario Regulation 153/04 – Records of Site Condition Part XV.1 of the Act, as amended, provides advice and information to property owners and consultants to use when assessing the environmental condition of a property, when determining whether or not restoration is required and in determining the kind of restoration needed to allow continued use or reuse of the site.

The Soil, Ground Water, and Sediment Standards for Use Under Part XV.I of the Environmental Protection Act, dated April 15, 2011, (Ontario Standards) provides generic numerical standards for soil and groundwater quality presented as a function of land use, soil texture (medium to fine or coarse) groundwater usage (potable or non-potable), and remediation approach (full depth or stratified).

Soil sample results from the boreholes advanced on-site were compared to the Full Depth Background Site Condition Standards for residential/parkland/industrial/community property use found in Table 1 of the Ontario Standards. Comparison of analytical results to this Standard was completed to assess if excess soils generated from the proposed construction activities could be classified as "inert" fill. In general, excess soils that do not meet the Table 1 standards, and therefore are not classified as "inert" fill, must be disposed at a MOECC-approved landfill. The soil sample analytical results were also compared to the Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for industrial/commercial/community property use found in Table 3 of the Ontario Standards. Comparison of the analytical results to this Standard was completed at the request of the City.

The groundwater analytical results were compared to criteria provided by the City of Ottawa Sewer Use By Law (By-law No. 2003-514) for discharge to the City's sewer system. The results were compared to both the Table 1 – Limits for Sanitary and Combined Sewers Discharge and the Table 2 – Limits for Storm Sewer Discharge. Comparison to these limits enables a better understanding of the management and disposal options for potentially impacted groundwater generated during construction activities at the Site. By comparison to the sewer discharge limits we can better assess if groundwater generated during construction can be disposed directly to the sanitary or storm sewer without treatment. The groundwater analytical results were also compared to the Ontario Table 3 Standards. Comparison of the analytical results to this Standard was completed at the request of the City.

4.0 Field Investigation

The borehole drilling and logging of soil type, as well as the groundwater monitoring well installation, was undertaken by Golder Associates Ltd. For further information regarding borehole logging, and monitoring well installation, please see reports produced by Golder Associates Ltd.

4.1 METHODOLOGY

The field investigation was conducted in accordance with the Stantec Ottawa office Quality Management System (ISO 9001:2000), registered by BSI Management Systems. Any deviations from the standard protocols are described in the following sections. The field methodology is summarized in **Appendix C**.

The soil vapour concentration readings were made by Stantec during the collection of soil samples from select boreholes. Soil vapour concentrations are provided in Table 1, **Appendix E**. Please see the Golder Associates Ltd. *Geotechnical Data Report,* for further information on borehole drilling and logging.

There are no regulatory criteria for combustible soil vapour; however, elevated vapour concentrations (greater than 500 ppmv) are generally indicative of the presence of volatile petroleum products (i.e., gasoline, and, to a lesser extent, diesel and fuel oil). Concentrations vary with both hydrocarbon type and age, and it should be noted that the readings are intended as a field screening tool to provide only a qualitative indication of hydrocarbon levels and are not directly equivalent to soil analytical results.

Based on soil vapour concentrations, field observations and/or proximity to the water table, soil samples from the 22 borehole locations were submitted to Maxxam Analytics in Ottawa, Ontario, for laboratory analyses by approved methodologies to determine the soil quality in each location. The soil samples were submitted for analyses of petroleum hydrocarbon fractions F1 to F4 (PHC F1 to F4), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), metals and inorganics, and pH. Based on low soil recovery in some locations, only one sample was submitted for laboratory analyses instead of the initially proposed two samples.

Select monitoring wells were monitored prior to the collection of groundwater samples. The depth to groundwater, organic vapours, and the presence or absence of a petroleum hydrocarbon sheen were recorded. The monitoring results are presented in Table D-2, **Appendix D**. Groundwater samples were collected using low flow methodology in order to reduce the loss of volatile organic compounds during sampling. During the collection of groundwater, physical parameters (including temperature, total dissolved solids, conductivity, pH, oxidation/reduction potential, turbidity and dissolved oxygen) of the water were recorded to ensure that formation water was collected. The physical parameters are summarized in Table D-3, Appendix D. Groundwater samples were submitted to Maxxam Analytics for analysis of PHC F1 to F4, VOCs, metals, and PAHs. Due to low volumes of groundwater recovery, not all contaminants of concern were assessed at each location.

Maxxam Analytics is accredited by the Canadian Association for Laboratory Accreditation (CALA) and by the National Institute of Standards and Technology (NIST) for the specific environmental analytical methods listed in the scope of accreditation approved by the NIST and registered with CALA.

A copy of each Laboratory Certificate of Analysis for the submitted samples is provided in **Appendix F.**

The soil and groundwater samples were collected between September 2013 and April 2015. The conditions may have changed since sample collection, altering the conditions documented in this report.

During the evolution of the design for the CSST alignment, monitoring wells were installed and soil and groundwater samples were collected from locations on alignment alternatives that were eventually ruled out once the preferred alignment was selected. These analytical results from these sample locations are not provided or discussed in this report.

5.0 Results

As discussed in Section 1.2, the scope of work for the sampling program was designed to assess the environmental conditions along the proposed CSST alignment. It should be noted that the groundwater quality described herein is representative of pre-construction conditions. The quality of groundwater to be removed during the construction activities should be re-assessed prior to and during construction unwatering activities as the groundwater flow regime and groundwater quality may be significantly modified locally, by the unwatering activities.

The soil and groundwater analytical results are presented in Tables E2 to E9 in **Appendix E**. Relevant soil and groundwater quality standards, and relevant municipal sewer discharge limits are provided for comparison and exceedances of the applicable standards are indicated in the tables.

Combustible vapours were monitored in each groundwater monitoring well using an RKI Eagle prior to sampling. The combustible vapour concentrations ranged between 5 ppmv (multiple locations) to 225 ppmv (MW12-4). The combustible vapour concentrations are presented in Table D1 in **Appendix D**.

5.1 SURFACE STRUCTURE SITE #2

Non-aqueous phase liquids and sheens were not observed in the soil or groundwater samples recovered from boreholes or monitoring wells during the assessment.

A summary of the results for Surface Structure Site #2 is provided in Table 3.

Table 3: Site #2 Field and Analytical Results

Sampling location	Depths Sampled (m bgs)	Highest Soil Vapour concentration	Soil Table 1 Exceedances	Groundwater Sanitary / Combined Sewer Use Exceedances	Groundwater Storm Sewer Use Exceedances
13-201	0.31-1.80	0 ppm	Metals	None	None

m bgs – metres below ground surface.
ppm – parts per million by volume.

One soil sample collected from location 13-201 contained lead concentrations exceeding Ontario Table 3. There were no concentrations in groundwater that exceeded the Ontario Table 3 Standard.

5.2 SURFACE STRUCTURE SITE #3A

Non-aqueous phase liquids and sheens were not observed in the soil or groundwater samples recovered from boreholes or monitoring wells during the assessment.

A summary of the results for Surface Structure Site #3a is provided in Table 4.

Table 4: Site #3a Field and Analytical Results

Sampling location	Depths Sampled (m bgs)	Highest Soil Vapour concentration	Soil Table 1 Exceedances	Groundwater Sanitary / Combined Sewer Use Exceedances	Groundwater Storm Sewer Use Exceedances
13-205	0.76-1.37 2.29-2.90	20 ppm	PHC, PAHs, Metals	None	Metals
13-319	0.76-1.37	100 ppm	PHC, metals	None	Metals

m bgs – metres below ground surface.
ppm – parts per million by volume.

Soil collected from 13-205 contained concentrations of lead and benzo(a)pyrene exceeding the Ontario Table 3 Standards. The concentrations in the soil sample collected from 14-319 were less than the Ontario Table 3 Standards with the exception of the vanadium concentration in 14-319 SS2. There were no concentrations in groundwater that exceeded the Ontario Table 3 Standard in the groundwater samples collected from 13-205 and 14-319.

5.3 SURFACE STRUCTURE SITE #3C

Non-aqueous phase liquids and sheens were not observed in the soil or groundwater samples recovered from boreholes or monitoring wells during the assessment.

A summary of the results for Surface Structure Site #3C is provided in Table 5.

Table 5: Site #3C Field and Analytical Results

Sampling location	Depths Sampled (m bgs)	Highest Soil Vapour concentration	Soil Table 1 Exceedances	Groundwater Sanitary / Combined Sewer Use Exceedances	Groundwater Storm Sewer Use Exceedances
13-209	0.91 - 1.52	0 ppm	None	None	None
	4.57 - 5.18		Metals	None	Metals

m bgs – metres below ground surface.
ppm – parts per million by volume.

Soil collected from 13-209 contained concentrations of vanadium exceeding the Ontario Table 3 Standards. There were no concentrations in groundwater that exceeded the Ontario Table 3 Standard.

5.4 SURFACE STRUCTURE SITE #4

Non-aqueous phase liquids and sheens were not observed in the soil or groundwater samples recovered from boreholes or monitoring wells during the assessment.

A summary of the results for Surface Structure Site #4 is provided in Table 6.

Table 6: Site #4 Field and Analytical Results

Sampling location	Depths Sampled (m bgs)	Highest Soil Vapour concentration	Soil Table 1 Exceedances	Groundwater Sanitary / Combined Sewer Use Exceedances	Groundwater Storm Sewer Use Exceedances
13-213	2.29-2.90	15 ppm	None	None	None

m bgs – metres below ground surface.
ppm – parts per million by volume.

Soil and groundwater collected from 13-213 contained concentrations less than the Ontario Table 3 Standard.

5.5 SURFACE STRUCTURE SITE #5

Non-aqueous phase liquids and sheens were not observed in the soil or groundwater samples recovered from boreholes or monitoring wells during the assessment.

A summary of the results for Surface Structure Site #5 is provided in Table 7.

Table 7: Site #5 Field and Analytical Results

Sampling location	Depths Sampled (m bgs)	Highest Soil Vapour concentration	Soil Table 1 Exceedances	Groundwater Sanitary / Combined Sewer Use Exceedances	Groundwater Storm Sewer Use Exceedances
13-110	1.52-2.13	10 ppm	VOCs, PAHs, metals	None	None
13-227	0.76-1.37	15 ppm	VOCs, metals	None	None
14-228	2.29-2.61	40 ppm	VOCs, PHCs, PAHs	None	None

m bgs – metres below ground surface.
ppm – parts per million by volume.

The soil sample collected from 13-110 contained concentrations exceeding the Ontario Table 3 Standard for metal and PAH parameters. Soil collected from 14-228 contained concentrations exceeding the Ontario Table 3 Standard for benzo(a)pyrene, and VOC parameters. Groundwater concentrations did not exceed the Ontario Table 3 Standard.

5.6 SURFACE STRUCTURE SITE #6

Non-aqueous phase liquids and sheens were not observed in the soil or groundwater samples recovered from boreholes or monitoring wells during the assessment.

A summary of the results for Surface Structure Site #6 is provided in Table 8.

Table 8: Site #6 Field and Analytical Results

Sampling location	Depths Sampled (m bgs)	Highest Soil Vapour concentration	Soil Table 1 Exceedances	Groundwater Sanitary / Combined Sewer Use Exceedances	Groundwater Storm Sewer Use Exceedances
13-229	1.52-2.13 2.29-2.90	0 ppm	PHCs, PAHs, metals	None	Metals
14-502	0.76-1.37 3.05-3.57	0 ppm	PAHs, metals	None	None

m bgs – metres below ground surface.
ppm – parts per million by volume.

The soil samples collected from 14-502 contained concentrations exceeding the Ontario Table 3 Standard for lead and PAH parameters. Groundwater concentrations from 14-502 did not exceed the Ontario Table 3 Standard. Groundwater samples collected from 13-229 exceeded the Ontario Table 3 Standard for manganese.

5.7 SURFACE STRUCTURE SITE #7

Non-aqueous phase liquids and sheens were not observed in the soil or groundwater samples recovered from boreholes or monitoring wells during the assessment.

A summary of the results for Surface Structure Site #7 is provided in Table 9.

Table 9: Site #7 Field and Analytical Results

Sampling location	Depths Sampled (m bgs)	Highest Soil Vapour concentration	Soil Table 1 Exceedances	Groundwater Sanitary / Combined Sewer Use Exceedances	Groundwater Storm Sewer Use Exceedances
13-231	2.29-2.90 8.38-8.99	90 ppm	None	None	None

m bgs – metres below ground surface.
ppm – parts per million by volume.

Soil and groundwater collected from 13-231 contained concentrations less than the Ontario Table 3 Standard.

5.8 SURFACE STRUCTURE SITE #8

Non-aqueous phase liquids and sheens were not observed in the soil or groundwater samples recovered from boreholes or monitoring wells during the assessment.

A summary of the results for Surface Structure Site #8 is provided in Table 10.

Table 10: Site #8 Field and Analytical Results

Sampling location	Depths Sampled (m bgs)	Highest Soil Vapour concentration	Soil Table 1 Exceedances	Groundwater Sanitary / Combined Sewer Use Exceedances	Groundwater Storm Sewer Use Exceedances
13-113	2.20-2.80	NM	None	None	None

m bgs – metres below ground surface.
ppm – parts per million by volume.
NM – not monitored.

Soil and groundwater collected from 13-113 contained concentrations less than the Ontario Table 3 Standard.

5.9 SURFACE STRUCTURE SITE #9

Non-aqueous phase liquids and sheens were not observed in the soil or groundwater samples recovered from boreholes or monitoring wells during the assessment.

A summary of the results for Surface Structure Site #9 is provided in Table 11.

Table 11: Site #9 Field and Analytical Results

Sampling location	Depths Sampled (m bgs)	Highest Soil Vapour concentration	Soil Table 1 Exceedances	Groundwater Sanitary / Combined Sewer Use Exceedances	Groundwater Storm Sewer Use Exceedances
13-234	4.57-5.18	20 ppm	PHC, metals	None	Metals

m bgs – metres below ground surface.
ppm – parts per million by volume.

Soil collected from 13-234 contained vanadium concentrations exceeding the Ontario Table 3 Standard. Groundwater concentrations were less than the Ontario Table 3 Standard.

5.10 SURFACE STRUCTURE SITE #10

Non-aqueous phase liquids and sheens were not observed in the soil or groundwater samples recovered from boreholes or monitoring wells during the assessment.

A summary of the results for Surface Structure Site #10 is provided in Table 12.

Table 12: Site #10 Field and Analytical Results

Sampling location	Depths Sampled (m bgs)	Highest Soil Vapour concentration	Soil Table 1 Exceedances	Groundwater Sanitary / Combined Sewer Use Exceedances	Groundwater Storm Sewer Use Exceedances
14-401*	2.29-2.90	60 ppm	Metals	None	Metals
14-402	1.22-1.83 2.44-3.05	60 ppm	PAHs, VOCs, metals	None	Metals

m bgs – metres below ground surface.
ppm – parts per million by volume.
* - 14-401 was drilled to assess the soil and groundwater conditions at the odour control facility in the vicinity of Site #10.

Soil collected from 14-401 and 14-402 contained vanadium concentrations exceeding the Ontario Table 3 Standard, and 14-402 SS3 contained concentrations of 1,1,2-trichloroethane exceeding the Ontario Table 3 Standard. Groundwater concentrations in samples collected from 14-401 and 14-402 did not exceed the Ontario Table 3 Standard.

5.11 ENVIRONMENTAL CONCERN LOCATIONS

Soil and groundwater samples were collected from boreholes and monitoring wells installed in the vicinity of select locations of environmental concerns. The soil and groundwater results are summarized in Table 13.

Table 13: Summary of Environmental Concern Results

Environmental Concern No.	Sample Location	Sample Interval (m bgs)	Soil Parameters Exceeding Ontario Standards -		Groundwater Parameters Exceeding Sewer Use By-Law		Groundwater Exceeding Ontario Standards
			Table 1[1]	Table 3[2]	Sanitary/Combined	Storm	Table 3[2]
EC#5	**BH13-105**	3.05-3.66	Metals	None	PHC	PHC	PHC, metals
EC#2	**BH13-107**	0.61-1.22	PHCs, PAHs	PAHs	None	Metals	None
EC#3	**14-220A**	0.76-1.37 2.80-3.66	Metals	Metals	None	Metals	None

Environmental Concern No.	Sample Location	Sample Interval (m bgs)	Soil Parameters Exceeding Ontario Standards -		Groundwater Parameters Exceeding Sewer Use By-Law		Groundwater Exceeding Ontario Standards
			Table 1[1]	Table 3[2]	Sanitary/Combined	Storm	Table 3[2]
EC#6	**14-316**	2.89-3.58 3.58-4.30	Metals	None	None	Metals	None
EC#14	**14-317**	3.81-4.42	Metals	Metals	None	Metals	None

Notes:

1 Table 1 Full Depth Background Site Condition Standards, Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, 2009 (Ontario Standards Table 1).

2 Table 3 Full Depth Generic Site Condition Standard in a Non-Potable Groundwater Condition, Industrial/Commercial/Community Property Use, Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, 2009 (Ontario Standards Table 3).

m bgs metres below ground surface

6.0 Discussion of Impacted Soil Extents

The soil sampling program understaken as part of the ESA work was designed to identify areas where soil impacts may be encountered during construction of the CSST. However, the sampling conducted does not provide delineation of the impacts identified along the alignment. The positions of the impacts identified by the sampling have been extrapolated using a 'half-way to the next clean location" approach. This is a conservative approach to assist in the definition of soil volumes that may require management during construction.

Table 14 presents the vertical and horizontal extents of Table 1 soil impacts likely to be encountered during construction based on this 'half-way to next clean location' approach. Where horizontal distances between sample locations did not support the application of this approach, modifications were made and are identified in the table. The horizontal extents of Table 1 soil impacts along the alignment are presented on Figure 6 in **Appendix A**.

As there are many potential sources of Table 1 soil impacts (i.e., minor spills and leaks, quality of fill, etc.), soil requiring management during construction may be encountered in other locations along the alignment, not identified in Table 14 and shown on Figure 6 in **Appendix A**. We recommend soil sampling and analysis prior to soil disposal during construction to confirm appropriate disposal options.

Table 14: Potential Extent of Soil Impacts

Surface Structure / Environmental Concern No.	Borehole Location	Sample Exceeding Table 1 Standard	Depth Interval (m bgs)	Portion Along Alignment	Comments on Approach
SS2	**13-201**	**BH13-201**	From ground surface to bedrock	K to L O to P	Used half the distance to the closest clean hole in all directions
SS3	**13-205**	**BH13-205 SS1**	From ground surface to bedrock	I to J	Half-way to next clean location
		BH13-205 SS3			
	14-319	**14-319 SS2**	Ground surface to 9.14		
	13-209	**BH13-209 SS6**	1.5 to bedrock		
EC#6	**14-316**	**14-316 SS1**	From ground surface to bedrock	G to H	Half-way to next clean location
		14-316 SS2			
SS5	**13-110**	**BH13-110 SS4**	From ground surface to bedrock	A to B	Half-way to next clean location and to the end of the alignment
	13-227	**BH13-227 SS2**			

Surface Structure / Environmental Concern No.	Borehole Location	Sample Exceeding Table 1 Standard	Depth Interval (m bgs)	Portion Along Alignment	Comments on Approach
	14-228	**14-228 SS3**			
SS6	**14-502**	**14-502 SA3**	From ground surface to bedrock	M to N	Half-way to next clean location and to the end of the alignment
		14-502 SA 5			
EC#12	**13-229**	**BH13-229 SS3**	From ground surface to bedrock		
		BH13-229 SS4			
SS9	**13-234**	**BH13-234 SS6**	1.5 to bedrock	S to T	Half-way to next clean location and to the end of the alignment
SS10	**14-401**	**14-401 SS5**	1.8 to bedrock		
	14-402	**14-402 SS3**	From ground surface to bedrock		
		14-402 SS5			
EC#2	**13-107**	**BH13-107**	From ground surface to bedrock	Not on preferred alignment	n/a
EC#3	**14-220**	**14-220A SS1**	From ground surface to bedrock	C to D	Half-way to next clean location
		14-220A SS4			
EC#5	**13-105**	**13-105 SS1**	From ground surface to bedrock	E to F	Half-way to next clean location
EC#14	**14-317**	**14-317 SS1**	From ground surface to 6.1	Q to R	Used half the distance to the closest clean hole in all directions

7.0 Quality Assurance/Quality Control

To assess whether quality standards associated with the field program were achieved, a quality assurance/quality control (QA/QC) program was included as a component of the groundwater monitoring program. Blind groundwater field duplicates were submitted for laboratory analysis to evaluate both laboratory precision and the implemented field sampling and handling procedures. Five blind groundwater duplicates were collected and submitted for laboratory analysis during the sampling period. The Relative Percent Difference (RPD) of the original and duplicate samples is calculated to evaluate the precision of the analytical results.

Relative percent difference (RPD) is defined as the absolute value of the variation between a sample and its duplicate, when compared to the average concentration of the original and the duplicate. It is used to assess the validity of the field and laboratory analytical procedures.

7.1.1.1 Groundwater Blind Field Duplicates

RPDs for VOCs, PHC F1 to F4, PAH, and metals parameters were calculated using analytical results of the original and blind duplicate groundwater samples recovered from the shallow/medium monitoring wells 13-205B (duplicate 2014-D), 13-207B (duplicate 2013-A), 13-231C (duplicate 2014-C), and 14-228S (duplicate MW14-A) during the groundwater sampling events. The calculated RPDs for various parameters ranged between 0% and 70%. Several RPD values could not be calculated as measured concentrations in one or both of the original and duplicate samples were less than five times the value of the laboratory detection limits.

The measured RPDs do not suggest that inconsistencies in either the field collection or laboratory analytical methods impacted the analytical results.

8.0 Conclusions

Based on the results of the ESA work competed to date, Stantec makes the following conclusions:

1) Soil and Groundwater Assessment Criteria

The analyses of the contaminants of concern were compared to the Full Depth Background Site Condition Standards provided in Table 1 of the Ontario Standards to better assess soil management options. According to MOECC policy, soil and like material that meets the Table 1 Ontario Standards is considered inert and therefore may be placed as fill at any unrestricted receiving site. However, soil that does not satisfy the Ontario Standards Table 1 must be disposed at an MOECC-approved landfill if the material cannot be appropriately re-used within the Site bounds.

The groundwater quality within the proposed alignment was compared to City of Ottawa sanitary and combined sewer and storm sewer discharge limits to better determine groundwater management and disposal options should they be required. A comparison of the analyses to the discharge limits determines if groundwater generated during the construction stage can be disposed directly to the sanitary/combined or storm sewers without treatment.

2) Contaminant Impacts to Soil and Groundwater

Table 15 below provides a summary of the samples in which concentrations of contaminants of concern were greater than the Table 1 soil quality standards.

The soil analytical results are presented in Tables E2 to E5 in **Appendix E.** The soil quality standards are provided for comparison and exceedances of the standards are indicated in the tables.

Table 15: Summary of Exceedances of Table 1 Soil Quality Standards

Surface Structure or Environmental Concern Number and Location	Sample Location	Sample Interval (m bgs)	Parameters Exceeding Ontario Standards - Table 1[1]
Site 2 EWT / NST Intersection	13-201	0.31-1.80	Metals
Site 3a RCI Diversion / Drop	13-205 SS1	0.76-1.37	PAHs, metals
	13-205 SS3	2.29-2.90	PHCs, metals
	14-319 SS2	0.76-1.37	PHCs, metals
Site 3c Nicholas St. Shaft	13-209 SS6	4.57-5.18	Metals
Site 5 EWT Outlet/ RRC Diversion	13-110 SS4	1.52-2.13	VOCs, PAHs, metals
	13-227 SS2	0.76-1.37	VOCs, metals

Surface Structure or Environmental Concern Number and Location	Sample Location	Sample Interval (m bgs)	Parameters Exceeding Ontario Standards - Table 1[1]
	13-228 SS3	2.29-2.61	VOCs, PAH, PHC
Site 6 NST Overflow	13-229 SS3	1.52-2.13	PHCs, PAHs
	13-229 SS4	2.29-2.90	PHCs, PAHs, metals
	14-502 SA3	0.76-1.37	PAHs
	14-502 SA5	3.05-3.51	PAHs, metals
Site 9 Catherine St. Drop	13-234 SS6	4.57-5.18	PHCs, metals
Site 10 Chamberlain Street Drop	14-401 SS5	2.29-2.90	Metals
	14-402 SS3	1.22-1.83	PAHs, VOCs
	14-402 SS5	2.44-3.05	Metals
EC#1 and EC#2 West side of Rideau River	13-107	0.61-1.22	PHCs, PAHs
EC#3 Cumberland Street and Cathcart Street	14-220A SS1	0.76-1.37	Metals
	14-220A SS4	2.80-3.66	Metals
EC#6 Cumberland Street and George Street	14-316 SS1	2.89-3.58	Metals
	14-316 SS2	3.58-4.42	Metals
EC#14 Kent Street and Lisgar Street	14-317 SS1	3.81-4.42	Metals

Notes:

1 Table 1 Full Depth Background Site Condition Standards, Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, 2009 (Ontario Standards Table 1).

m bgs metres below ground surface

Concentrations of contaminants of concern in groundwater collected from the shallow monitoring wells did not exceed the City of Ottawa Sanitary/Combined Sewer or the Storm Sewer Discharge limits, except for the following:

- Total PAHs exceeding the Storm Sewer Use Discharge Limits in 14-221S;
- zinc concentrations in 13-203B exceeding the Storm Sewer Use Discharge limits;
- manganese at all locations except MW13-111B, 13-201B, 14-223 , 14-223A, 13-227S, MW13-231C, and 14-502 exceeding the Storm Sewer Use Discharge limits; and

- PHC F2 detectable concentrations in 13-105S exceeding the Combined Sanitary Sewer and Storm Sewer Use Discharge limits.

Concentrations of contaminants of concern in groundwater collected from the deep monitoring wells did not exceed the City of Ottawa Sanitary/Combined or the Storm Sewer Discharge limits, with the exception of manganese concentrations exceeding the Storm Sewer Discharge limits at 13-229.

The widespread distribution of slight manganese exceedances suggests that concentrations measured in the samples are reflective of background values and do not represent environmental concern.

9.0 Materials Management Plan

Based on the findings of the ESA work, Stantec Consulting Ltd. makes the following recommendations:

1) Soil Management and Disposal

We recommend that soil and soil-like material that is disturbed and excavated within the project bounds be managed according to the following procedures:

c) Retain/reuse within the Site bounds as much soil as possible, including soil that does not meet the soil quality standards provided in Table 1, Ontario Standards, (i.e., soil that is not considered "inert"). Soil to be reused must meet the applicable required geotechnical specifications.

d) Soil that cannot be accommodated on the Site and that exceeds the Table 1 Ontario Standards and must be disposed off-site, it must be placed at an MOECC-approved landfill because it does not satisfy the inert fill quality criteria as we understand it to be applied by the MOECC.

e) Manage excavated or stockpiled subsurface soil that exceeds Table 1 Standards so it does not leach contaminants onto surface soils. It is a recommended best management practice for all excavated soils, but a requirement for soils exceeding the Table 1 Standards.

2) Groundwater Quality

Concentrations of contaminants of concern in the groundwater samples obtained from the monitoring wells met the City of Ottawa sewer use bylaws for the sanitary sewer with one exception. A detectable concentration of PHC F2 was measured in shallow well, 13-105S. In all other sampled locations, both shallow and deep, the groundwater quality met the Sanitary and Combined Sewer Use Discharge limits. Total suspended solids (TSS) should be monitored in any groundwater to be discharged during construction activities.

These conclusions are based solely on the analyses of groundwater samples obtained during the ESA work. The quality of groundwater that may be removed during the construction activities should be assessed at that time to determine if it may be disposed directly to the local sanitary sewer without treatment. The groundwater flow regime may be significantly modified locally during unwatering activities, which could potentially result in significant changes to the groundwater quality.

In addition, if the groundwater monitoring wells are not required for future monitoring purposes, they should be decommissioned in accordance with O.Reg. 903, as amended, of the *Ontario Water Resources Act*.

3) Worker Health and Safety

In our opinion, based on the data acquired to date, no special measures are required during the proposed construction activities to address possible hazards posed by contaminants in the on-site soil and groundwater. Workers can employ normal task appropriate health and safety personal protective measures (to be determined by the appropriate project authority) during construction activities. A project/activity and Site specific health and safety plan must be developed before work proceeds.

4) Affect of Contaminants on the Selection of Construction Materials

In our opinion, the nature and the degree of the contamination discovered during the environmental site assessment activities completed to date do not require special measures/provisions with respect to the specification of materials to be used during construction. Please see the Stantec technical memo documenting the groundwater corrosion potential.

10.0 Closure

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

This report is limited by the following:

- *soil and groundwater samples were collected between September 2013 and April 2015. Due to the length of time elapsed since sample collection in some locations, subsurface conditions may have changed since the data presented in this report was collected.*

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (e.g.,

utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site. As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report.

This report was prepared by Brenda Thom, M.Sc.(Eng.), with contributions from Jon Urben, M.Sc., and Jean-Philippe Gobeil, M.Sc., and reviewed by Jill Peters-Dechman, P.Eng., QP_{ESA}.

Regards,

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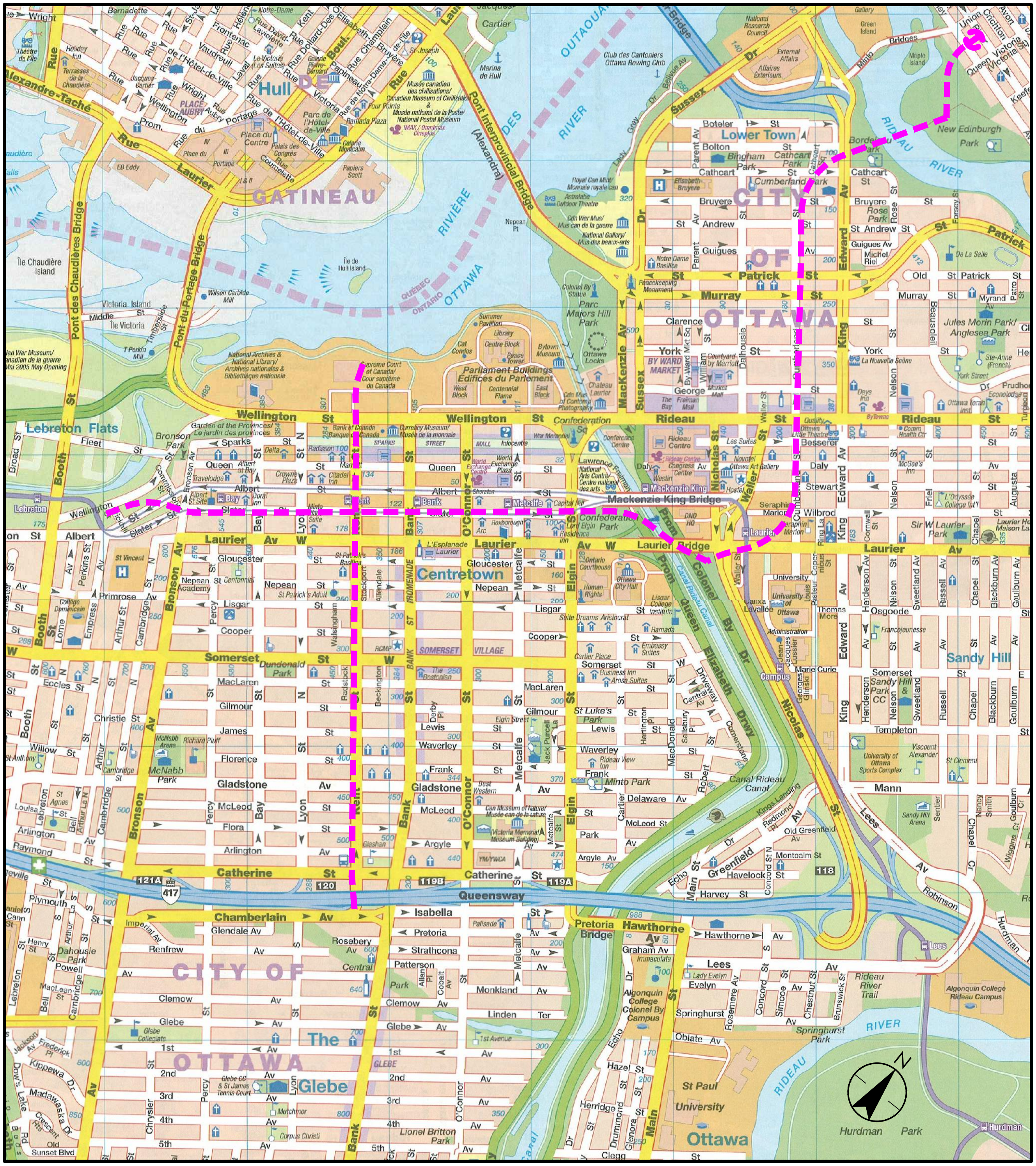
Appendix A
Figures



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January 2015
Project No. 163401060

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Legend

Proposed Tunnel

Notes

Baseplan from MapArt 2006.

Client/Project

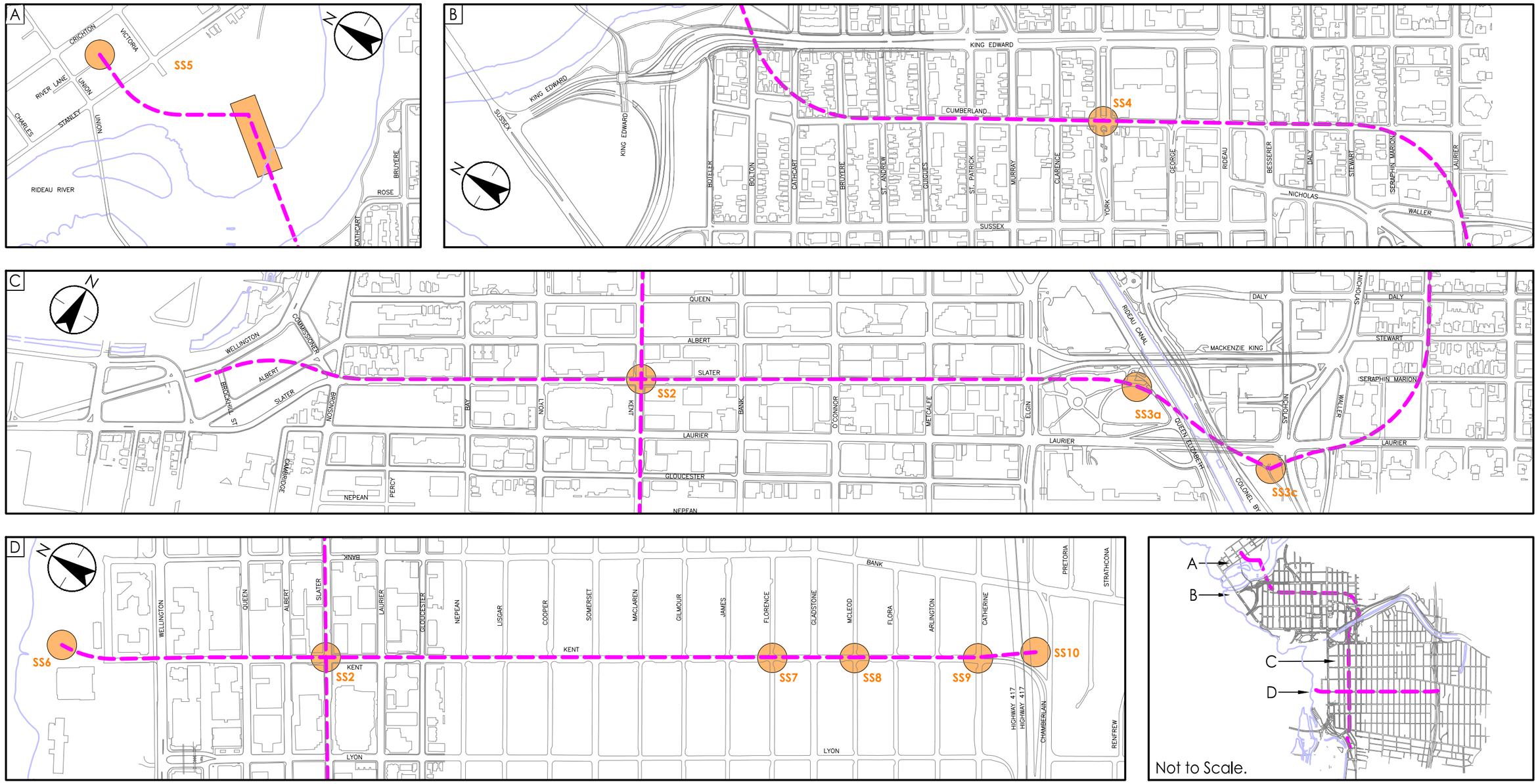
City of Ottawa
Combined Sewage Storage Tunnel
Ottawa, Ontario

Figure

1

Title

Site Location Map



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February 2015
Project No. 163401060

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Legend

- Proposed tunnel
- Proposed locations of surface construction

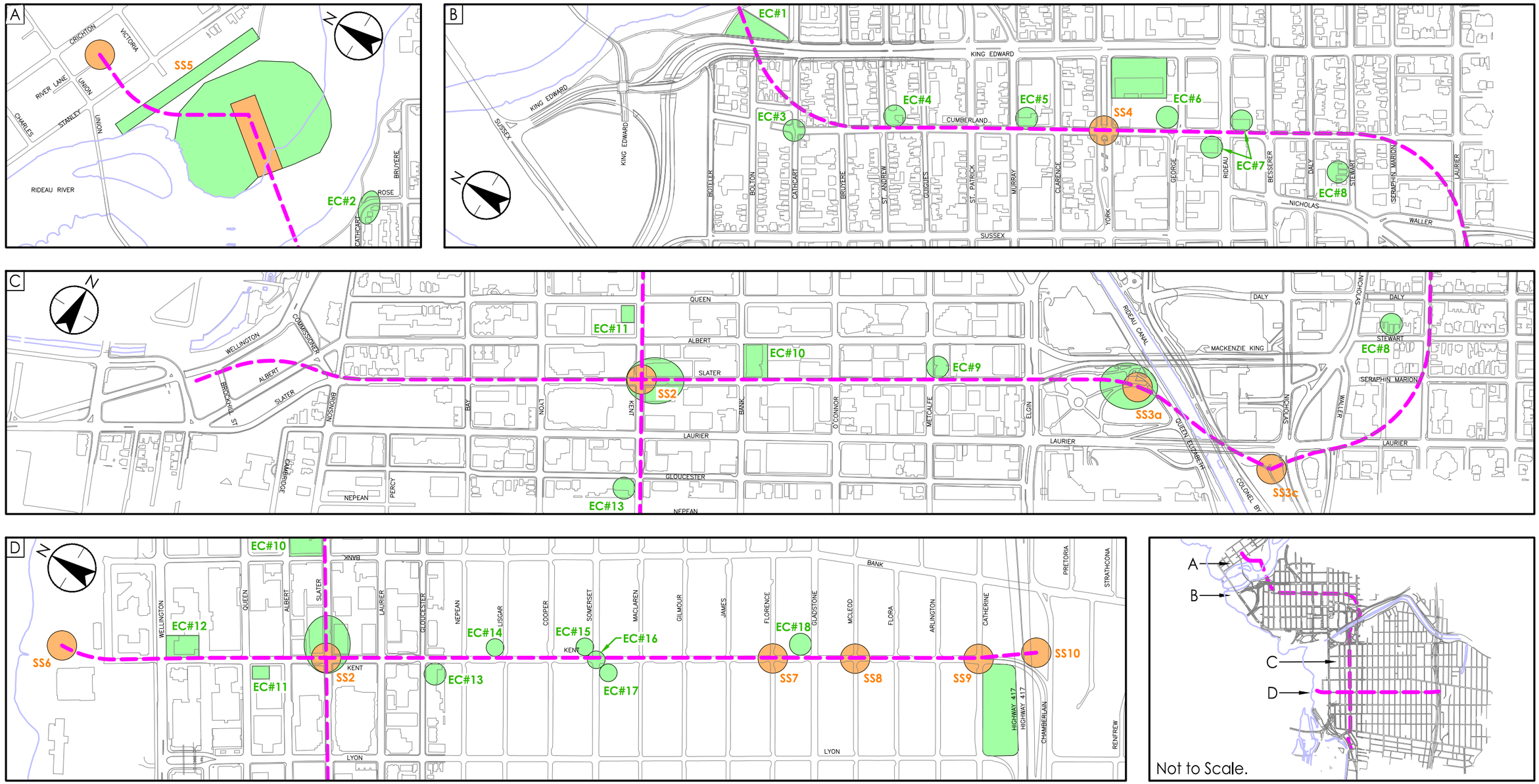
Notes

1. Coordinate Sytem: NAD 1983 MTM Zone 9
2. Base features from City of Ottawa.

Client/Project
City of Ottawa
Combined Sewage Storage Tunnel
Ottawa, Ontario

Figure No.
2

Title
Proposed Alignment and Locations of Surface Construction



75 m 0 75 150 m

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February 2015
Project No. 163401060

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Legend

- Proposed tunnel
- Proposed locations of surface construction
- Sites of environmental concern

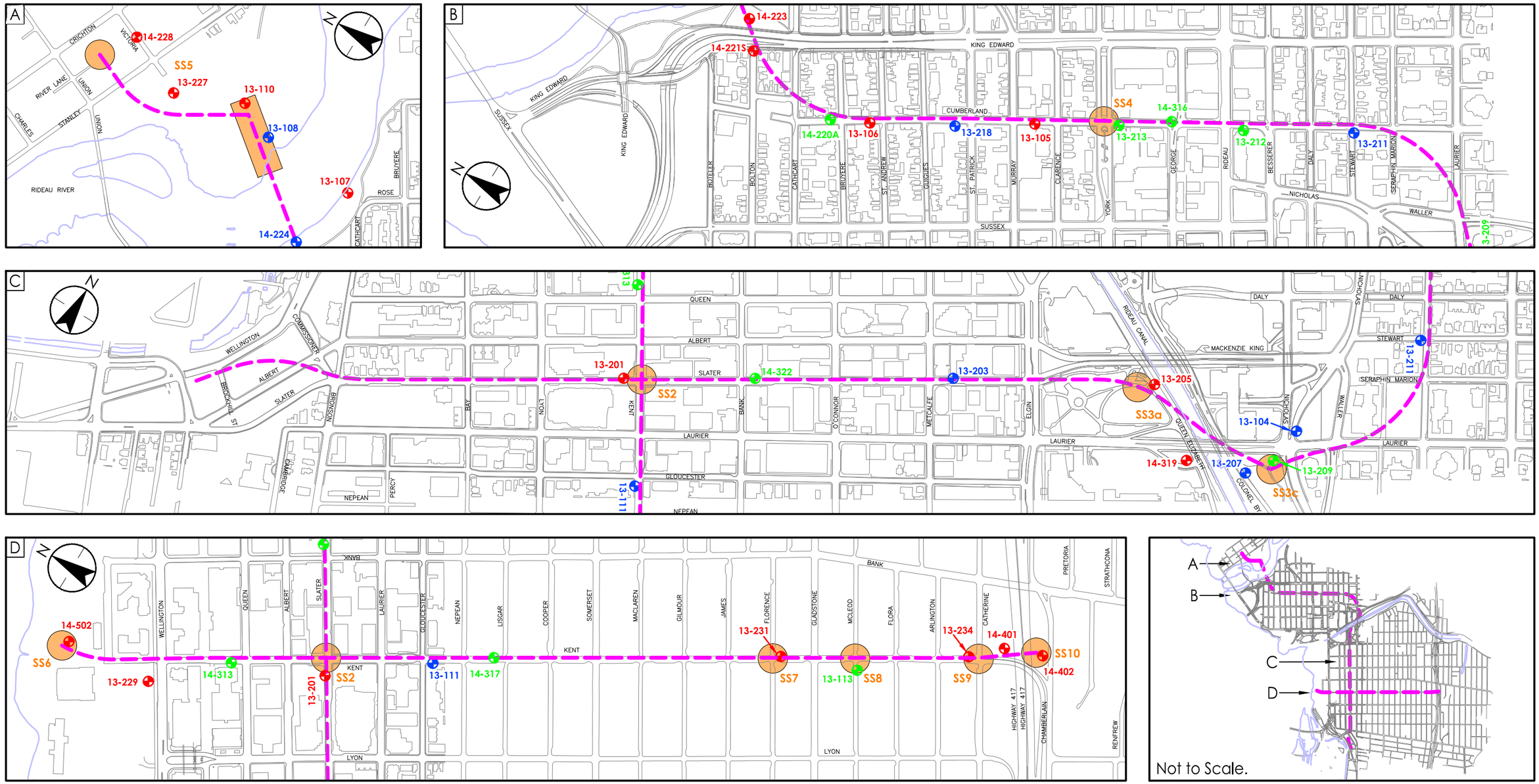
Notes

1. Coordinate Sytem: NAD 1983 MTM Zone 9
2. Base features from City of Ottawa.

Client/Project
City of Ottawa
Combined Sewage Storage Tunnel
Ottawa, Ontario

Figure No.
3

Title
Approximate Location of Surface Structures and Potential Environmental Impacts



June 2015
Project No. 163401060

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Legend

- Proposed tunnel
- Soil sample location
- Groundwater sample location
- Soil and groundwater sample location
- Proposed locations of surface construction

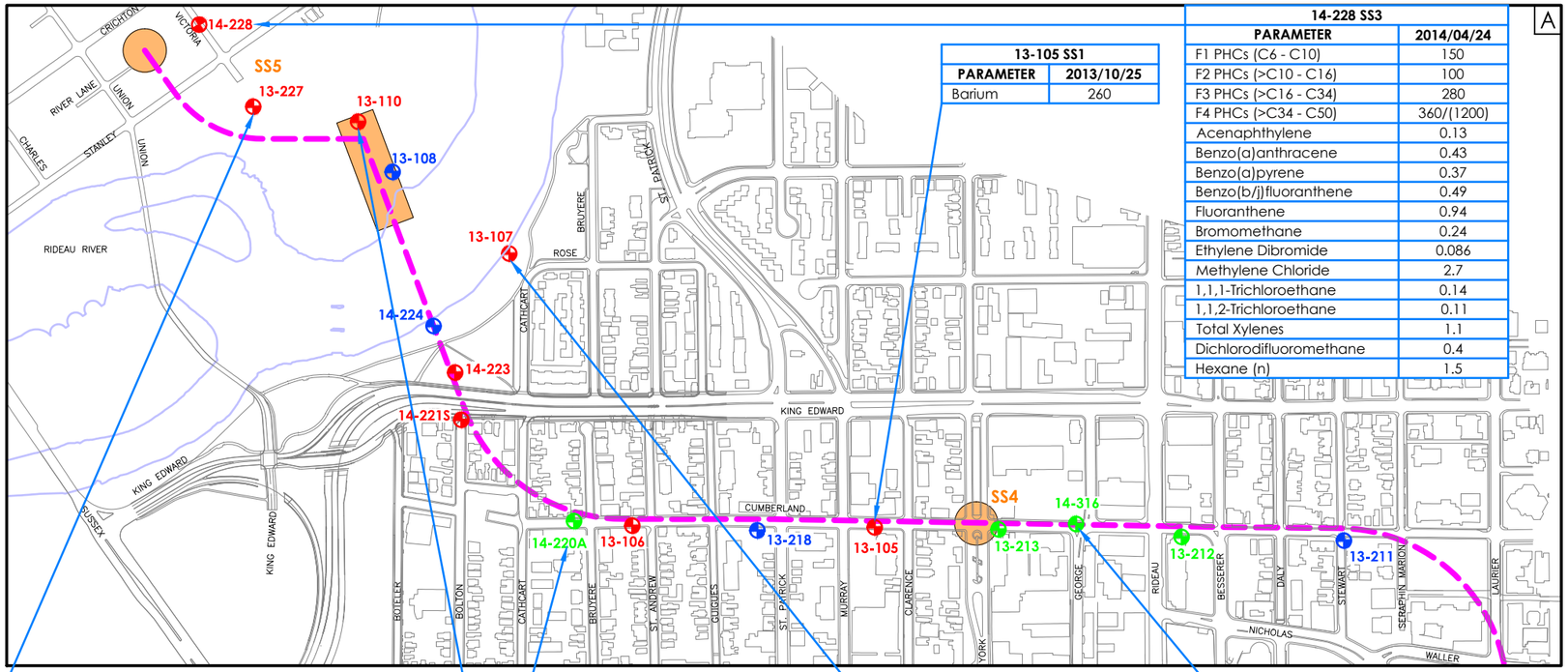
Notes

1. Coordinate Sytem: NAD 1983 MTM Zone 9
2. Base features from City of Ottawa.

Client/Project
City of Ottawa
Combined Sewage Storage Tunnel
Ottawa, Ontario

Figure No.
4

Title
Borehole/Monitoring Well Location Plan



13-105 SS1	
PARAMETER	2013/10/25
Barium	260

14-228 SS3	
PARAMETER	2014/04/24
F1 PHCs (C6 - C10)	150
F2 PHCs (>C10 - C16)	100
F3 PHCs (>C16 - C34)	280
F4 PHCs (>C34 - C50)	360/(1200)
Acenaphthylene	0.13
Benzo(a)anthracene	0.43
Benzo(a)pyrene	0.37
Benzo(b/j)fluoranthene	0.49
Fluoranthene	0.94
Bromomethane	0.24
Ethylene Dibromide	0.086
Methylene Chloride	2.7
1,1,1-Trichloroethane	0.14
1,1,2-Trichloroethane	0.11
Total Xylenes	1.1
Dichlorodifluoromethane	0.4
Hexane (n)	1.5

13-227 SS2	
PARAMETER	2013/11/25
Trichloroethylene	0.12
Barium	240

13-110 SS4	
PARAMETER	2013/11/11
Trichloroethylene	0.35
Acenaphthylene	0.51
Anthracene	0.67
Benzo(a)anthracene	1.7
Benzo(a)pyrene	1.2
Benzo(b/j)fluoranthene	1.4
Benzo(k)fluoranthene	0.5
Dibenzo(a,h)anthracene	0.17
Fluoranthene	3
Fluorene	0.15
Indeno(1,2,3-cd)pyrene	0.61
Phenanthrene	2.3
Pyrene	3.5
Antimony	1.7
Barium	380
Lead	470
Silver	0.62
Zinc	450

	14-220A SS1	14-220A SS4
PARAMETER	2014/12/12	2014/12/12
Barium	270	320
Chromium	-	78
Vanadium	-	94

13-107	
PARAMETER	2013/09/25
F2 PHCs	62
F3 PHCs	320
F4 PHCs	150
Acenaphthene	1.5
Acenaphthylene	1.4
Anthracene	5.4
Benzo(a)anthracene	12
Benzo(a)pyrene	10
Benzo(b/j)fluoranthene	12
Benzo(ghi)perylene	5.1
Benzo(k)fluoranthene	5.1
Chrysene	9.5
Dibenzo(a,h)anthracene	1.5
Fluoranthene	28
Fluorene	2.5
Indeno(1,2,3-cd)pyrene	5.8
2-Methylnaphthalene	0.8
Naphthalene	2
Phenanthrene	18
Pyrene	19

	14-316 SS1	14-316 SS2
PARAMETER	2014/12/15	2014/12/15
Barium	410	280

PARAMETER	MOE ONTARIO TABLE 1 CRITERIA (µg/g)
F2 PHCs (>C10 - C16)	10
F3 PHCs (>C16 - C34)	240
F4 PHCs (>C34 - C50)	120
Trichloroethylene	0.05
Acenaphthene	0.072
Acenaphthylene	0.093
Anthracene	0.16
Benzo(a)anthracene	0.36
Benzo(a)pyrene	0.3
Benzo(b/j)fluoranthene	0.47
Benzo(ghi)perylene	0.68
Benzo(k)fluoranthene	0.48
Chrysene	2.8
Dibenzo(a,h)anthracene	0.1
Fluoranthene	0.56
Fluorene	0.12
Indeno(1,2,3-cd)pyrene	0.23
2-Methylnaphthalene	0.59
Naphthalene	0.09
Phenanthrene	0.69
Pyrene	1
Antimony	1.3
Barium	220
Chromium	70
Cobalt	21
Lead	120
Silver	0.5
Vanadium	86
Zinc	290
Bromomethane	0.05
Ethylene Dibromide	0.05
Methylene Chloride	0.05
1,1,1-Trichloroethane	0.05
1,1,2-Trichloroethane	0.05
Total Xylenes	0.05
Dichlorodifluoromethane	0.05
Hexane (n)	0.05

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1 : 7500

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Legend

- Proposed tunnel
- Soil sample location
- Groundwater sample location
- Soil and groundwater sample location
- Proposed locations of surface construction

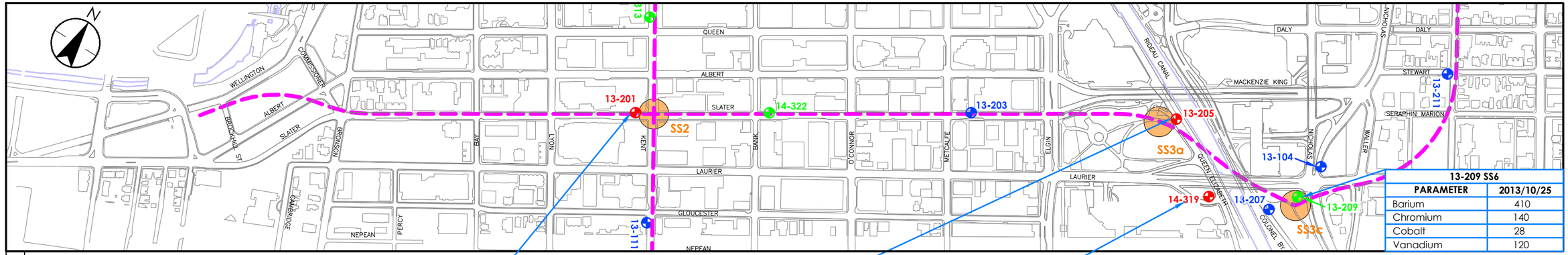
Notes

1. Coordinate Sytem: NAD 1983 MTM Zone 9
2. Base features from City of Ottawa.

Client/Project
City of Ottawa
Combined Sewage Storage Tunnel
Ottawa, Ontario

Figure No.
5A

Title
Soil Table 1 Exceedances



13-209 SS6	
PARAMETER	2013/10/25
Barium	410
Chromium	140
Cobalt	28
Vanadium	120

13-201	
PARAMETER	2013/10/22
Lead	210

13-205 SS1	
PARAMETER	2013/10/21
Benzo(a)pyrene	0.31
Antimony	17
Lead	210

13-205 SS3	
PARAMETER	2013/10/21
F4 PHCs	180
Antimony	2.7
Barium	230
Chromium	71

14-319 SS2	
PARAMETER	2014/12/05
F2 PHCs (>C10 - C16)	12
F4 PHCs (>C34 - C50)	72 (640)
Barium	320
Chromium	100
Cobalt	25
Vanadium	95

14-402 SS3	
PARAMETER	2014/10/08
Benzo(a)anthracene	0.40
Benzo(b/j)fluoranthene	0.48
Fluoranthene	0.81
Fluorene	0.040
1,1,2-Trichloroethane	0.074
Total Xylenes	0.060
Hexane (n)	0.087

14-402 SS5	
PARAMETER	2014/10/08
Barium	420
Chromium	120
Cobalt	26
Vanadium	120

PARAMETER	MOE ONTARIO TABLE 1 CRITERIA (µg/g)
F2 PHCs (>C10 - C16)	10
F3 PHCs (>C16 - C34)	240
F4 PHCs (>C34 - C50)	120
Trichloroethylene	0.05
Acenaphthene	0.072
Benzo(a)pyrene	0.1
Fluoranthene	0.56
Antimony	1.3
Barium	220
Chromium	70
Cobalt	21
Lead	120
Silver	0.5
Vanadium	86
1,1,2-Trichloroethane	0.05
Total Xylenes	0.05
Hexane (n)	0.05
Naphthalene	0.09

PARAMETER	14-502 SA2 2014/09/27	14-502 SA5 2014/09/27
Acenaphthene	0.13	0.35
Anthracene	0.45	1.2
Benzo(a)anthracene	1.3	1.5
Benzo(a)pyrene	0.99	1.2
Benzo(b/j)fluoranthene	1.2	1.4
Dibenzo(a,h)anthracene	0.15	0.16
Fluoranthene	2.6	4.0
Fluorene	0.16	0.73
Indeno(1,2,3-cd)pyrene	0.54	0.65
Phenanthrene	1.8	4.4
Pyrene	2.0	3.0
Lead	-	130
Naphthalene	-	0.66

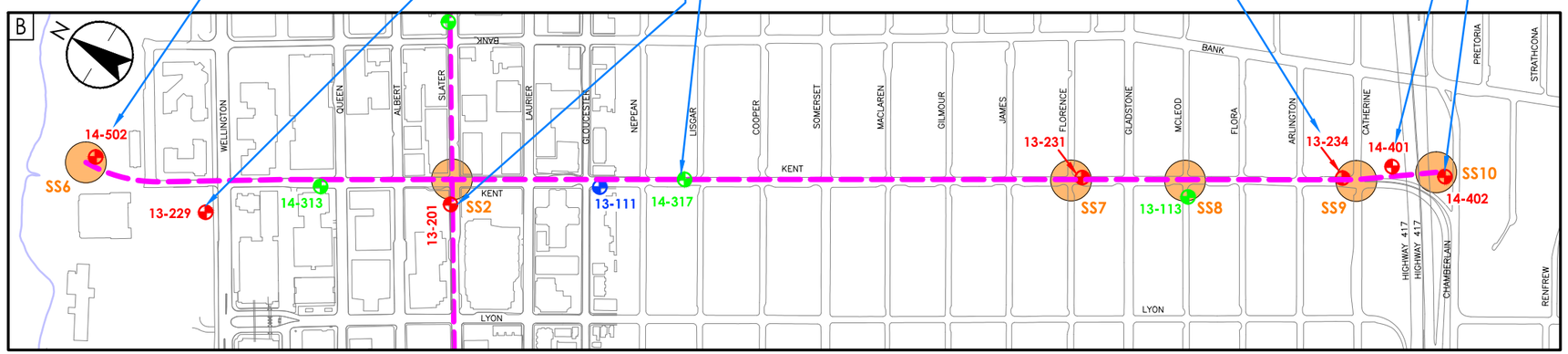
13-229 SS3	
PARAMETER	2013/11/25
F2 PHCs	19
Acenaphthene	0.075
Fluoranthene	0.6

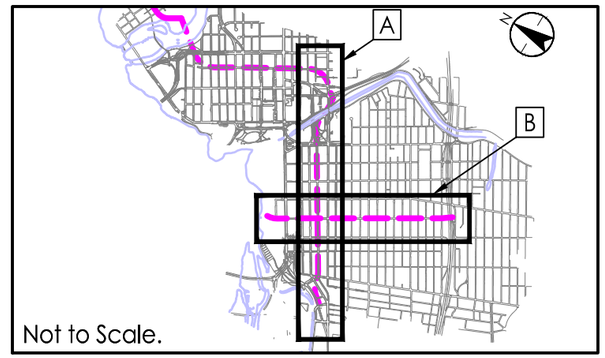
13-229 SS4	
PARAMETER	2013/11/25
F2 PHCs	15
Fluoranthene	0.64
Silver	1.7

14-317 SS1	
PARAMETER	2014/12/16
Barium	410
Chromium	140
Cobalt	28
Vanadium	130

13-234 SS6	
PARAMETER	2013/10/21
F4 PHCs	340 (1300)
Barium	430
Chromium	110
Cobalt	26
Vanadium	120

14-401 SS5	
PARAMETER	2014/10/07
Barium	420
Chromium	120
Cobalt	26
Vanadium	120





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Legend

- Proposed tunnel
- Soil sample location
- Groundwater sample location
- Soil and groundwater sample location
- Proposed locations of surface construction

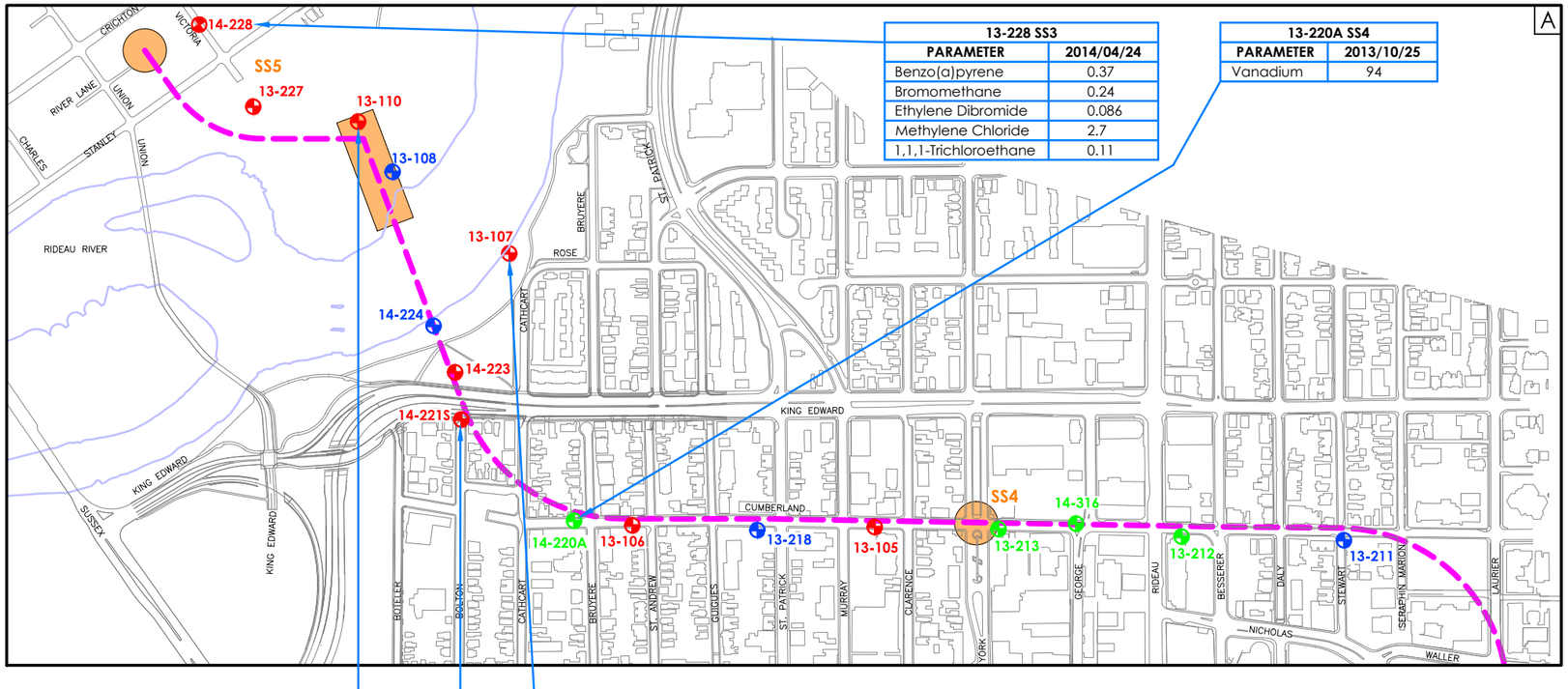
Notes

1. Coordinate Sytem: NAD 1983 MTM Zone 9
2. Base features from City of Ottawa.

Client/Project
City of Ottawa
Combined Sewage Storage Tunnel
Ottawa, Ontario

Figure No.
5B

Title
Soil Table 1 Exceedances



13-228 SS3	
PARAMETER	**2014/04/24**
Benzo(a)pyrene	0.37
Bromomethane	0.24
Ethylene Dibromide	0.086
Methylene Chloride	2.7
1,1,1-Trichloroethane	0.11

13-220A SS4	
PARAMETER	**2013/10/25**
Vanadium	94

13-110 SS4	
PARAMETER	**2013/11/11**
Acenaphthylene	0.51
Anthracene	0.67
Benzo(a)anthracene	1.7
Benzo(a)pyrene	1.2
Benzo(b/j)fluoranthene	1.4
Benzo(k)fluoranthene	0.5
Dibenzo(a,h)anthracene	0.17
Lead	470
Zinc	450

13-107	
PARAMETER	**2013/09/25**
Acenaphthylene	1.4
Anthracene	5.4
Benzo(a)anthracene	12
Benzo(a)pyrene	10
Benzo(b/j)fluoranthene	12
Benzo(k)fluoranthene	5.1
Dibenzo(a,h)anthracene	1.5
Fluoranthene	28
Indeno(1,2,3-cd)pyrene	5.8
Phenanthrene	18

13-221S	
PARAMETER	**2014/05/16**
Benzo(ghi)perylene	0.28
Indeno(1,2,3-cd)pyrene	0.3

PARAMETER	MOE ONTARIO TABLE 3 CRITERIA (µg/g)
F2 PHCs (>C10 - C16)	150
F4 PHCs (>C34 - C50)	500
Acenaphthylene	0.15
Anthracene	0.67
Benzo(a)anthracene	0.96
Benzo(a)pyrene	0.3
Benzo(b/j)fluoranthene	0.96
Benzo(ghi)perylene	0.2
Benzo(k)fluoranthene	0.96
Dibenzo(a,h)anthracene	0.1
Fluoranthene	9.6
Indeno(1,2,3-cd)pyrene	0.76
Lead	120
Phenanthrene	12
Sodium	2300
Vanadium	86
Zinc	340
Bromomethane	0.05
Ethylene Dibromide	0.05
Methylene Chloride	1.6
1,1,1-Trichloroethane	0.05

75 m 0 75 150 m
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Legend

- Proposed tunnel
- Soil sample location
- Groundwater sample location
- Soil and groundwater sample location
- Proposed locations of surface construction

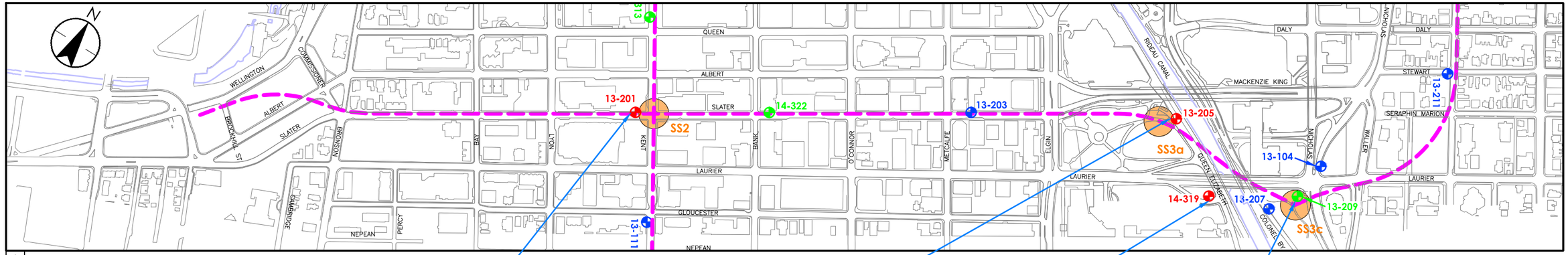
Notes

1. Coordinate Sytem: NAD 1983 MTM Zone 9
2. Base features from City of Ottawa.

Client/Project
City of Ottawa
Combined Sewage Storage Tunnel
Ottawa, Ontario

Figure No.
5C

Title
Soil Table 3 Exceedances



13-201	
PARAMETER	2013/10/22
Lead	210

13-205 SS1	
PARAMETER	2013/11/04
Benzo(a)pyrene	0.31
Lead	210

14-319 SS2	
PARAMETER	2014/12/05
Vanadium	95

13-209 SS6	
PARAMETER	2013/10/25
Vanadium	120

PARAMETER	MOE ONTARIO TABLE 3 CRITERIA (µg/g)
F2 PHCs (>C10 - C16)	150
F4 PHCs (>C34 - C50)	500
Acenaphthylene	0.15
Anthracene	0.67
Benzo(a)anthracene	0.96
Benzo(a)pyrene	0.3
Benzo(b/j)fluoranthene	0.96
Benzo(ghi)perylene	0.2
Benzo(k)fluoranthene	0.96
Dibenzo(a,h)anthracene	0.1
Fluoranthene	9.6
Indeno(1,2,3-cd)pyrene	0.76
Lead	120
Phenanthrene	12
Sodium	2300
Vanadium	86
Zinc	340
1,1,2-Trichloroethane	0.05

PARAMETER	14-502 SA2 2014/09/27	14-502 SA5 2014/09/27
Anthracene	-	1.2
Benzo(a)anthracene	1.3	1.5
Benzo(a)pyrene	0.99	1.2
Benzo(b/j)fluoranthene	1.2	1.4
Dibenzo(a,h)anthracene	0.15	0.16
Lead	-	130

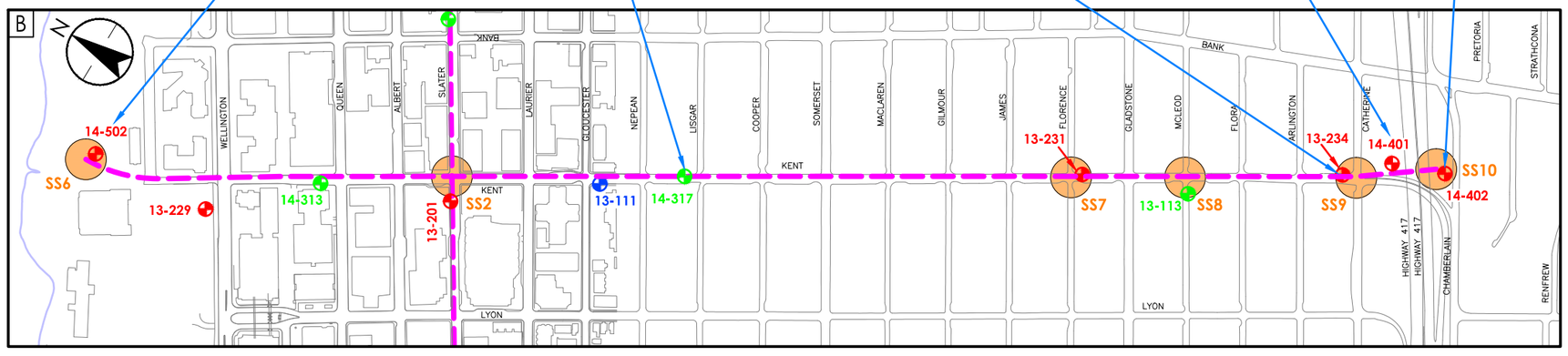
14-317 SS1	
PARAMETER	2014/12/16
Vanadium	130

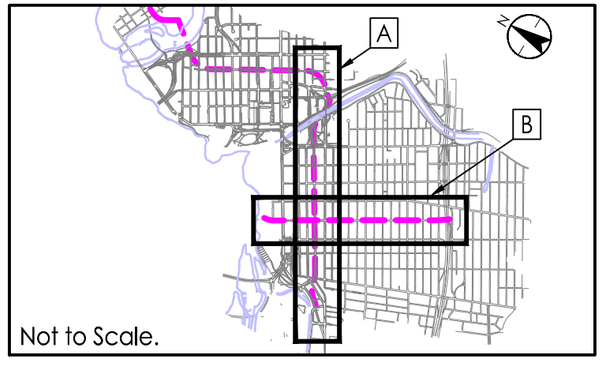
13-234 SS6	
PARAMETER	2013/10/21
Vanadium	120

14-401 SS5	
PARAMETER	2014/10/07
Vanadium	120

14-402 SS3	
PARAMETER	2014/10/08
1,1,2-Trichloroethane	0.074

14-402 SS5	
PARAMETER	2014/10/08
Vanadium	120





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June 2015

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Legend

- Proposed tunnel
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- Soil and groundwater sample location
- Proposed locations of surface construction

Notes

1. Coordinate Sytem: NAD 1983 MTM Zone 9
2. Base features from City of Ottawa.

Client/Project

City of Ottawa

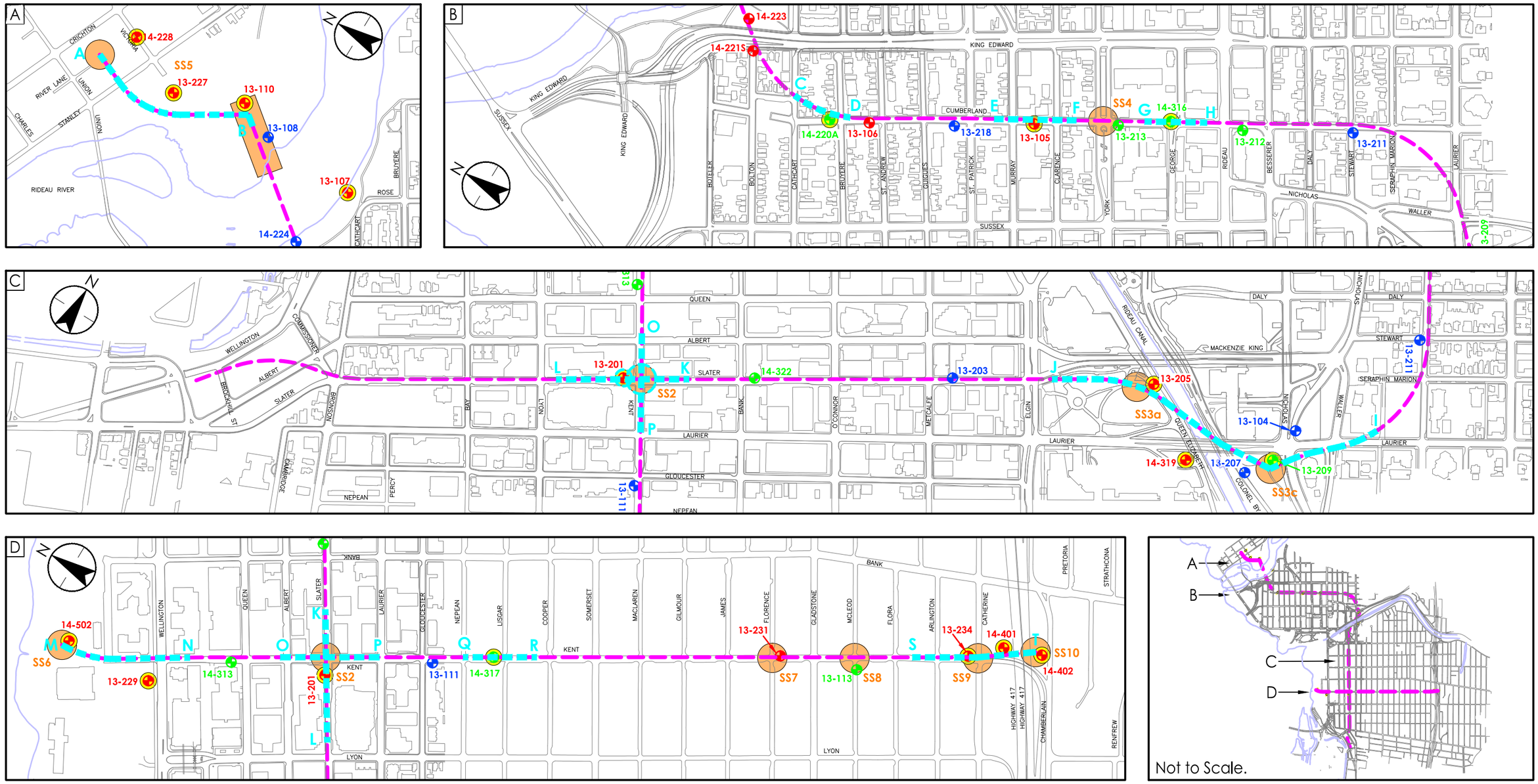
Combined Sewage Storage Tunnel
Ottawa, Ontario

Figure No.

5D

Title

Soil Table 3 Exceedances



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Legend

- Proposed tunnel
- Soil sample location
- Groundwater sample location
- Soil and groundwater sample location
- Proposed locations of surface construction
- Concentrations in soil exceeded Ontario Table 1 criteria
- Potential extent of soil impacts

Notes

1. Coordinate Sytem: NAD 1983 MTM Zone 9
2. Base features from City of Ottawa.

Client/Project
City of Ottawa
Combined Sewage Storage Tunnel
Ottawa, Ontario

Figure No.
6

Title
Potential Extents of Soil Impacts

Appendix B
Previous Reports Summary

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations
Bordeleau Park					
Final Report, Phase I Environmental Audit, Property Asset Number: 96287, King Edward Avenue, Ottawa (Ontario)	Mission Environnement Inc February 16, 2004	Northeast corner of King Edward Avenue and Cathcart Street.	South of SS5	• Property: Former railroad tracks, • Neighbouring: Former tannery, fill material of unknown quality,	Environmental characterization of soil and groundwater.
Phase II Environmental Site Assessment, King Edward Avenue at the Rideau River, Property Asset #96287, Ottawa, Ontario	Intera Engineering Ltd. December 2004	Northeast corner of King Edward Avenue and Cathcart Street.	South of SS5	• Fill material encountered contained wood, slag, metal, ash and dried coal tar products. • Several metals and/or PAH parameters in soil exceeded the MOE and CCME standards. BTEX parameters exceeded MOE Table 1, benzene exceeded CCME standard. • Groundwater has elevated iron, manganese, sodium chloride and conductivity. PAHs exceeded MOE/CCME standards.	Poor quality fill and waste materials on the property and impacts to groundwater. Contaminants of concern include metals, PAHs, and VOCs. A screening level risk assessment was recommended.
Screening Level Risk Assessment, King Edward Avenue & Rideau River (Bordeleau Park), Ottawa, Ontario	Intera Engineering Ltd. October 2005	Northeast corner of King Edward Avenue and Cathcart Street.	South of SS5	• Detected contaminants of concern in the soil do not pose unacceptable health risks to park visitors, park construction workers or park maintenance workers. • Detections of contaminants of concerns in soil do not pose an unacceptable ecological health risk to terrestrial receptors. • Groundwater data does not indicate any adverse effect on Rideau River water quality or aquatic receptors.	No requirements for active intervention or other risk management recommendations. Wells should be decommissioned in accordance with O.Reg. 903.

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations
Well Decommissioning – Bordeleau Park, Ottawa, ON, NCC Property Asses #96287	Intera Engineering Ltd. March 1, 2006	Northeast corner of King Edward Avenue and Cathcart Street.	South of SS5	• Wells installed in 2004 as part of the Phase II ESA investigation were successfully decommissioned.	• None
New Edinburgh Park					
Phase I and Limited Phase II Environmental Site Assessment, Property Asset No. 96314 and 97502	Trow Associates Inc. February 2004	New Edinburgh Park on the northeast bank of the Rideau River.	SS5	• <u>Phase I ESA:</u> • Property: Both properties are closed waste disposal sites. • Neighbouring: Former railroad tracks in between the two properties. • <u>Phase II ESA:</u> • Landfill waste observed in the 5 boreholes advanced on the properties. • Soil exceedances of MOE and/or CCME standards included PHC, PAH, and/or metals. • No groundwater exceedances were identified.	Recommended a screening level risk assessment with a surface soil sampling program to prioritize remedial action, if required.
Screening Level Risk Assessment, New Edinburgh Park Landfill (NCC Property Asset Numbers 96314 and 97502), Ottawa, Ontario	Trow Associates Inc. September 2004	New Edinburgh Park on the northeast bank of the Rideau River.	SS5	• Based on surface soil sampling laboratory results, contaminants of concern include select metals, PHC F2 and F3, select PAH parameters. • Potential ecological receptors include soil-dependent organisms, and aquatic organisms in the Rideau River. • Identified source-pathway-receptor combinations did not present a high risk of health effects. • Moderate risk was identified for adult and children visitors to the park.	Recommended risk management measures included: Complete a quantitative human health and ecological site specific risk assessment following detailed delineation of the impacts (Phase III ESA).

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations
2009 Sampling Program and Well Decommissioning – Stanley Park (NCC Property Assets 96314, 97502, 96292, 96299, and 96307), Ottawa, Ontario	Intera Environmental Ltd. June 3, 2010	East bank of the Rideau River	SS5	• Mercury and two PAH parameters exceeded the MOE standard in up to five monitoring wells. • A potentially erroneous cobalt concentration, not consistent with historical sampling, exceeded the provincial surface water objective in all surface water sampling locations. • Landfill gas monitoring concluded that there is no risk of methane accumulation in the residences. • 9 wells were decommissioned	Following remediation activities, install 3 additional monitoring wells to replace those decommissioned in 2009. Annual groundwater sampling to monitor concentrations of metals and PAHs. Annual surface water sampling of the surface water stations sampled in 2008 and 2009 to verify the potentially anomalous cobalt concentration.
2011 Groundwater and Surface Water Monitoring, Stanley Park, NCC Property Assets 96314, 96299, 96307, 96292, Ottawa, Ontario	Geofirma Engineering Ltd. October 5, 2011	East bank of the Rideau River	SS5	• Groundwater levels indicated potential discharge of groundwater to the Rideau River. • Minor exceedances of federal guidelines were measured. No exceedances of the MOE standard were identified. • Surface water samples exceeded the MOE standard for iron and vanadium.	Recommends an additional round of groundwater and surface water sampling in summer 2012, to monitor concentrations of metals and PAHs.

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations
Human Health and Ecological Risk Assessment, Stanley Park, Ottawa Ontario	Geofirma Engineering Ltd. March 30, 2012	East bank of the Rideau River	SS5	• Risk calculations identified a risk to site visitors based on exposure to elevated concentrations of lead and carcinogenic PAHs in surficial soil. • Risk to maintenance works was also identified to be exposed to carcinogenic PAH. • No risk was identified for adjacent residents. • Risk was identified for all on-site ecological receptors exposed to the entire soil profile of the site, based on exposure to heavy metals, PAH and PHC.	Risk management plan: • cap site with 0.3 m of clean soil and surface vegetation. Monitor cap integrity every two years. • workers on the property should minimize exposure to soil and generation of dust. • any soils excavated for landscaping purposes (tree planting) should be disposed off the property. • Groundwater and surface water monitoring program should be maintained, including sampling for metals, PAH, select locations for dioxins/furans, PHC and VOC parameters.
2012 Groundwater and Surface Water Monitoring, Stanley Park, NCC Property Assets 96314, 96299, 96307, 96292, Ottawa, Ontario	Geofirma Engineering Ltd. July 18, 2012	East bank of the Rideau River	SS5	• Minor exceedances of FIGQG of iron, and exceedances of titanium, barium, chromium, selenium and zinc were detected in groundwater samples. • No exceedances of MOE standards. • No exceedances of concentrations in surface water samples. • PAH concentrations are dependent on sediment content in the groundwater sample.	No further action regarding Stanley Park; groundwater and surface water do not appear to be impacted as a result of past land uses.

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations

Surficial Soil Sampling for Delineation and Capping Design – Stanley Park	Intera Engineering Ltd.
	
	August 24, 2009
		East bank of the Rideau River	SS5	• Soil samples collected from the western area, and the northeastern area had concentrations less than the federal and provincial standards.
				• Thirteen surficial soil samples, collected from across the property, exceeded the risk derived concentrations for human health for lead and benzo(a) pyrene total potency equivalents.
					• Areas recommended to be capped with at least 0.3 m of clean fill material include:
					  • the northern most portion of the property between Stanley Avenue residences and the paved pathway;
					  • heavily vegetated area along the eastern property boundary (part of the former railway corridor)
					  • eastern portion of the property, characterized by more dense vegetation and tall native grasses
					• in areas where domestic gardening is anticipated to occur, additional measures should be taken (thicker soil cap, or fencing).

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations
Remediation Report, Stanley Park Remediation Project, Ottawa, Ontario	Geofirma Engineering Ltd. October 5, 2012	East bank of the Rideau River	SS5	• Remediation consisted of the removal of selected trees and vegetation, excavation of contaminated fill and for drainage swales, and capping of the property. • Clean soil cap was placed directly on the contaminated fill with little disturbance, consisting of gravel beneath the tree drip lines, sand, and top soil. • To maintain grade elevations with neighbouring residences, 240 cubic metres of contaminated soil was excavated and disposed, replaced with clean fill and topsoil. • Cap verification sampling indicated the clean fill was at least 0.27m across the property. • Verifications samples collected from the cap material were less than the MOE Table 1 standards with the exception of one sample which may have contained material from the impacted soil beneath.	• Complete an annual visual inspection of the clean soil cap at the beginning of the spring season. • Repair areas of erosion, compaction or lack of vegetation. • Re-test the cap thickness and quality every five years. Repair any deficiencies in cap thickness or quality with new topsoil.
Confederation Park					

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations
Phase I Environmental Site Assessment, Confederation Park, 123 Laurier Ave. West, Ottawa, Ontario (Portion of NCC Property Asset #96777)	Decommissioning Consulting Services Limited February 2011	North of Laurier Avenue between Elgin Street and the Rideau Canal	SS3a	• Fill material of unknown origin and quality in the northeastern section of the property. • Additional fill of unknown quality placed at the property. • Possible building demolition residues present at the property. • During construction of the canal, some excess soil could have been placed adjacent to the canal alignment. • Former underground coal bunker located at the middle north to northwest portion. • Former medium and large sized coal sheds, and oil storage yard; however, the exact location is unknown.	Recommended a Phase II ESA to assess the fill materials in the northeast and potential coal and/or oil contamination associated with the former underground coal bunker and coal and oil storage on the property.

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations

Phase II Environmental Site Assessment, Confederation Park, 123 Laurier Avenue West, Ottawa, Ontario, NCC Property Asset No. 96777	SNC Lavalin Environment
	
	November 20, 2012
		North of Laurier Avenue between Elgin Street and the Rideau Canal	SS3a	• Areas of potential concern in addition to the February 2011 Phase I ESA include:
				  • Former hockey area on the east portion of the property
				  • power distributing station containing transformers at the south central portion of the property (along the north side of Laurier Avenue)
				  • former alignment of Slater Street along the northern property boundary
				  • dry cleaning facility and oil storage area immediately north of the Site.
				• Poor quality fill was identified in the six boreholes advanced across the property. Fill contained layers of coal, red brick fragments and mortar, ash, and wood.
				• Soil samples of the fill contained concentrations of PAHs, PHC F3 and F4G exceeding that federal and provincial standards.
				• Limited groundwater sampling identified metal concentrations exceeding the federal non-potable standard at one location.
					• Delineate extent of soil impacts and confirm soil quality at property boundaries.
					• Collect shallow surface soil sampled across the property for evaluation of surface contact pathway in a risk assessment.
					• Collect soil samples in areas with previously identified concentrations to confirm vertical extent.
					• Re sample existing monitoring wells for potential contaminants of concern that were not analyzed due to limited groundwater recovery.

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations
Supplemental Phase II Environmental Site Assessment and Screening Level Risk Assessment, Confederation Park, P.A. No. 96777, Ottawa, Ontario	Geofirma Engineering Ltd. September 16, 2014	North of Laurier Avenue between Elgin Street and the Rideau Canal	SS3a	• Surface soil contained phenanthrene and subsurface soil contained metals and several PAH parameters. • Metals and PAH concentrations in subsurface soils were found in greater frequency at the western portion of the property extending towards the centre. • Groundwater was impacted with metals and PAH parameters. • No potential risk was identified to park workers, site visitors and festival attendees based on exposure to surficial soils. • No ecological risk was identified for ornamental plants, or fruit bearing trees from the metals and PAH impacted subsurface soils. • No potential risk was found to human health by translocation of contaminants to the fruit of fruit bearing trees from the subsurface soils.	• Site workers digging in the subsurface soils (>0.4 mbgs) should manage the potential risk of metals and PAH parameters to prevent dermal contact and avoid accidentally ingesting subsurface soils. • Manage excavated or stockpiled subsurface soil so it does not leach contaminants onto surface soils. Excavated soil must be identified as contaminated. • There is potential risk to site workers in excavations where groundwater infiltration occurs. Prevent dermal contact or accidental ingestion of groundwater. • Manage/treat/contain or dispose of any dewatering water. • Conduct one round of groundwater monitoring and sampling for metals and PAH parameters in the spring at least two weeks following the flooding of the Rideau Canal.

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations
Évaluation environnementale de site – Phase I, Promenade Queen Elizabeth (11226, 11246)	Les Laboratoires Gatineau November 1998	North part of Queen Elizabeth Driveway	SS3a	• Previously identified historical industrial activities on neighbouring properties to the west of the south end. Historical searches identified a previous service station, body shop and repair shop in the same area as the previous industrial activities. As the area has since been redeveloped it is possible that the potentially impacted soil was removed during this development.	Recommended characterization of the soil in the area between Argyle Street and Pretoria Bridge to evaluate the presence of potential contamination.
Évaluation environnementale de site – Phase I, Parc, Avenue Stanley (11135, 11137, 11143)	Les Laboratoires Gatineau November 1998	North half of Nepean Point on the east side of the Rideau River	SS5	• The historical burying and creating of land on the north bank of the Rideau River implies the potential presence of wastes and impacted soils. • Migration of contaminants from waste burial sites and previous industrial sites near the property could have contributed to soil and groundwater impacts on the property.	Determine the nature and volume of the wastes. Evaluate the quality of the material used in the creation of land on the north bank of the river. Determine the impact of the wastes present on soil and groundwater quality. Evaluate the impact on soil and groundwater, of the former burying site and an industrial site on the border of the property. Evaluate the groundwater quality that might migrate off the study property.
Final Phase I Environmental Site Assessment, Site #14, NCC Property Asset #96747, Vacant	Jacques Whitford Limited October 18, 2004	Along the Rideau Canal from the Queensway to the National Conference	SS3c	• Property: • Former railroad tracks, large amount of fill material of unknown quality • Neighbouring: Nearby former landfills, industrial sites, coal gasification plants.	No further environmental investigations.

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations
Land along Colonel By Drive at the Queensway, Ottawa, Ontario		Centre			
Fill Investigation, Colonel By Drive, Laurier Avenue, to Government Conference Centre, NCC Asset 96747, Ottawa, Ontario	Golder Associates February 2011	Vacant land between Colonel By Drive and the Rideau Canal, and between Laurier Ave and the Ottawa Congress Centre	SS3c	• Soil in the western area closest to the conference centre was impacted with metals, PHCs, and PAHs greater than the MOE Table 1 standards. The soil can be considered non-hazardous material if disposed off-site. • Impacted fill, similar to above, slag and railway ties in the east part of the property contained impacts of metals, PHC and PAHs above the MOE Table 1. • Areas near MacKenzie King Bridge and shallow fill near Laurier Ave can be removed as inert fill.	Recommends additional testing of the soil if it is removed from the area. A Phase II ESA, including groundwater sampling is necessary to delineate the full depth and area of impacted fill, soil and groundwater.

Report Title	Prepared By and Report Date	Location	CSST Site #	Potential Environmental Concerns / Results	Conclusions/ Recommendations
Phase II Environmental Site Assessment, Colonel By Drive from Laurier Avenue to Highway 417, Ottawa, Ontario, National Capital Commission, Property Asset 96747	Golder Associates February 2011	On both the east and west sides of Colonel By Drive between Laurier Avenue and Highway 417.	SS3c	• Soil at the property is impacted by PAHs, metals, PHCs F1-F4, and BTEX in concentrations greater than the MOE Table 9 standards and CCME guidelines in both shallow and deep samples. • The groundwater does not meet the Federal Interim Groundwater Quality Guidelines (FIGQG) and MOE Table 9 standards for PAHs and/or metals. • Landfill leachate parameters in groundwater showed sulphate and nitrate concentrations exceeded the FIGQG at select locations. Chloride concentration exceeded the MOE Table 9 standard but met the FIGQG. • As no other leachate parameters were detected the sulphate, nitrate and chloride concentrations may be associated with potential leaking sewer pipes or de-icing agents on the roadway.	The ranges of the concentrations of leachate parameters do not suggest groundwater impacts associated with former landfills; however, one sampling event, with limited monitoring wells sampled and limited parameters analyzed, does not provide conclusive results. A risk assessment was recommended as the soil impacts are widespread.

Appendix C
Field Methodology

FIELD METHODOLOGY

1.0 PRE-DRILLING SITE INVESTIGATIONS

1.1 Service and Utility Locates

The locations of services and utilities were established prior to the drilling and sampling phase of the investigation by Golder Associates.

2.0 DRILLING INVESTIGATION

2.1 Drilling

Drilling activities were conducted by Golder Associates Ltd. (Golder) with a Stantec representative present for soil sampling at select.

To eliminate the possibility of cross-contamination between soil samples, Stantec personnel cleaned the split spoon sampler with a detergent and rinsed with distilled water for each sampling interval.

2.2 Vapour Monitoring

Field screening for the presence of combustible vapours was conducted using a RKI Eagle combustible vapour meter, calibrated to hexane and operated in the methane elimination mode. The results of this monitoring were used as a guide for the selection of soil samples for laboratory analysis.

The soil samples subjected to field vapour screening were transferred to plastic bags. The bag was approximately half-filled with soil, to provide adequate headspace for the accumulation of released vapours. Samples were broken by hand to increase surface area and permit vapour release. The samples were transferred quickly to minimize vapour loss. The plastic bag was then left to stand upright and undisturbed for a period of at least five minutes at ambient air temperature. The concentration of accumulated vapours in the headspace was then measured by inserting the probe of the instrument into the headspace of the bag. The vapour concentrations were measured in parts per million by volume (ppmv) and recorded on a field log for comparison with subsequent samples and boreholes.

2.3 Borehole Logging

Materials retrieved from the drilling operation were logged by Golder personnel. The texture and composition of materials and the presence of combustible vapours or other indications of contamination were recorded by Golder personnel and are reported under separate cover by Golder.

2.4 Soil Sampling

Soil samples were collected from the boreholes at approximately 0.61-m intervals (where possible) using a 50 mm outside diameter split spoon. One half of the sample was field tested for combustible vapours and the other half was placed in laboratory supplied containers for potential laboratory analyses.

2.5 Monitoring Wells

Monitoring wells were installed by Golder. Monitoring well construction details are reported under separate cover by Golder.

3.0 MONITORING WELLS

3.1 Establish Static Elevations and Gradients

The depths of water and product (where applicable) were determined under conditions where no pumping or other activity, which would influence water levels, was being conducted. Water levels and depth to product, if present, were measured using a Solinst interface probe. The interface probe was rinsed between monitoring wells using distilled water.

4.0 GROUNDWATER SAMPLING

Each monitoring well was developed using a clean Waterra™ foot valve and a new length of polyethylene tubing. The purpose of well development is to remove drilling fluids, solids or other particulates that may have been introduced during drilling. Development restores the hydraulic conductivity of the aquifer material surrounding the well to as close to pre-boring conditions as possible.

Groundwater samples were recovered from the accessible monitoring wells using the United States Environmental Protection Agency (EPA) recommended "low-flow" sampling methodology, as outlined in EPA's publication (EPA/540/S095-504) Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures, April 1996.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

All samples were collected following strict Stantec sampling procedures. Samples were uniquely labelled and control was maintained through use of chain of custody forms. All samples were collected in laboratory supplied containers and preserved in insulated coolers. Appropriate sampling QA/QC procedures were adhered to at all times.

Field duplicate groundwater samples were recovered from MW13-205B (duplicate 2014-D), MW14-207B (duplicate 2013-A), and MW13-231C (duplicate 2014-C) between December 18, 2013 and January 10, 2014, and MW14-228S (duplicate MW14-A) collected on May 16, 2014. The field duplicates were submitted to Maxxam for PAHs, VOCs, metals, and PHC F1 to F4 analyses for QA/QC purposes.

Appendix D
Field Monitoring Results

Table D-1: Summary of Combustible Soil Vapour Concentrations

Sample Location	Split Spoon Soil Vapour Concentrations (ppmv)													
	SS1	**SS2**	**SS3**	**SS4**	**SS5**	**SS6**	**SS7**	**SS8**	**SS9**	**SS10**	**SS11**	**SS12**	**SS13**	**SS14**
13-110	0	0	NS	**10**	NS	-	-	-	-	-	-	-	-	-
13-105	**5**	0	0	5	-	-	-	-	-	-	-	-	-	-
13-106	**10**	5	5	0	0	0	-	-	-	-	-	-	-	-
13-107	**25**	-	-	-	-	-	-	-	-	-	-	-	-	-
13-113	NM	NM	**NM**	NM	NM	NM	NM	NM	NM	NM	NM	-	-	-
13-201	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-
13-205	**5**	15	**20**	10	5	10	5	10	0	0	5	-	-	-
13-209	0	**0**	0	0	0	**0**	0	-	-	-	-	-	-	-
13-212	**5**	**10**	NS	-	-	**-**	-	-	-	-	-	-	-	-
13-213	**15**	NS	NS	NS	NS	-	-	-	-	-	-	-	-	-
14-220A	**200**	0	5	**0**	0	0	NM	0	-	-	-	-	-	-
13-227	NS	**15**	NS	-	-	-	-	-	-	-	-	-	-	-
14-228	25	20	**40**	-	-	-	-	-	-	-	-	-	-	-
13-229	0	NS	**0**	**0**	NS	**-**	-	-	-	-	-	-	-	-
13-231	**5**	0	25	5	10	0	**55**	90	-	-	-	-	-	-
13-234	0	**20**	5	0	0	**5**	ST	0	ST	0	0	-	-	-
14-316	**NM**	**0**	-	-	-	-	-	-	-	-	-	-	-	-
14-317	**120**	0	**0**	0	0	0	-	-	-	-	-	-	-	-
14-319	10	**35**	25	5	5	5	NM	0	0	**100**	0	15	NM	NM
14-401	0	0	**0**	0	**0**	60	NM	10	10	5	0	NM	NM	
14-402	60	10	**25**	15	**25**	NM	20	NM	10	NM	10	NM	10	NM
14-502	0	**0**	0	0	**0**	0	-	-	-	-	-	-	-	-

Notes:

BOLD Split spoon sample was submitted for laboratory analysis
ppmv Parts per million by vapour
SS1 Split spoon number 1
NS No sample for this interval - low recovery prevented vapour analysis or collection of sample
ST Shelby tube sample taken by Golder Associates Ltd.
NM Combustible vapour concentration not measured
- No split spoon sample

Table D2 - Summary of Groundwater Monitoring Results
CSST
Project No. 163401060

Type of Well	Location	Monitoring Date (mm/dd/yyyy)	Monitoring Well Elevation (mASL)	Monitoring Well Total Depth (mbTOP)	Measured Groundwater Level (mbTOP)	Groundwater Elevation (mASL)	Vapours					Presence of Sheen or PHC Product	Comments
							Hex (ppm)	IBL (ppm)	O_2 (%)	H_2S (ppm)	CO (ppm)		
Environmental Wells	13-104C	1/8/2014	69.89	9.15	8.93	60.96	25	5	20.9	0	0	None	-
	13-105A	4/23/2015	NM	13.40	5.05	NM	0	0	20.7	0	0	None	-
	13-105B	4/23/2015	58.24	6.04	5.14	53.1	0.2	0	20.3	0	0	None	-
	13-106C	1/15/2014	57.51	5.39	4.63	52.88	165	0	19.4	0	0	None	-
	13-107A	1/13/2014	55.35	3.42	0.87	54.48	0	0	20.9	0	0	None	-
	13-108A	12/18/2013	56.13	4.40	1.83	54.3	67 % LEL	100	18.2	0	0	None	-
	13-110A	4/20/2015	NM	16.84	2.37	NM	0.1	0	20.7	0	0	None	Sewage odour
	13-110B	4/20/2015	NM	8.97	2.31	NM	0	0	20.7	0	0	None	-
	13-110C	12/19/2013	NM	3.19	2.67	NM	4% LEL	0	20.9	0	0	None	-
		4/20/2015	NM	3.10	2.30	NM	0.1	0	18.3	0	0	None	-
	13-111B	12/18/2013	73.2	11.10	7.69	65.51	47% LEL	3% LEL	20.9	0	0	None	-
	13-201B	1/14/2014	NM	7.88	5.67	NM	7% LEL	2	19	0	156	None	-
	13-203A	4/23/2015	NM	25.72	8.39	NM	0.1	0	20.3	0	0	None	-
	13-203B	4/23/2015	68.54	10.70	8.58	59.96	0.1	0	20.6	0	0	None	-
	13-205B	12/16/2013	NM	9.00	7.41	NM	0	0	20.9	0	0	None	-
	13-207B	4/21/2015	NM	23.36	6.56	NM	0	0	20.4	0	0	None	-
	13-207C	12/12/2013	NM	5.93	4.36	NM	20	0	21	0	0	None	-
	13-209A	4/21/2015	NM	28.01	10.47	NM	0	0	15.6	0	0	None	-
	13-209B	4/21/2015	NM	14.98	10.41	NM	0	0	6.7	0	0	None	-
	13-209C	12/16/2013	NM	7.55	Dry	NM	15	0	20.6	0	0	None	Well was dry.
		4/21/2015	NM	7.55	Dry	NM	0	0	19.6	0	0	None	-
	13-211A	4/22/2015	NM	4.64	Dry	NM	0	0	20.7	0	0	None	-
	13-211	4/23/2015	NM	27.11	24.48	NM	0	0	20.8	0	0	None	-
	13-213A	4/23/2015	NM	15.97	7.02	NM	0.1	0	20.4	0	0	None	-
	13-213B	1/13/2014	NM	5.02	4.99	NM	0	0	20.9	0	0	None	Well was dry.
		4/22/2015	NM	5.02	4.98	NM	0	0	20.4	0	0	None	-
	13-218C	1/16/2014	58.087	7.60	4.87	53.217	0	0	17	0	0	None	-
	14-224	4/21/2015	NM	2.10	0.69	NM	0	0	20.6	0	0	None	-
	13-227A	4/20/2015	NM	10.00	0.93	NM	0	0	20.5	0	0	None	-
	13-227B	4/20/2015	NM	1.62	0.74	NM	0	0	20.7	0	0	None	-
	13-231C	1/6/2014	NM	7.38	5.56	NM	75	1 *	20.9	0	0	None	-
	13-234C	1/6/2014	68.615	7.00	5.2	63.415	4% LEL	1.6 *	20.9	0	0	None	-
	14-314	4/23/2015	NM	7.46	6.2	NM	0	0	17.5	0	0	None	-
	14-316	4/29/2015	NM	8.72	5.91	NM	250	NM	NM	NM	NM	None	-
	14-319	4/22/2015	NM	11.00	4.78	NM	0.1	0	20	0	0	None	-
	14-322	4/22/2015	NM	28.88	13.98	NM	0	0	20.4	0	0	None	-
	14-401	4/20/2015	NM	7.00	4.30	NM	0	0	20.4	0	0	None	-
	14-402A	4/20/2015	NM	6.73	3.16	NM	0	0	20.7	0	0	None	-

Notes:

NM	Parameter Not Measured - See comments
-	Well was not monitored - See comments
LEL	Lower Explosive Limit
ppm	Parts Per Million
mASL	Metres above sea level
mbTOP	Metres below top of pipe
PHC	Petroleum Hydrocarbon
*	Vapours measured using Minirae 3000. All other vapours are meausued using an RKI Eagle II

Table D3 - Summary of Groundwater Monitoring Results
Physical Well Conditions
CSST
Project No. 163401060

Parameter	Units	MW13-104C	MW13-106C	MW13-107	MW13-107A	MW13-108A	MW13-110C	MW13-111B	MW13-205B	MW13-207B	MW13-211	MW13-218C	MW13-229	MW13-231A	MW13-231C	MW13-234C
Sample Date (yyyy/mm/dd)		2014/01/08	2014/01/15	2014/01/15	2014/01/17	2013/12/18	2013/12/19	2013/12/18	2014/01/10	2013/12/18	2014/01/16	2014/01/18	2014/01/31	2014/01/08	2014/01/07	2014/01/08
Temperature	°C	9.03	9.89	10.91	6.2	7.02	6.72	9.93	6.81	6.51	5	9.2	NM	4.95	10.84	9.79
Total Dissolved Solids	mg/L	2.4	4.9	0.864	0.474	1.59	1.19	1.25	1.08	1.69	10	1.91	NM	NM	4.42	0.714
Conductivity	mS/cm	3.65	7.76	1.36	0.741	2.48	1.84	1.94	1.69	2.64	16.1	2.96	NM	1.41	6.88	1.11
pH	pH units	7.53	6.78	7	6.88	8.01	7.61	7.23	6.98	7.19	7.16	6.82	NM	7.01	7.21	7.89
Oxidation Reduction Potential	mV	-164	-2	-56	146	-180	-107	-38	-49	24	91	200	NM	-246	46	-148
Turbidity	NTU	141	1000*	1000*	109	215	289	139	74	1000*	1000*	160	NM	1000*	1000*	1000*
Dissolved Oxygen	mg/L	0	5.35	1.76	0	0	0..0	0	0	0	45	0.19	NM	0	0	4.18

NOTES:

*	Maximum turbidity reading is 1000 NTU
nv	No criteria value is available for parameter
NM	Not measured due inadequate water supply or slow water recovery within the monitoring well.

Appendix E
Soil and Groundwater Laboratory Analytical Results

Table E1 - Summary of Soil Analytical Results
Petroleum Hydrocarbons F1-F4
CSST
Project No. 163401060

Parameter	Units	Ontario	Ontario	BH13-105 SS1 (Cumberland and Murray Streets)	BH13-106 SS1 (Cumberland and St. Andrew)	BH13-107 (Rose and Cathcart Rideau River)	BH13-110 SS4 (Stanley Park)	BH13-113 SS3 (Kent and Macleod)	BH13-201 (Slater and Kent)	BH13-205 SS1 (Confederation Park)	BH13-205 SS3 (Confederation Park)	BH13-209 SS2 (Laurier and Nicholas)	BH13-209 SS6 (Laurier and Nicholas)	BH13-212 SS1 (Cumberland and Rideau)	BH13-212 SS2 (Cumberland and Rideau)	BH13-213 SS1 (Cumberland and York)	BH14-220A SS1 (Cumberland and Buyere)	BH14-220A SS4 (Cumberland and Buyere)	BH13-227 SS2 (Stanley Park)	BH14-228 SS3 (Queen Victoria and Riverlane)	BH13-229 SS3 (Supreme Court)	BH13-229 SS4 (Supreme Court)	BH13-231 SS3 (Kent and Florence)	BH13-231 SS7 (Kent and Florence)	BH13-234 SS2 (Catherine and Kent)	BH13-234 SS6 (Catherine and Kent)	BH14-316 SS1 (Cumberland and George)	BH14-316 SS2 (Cumberland and George)	BH14-317 SS1 (Kent and Lisgar)	BH14-317 SS3 (Kent and Lisgar)	BH14-319 SS2 (Laurier and Queen Elizabeth)	BH14-319 SS10 (Laurier and Queen Elizabeth)	BH14-401 SS3 (Kent and HWY 417)	BH14-401 SS5 (Kent and HWY 417)	BH14-402 SS3 (Kent and Chamberlain)	BH14-402 SS5 (Kent and Chamberlain)	BH14-502 SA2 (Supreme Court)	BH14-502 SA5 (Supreme Court)
Sample Date (yyyy/mm/dd)		Table 1 [1]	Table 3 [2]	2013/09/24	2013/09/23	2013/09/25	2013/11/11	2013/09/17	2013/10/22	2013/11/04	2013/11/04	2013/10/25	2013/10/25	2013/12/02	2013/12/02	2013/10/22	2014/12/12	2014/12/12	2013/11/25	2014/04/24	2013/11/25	2013/11/25	2013/10/24	2013/10/24	2013/10/24	2013/10/21	2013/10/21	2014/12/15	2014/12/15	2014/12/16	2014/12/16	2014-12-05	2014-12-05	2014-10-07	2014-10-07	2014-10-08	2014-10-08	2014-09-27	2014-09-27
Approximate Sample Interval (m bgs)				3.05-3.66	3.05-3.81	0.61-1.22	1.52-2.13	2.20-2.80	0.31-1.80	0.76-1.37	2.29-2.90	0.91-1.52	4.57-5.18	3.05-3.66	3.81-4.42	2.29-2.90	0.76-1.37	2.80-3.66	0.76-1.37	2.29-2.61	1.52-2.13	2.29-2.90	2.29-2.90	8.38-8.99	0.91-1.52	4.57-5.18	2.89-3.58	3.58-4.30	3.81-4.42	6.09-6.71	0.76-1.37	9.14-9.75	1.22-1.83	2.29-2.90	1.22-1.83	2.44-3.05	0.76-1.37	3.05-3.51
F1 PHCs (C6 - C10)	µg/g	25	55	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**150** [1]	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 PHCs (>C10 - C16)	µg/g	10	230	<10	<10	**62** [1]	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**100** [1]	**19** [1]	**15** [1]	<10	<10	<10	<10	<10	<10	<20	<10	**12** [1]	<10	<10	<10	<10	<10	<10	<10
F3 PHCs (>C16 - C34)	µg/g	240	1700	<10	<10	**320** [1]	160	<10	<10	28	110	12	<10	<50	<50	<10	<50	<50	<10	**280** [1]	41	16	<10	<10	<10	78	<50	<50	<100	<50	24	<10	<10	<10	<10	<10	<50	<50
F4 PHCs (>C34 - C50)	µg/g	120	3300	<10	<10	**150** [1]	68	<10	<10	<10	**180** [1]	16	<10	<50	<50	<10	<50	<50	<10	**340/(1200)** [1]	22	11	<10	<10	<10	**340 (1300)** [1]	<50	<50	<100	<50	**74 (640)**	<10	<10	<10	<10	<10	<50	<50

NOTES:

1 Table 1, Full Depth Background Site Condition Standards, residential/parkland/institutional/industrial /commercial/ community property use, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* , April 15, 2011.

2 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Soil Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

( ) Denotes F4 gravimetric analysis as sample did not reach baseline during analysis.

m bgs Metres below grade surface..

BOLD Concentration exceeds the indicated MOE standard.

Table E2 - Summary of Soil Analytical Results
Volatile Organic Compounds
CSST
Project No. 163401060

Parameter	Units	Ontario	Ontario	BH13-105 SS1 (Cumberland and Murray)	BH13-106 SS1 (Cumberland and St. Andrew)	BH13-107 (Rose and Cathcart Rideau River)	BH13-110 SS4 (Stanley Park)	BH13-113 SS3 (Kent and Mcleod)	BH13-201 (Slater and Kent)	BH13-205 SS1 (Confederation Park)	BH13-208 SS3 (Confederation Park)	BH13-209 SS2 (Laurier and Nicholas)	BH13-209 SS6 (Laurier and Nicholas)	BH13-212 SS1 (Cumberland and Rideau)	BH13-212 SS2 (Cumberland and Rideau)	BH13-213 SS1 (Cumberland and York)	BH14-220A SS1 (Cumberland and Bayview)	BH14-220A SS4 (Cumberland and Bayview)	BH13-227 SS2 (Stanley Park)	BH14-228 SS3 (Queen Victoria and Riverlane)	BH13-229 SS3 (Supreme Court)	BH13-229 SS4 (Supreme Court)	BH13-231 SS3 (Kent and Florence)	BH13-231 SS7 (Kent and Florence)	BH13-234 SS2 (Catherine and Kent)	BH13-234 SS6 (Catherine and Kent)	BH14-316 SS1 (Cumberland and George)	BH14-316 SS2 (Cumberland and George)	BH14-317 SS1 (Kent and Lisgar)	BH14-317 SS3 (Kent and Lisgar)	BH14-319 SS2 (Laurier and Queen Elizabeth)	BH14-319 SS10 (Laurier and Queen Elizabeth)	BH14-401 SS3 (Kent and HWY 417)	BH14-401 SS5 (Kent and HWY 417)	BH14-402 SS3 (Kent and Chamberlain)	BH14-402 SS5 (Kent and Chamberlain)	BH14-502 SA2 (Supreme Court)	BH14-502 SA5 (Supreme Court)
Sample Date (yyyy/mm/dd)		Table 1 [1]	Table 3 [2]	2013/09/24	2013/09/23	2013/09/25	2013/11/11	2013/09/17	2013/10/22	2013/11/04	2013/11/04	2013/10/25	2013/10/25	2013/12/02	2013/12/02	2013/10/22	2014/12/12	2014/12/12	2013/11/25	2014/04/24	2013/11/25	2013/11/25	2013/10/24	2013/10/24	2013/10/21	2013/10/21	2014/12/15	2014/12/15	2014/12/16	2014/12/16	2014-12-05	2014-12-05	2014-10-07	2014-10-07	2014-10-08	2014-10-08	2014-09-27	2014-09-27
Approximate Sample Interval (m bgs)				3.05-3.66	3.05-3.81	0.61-1.22	1.52-2.13	2.20-2.80	0.31-1.80	0.76-1.37	2.29-2.90	0.91-1.52	4.57-5.18	3.05-3.66	3.81-4.42	2.29-2.90	0.76-1.37	2.80-3.66	0.76-1.37	2.29-2.61	1.52-2.13	2.29-2.90	2.29-2.90	8.38-8.99	0.91-1.52	4.57-5.18	2.89-3.58	3.58-4.30	3.81-4.42	6.09-6.71	0.76-1.37	9.14-9.75	1.22-1.83	2.29-2.90	1.22-1.83	2.44-3.05	0.76-1.37	3.05-3.51
Acetone	µg/g	0.5	16	<0.50	<0.50	<0.50	<1.0*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	µg/g	0.02	0.32	<0.020	<0.020	0.02	<0.040*	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0060	<0.0060
Bromodichloromethane	µg/g	0.05	18	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	µg/g	0.05	0.61	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane	µg/g	0.05	0.05	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.24** [1,3]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon Tetrachloride	µg/g	0.05	0.21	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	µg/g	0.05	2.4	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform	µg/g	0.05	0.47	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	µg/g	0.05	13	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	µg/g	0.05	6.8	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	µg/g	0.05	9.6	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	µg/g	0.05	0.2	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	µg/g	0.05	17	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	µg/g	0.05	0.05	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	µg/g	0.05	0.064	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cis-1,2-Dichloroethylene	µg/g	0.05	55	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	µg/g	0.05	1.3	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	µg/g	0.05	0.16	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cis-1,3-Dichloropropylene	µg/g	0.05	NV	<0.050	<0.050	<0.050	<0.060*	<0.050	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.030	<0.030
Trans-1,3-Dichloropropylene	µg/g	0.05	NV	<0.050	<0.050	<0.050	<0.080*	<0.050	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.050	<0.050	<0.050	<0.050	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Ethylbenzene	µg/g	0.05	9.5	<0.020	<0.020	<0.020	<0.040*	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.010	<0.010
Ethylene Dibromide	µg/g	0.05	0.05	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.086** [1,3]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.50*	<0.50	<0.50	<0.050	<0.050	<0.050	<0.050
Methyl Ethyl Ketone	µg/g	0.5	70	<0.50	<0.50	<0.50	<1.0*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.050	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.050
Methylene Chloride	µg/g	0.05	1.6	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.50	<0.050	<0.050	**2.7** [1,3]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methyl Isobutyl Ketone	µg/g	0.5	31	<0.50	<0.50	<0.50	<1.0*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.05	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl-t-Butyl Ether	µg/g	0.05	11	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Styrene	µg/g	0.05	34	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.087	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.05	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	µg/g	0.2	68	<0.020	<0.020	0.028	<0.040*	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050	<0.020	<0.05	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Tetrachloroethylene	µg/g	0.05	4.5	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	µg/g	0.05	6.1	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.14** [1]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	µg/g	0.05	0.05	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.11** [1,3]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.074** [1,3]	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	µg/g	0.05	0.91	<0.050	<0.050	<0.050	**0.35** [1]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.12** [1]	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.010	<0.010
Vinyl Chloride	µg/g	0.02	0.032	<0.020	<0.020	<0.020	<0.040*	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.05	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
m-Xylene & p-Xylene	µg/g	NV	NV	<0.020	<0.020	0.038	<0.040*	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.05	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
o-Xylene	µg/g	NV	NV	<0.020	<0.020	<0.020	<0.040*	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total Xylenes	µg/g	0.05	26	<0.020	<0.020	0.038	<0.040*	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**1.1** [1]	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**0.06** [1]	<0.020	<0.020	<0.020
Dichlorodifluoromethane	µg/g	0.05	16	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.4** [1]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.026	<0.050	<0.050	<0.050
Hexane(n)	µg/g	0.05	46	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**1.6** [1]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.087**	<0.050	<0.050	<0.050
Trichlorofluoromethane	µg/g	0.25	4	<0.050	<0.050	<0.050	<0.10*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

NOTES:

1 Table 1, Full Depth Background Site Condition Standards, residential/parkland/institutional/industrial /commercial/ community property use, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental*

2 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Soil Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

m bgs Metres below grade surface.

BOLD Concentration exceeds the indicated MOE standard.

* Detection limits elevated above the Ontario Table 1

Table E3 - Summary of Soil Analytical Results
Polycyclic Aromatic Hydrocarbons (PAHs)
CSST
Project No. 163401060

Parameter	Units	Ontario Table 1 [1]	Ontario Table 3 [2]	BH13-105 SS1 (Cumberland and Murray)	BH13-106 SS1 (Cumberland and St. Andrew)	BH13-107 (Rose and Cathcart Rideau River)	BH13-110 SS4 (Stanley Park)	BH13-113 SS3 (Kent and Mcleod)	BH13-201 (Slater and Kent)	BH13-205 SS1 (Confederation Park)	BH13-205 SS3 (Confederation Park)	BH13-209 SS2 (Laurier and Nicholas)	BH13-209 SS6 (Laurier and Nicholas)	BH13-212 SS1 (Cumberland and Rideau)	BH13-212 SS2 (Cumberland and Rideau)	BH13-213 SS1 (Cumberland and York)
Sample Date (yyyy/mm/dd)				2013/09/24	2013/09/23	2013/09/25	2013/11/11	2013/09/17	2013/10/22	2013/11/04	2013/11/04	2013/10/25	2013/10/25	2013/12/02	2013/12/02	2013/10/22
Sample Interval (m bgs)				3.05-3.66	3.05-3.81	0.61-1.22	1.52-2.13	2.20-2.80	0.31-1.80	0.76-1.37	2.29-2.90	0.91-1.52	4.57-5.18	3.05-3.66	3.81-4.42	2.29-2.90
Acenaphthene	ug/g	0.072	96	<0.0050	<0.0050	**1.5** [1]	0.058	<0.0050	<0.0050	0.0084	<0.020	0.035	<0.010	<0.0050	<0.0050	<0.0050
Acenaphthylene	ug/g	0.093	0.15	<0.0050	<0.0050	**1.4** [1,2]	**0.51** [1,2]	<0.0050	0.0089	0.054	<0.020	<0.0050	<0.010	<0.0050	<0.0050	<0.0050
Anthracene	ug/g	0.16	0.67	<0.0050	<0.0050	**5.4** [1,2]	**0.67** [1]	<0.0050	0.017	0.067	0.037	0.047	<0.010	<0.0050	<0.0050	<0.0050
Benzo(a)anthracene	ug/g	0.36	0.96	<0.0050	<0.0050	**12** [1,2]	**1.7** [1,2]	<0.0050	0.073	0.32	0.03	0.075	<0.010	<0.0050	<0.0050	<0.0050
Benzo(a)pyrene	ug/g	0.3	0.3	<0.0050	<0.0050	**10** [1,2]	**1.2** [1,2]	<0.0050	0.074	**0.31** [1,2]	0.033	0.054	<0.010	<0.0050	<0.0050	<0.0050
Benzo(b/j)fluoranthene	ug/g	0.47	0.96	<0.0050	<0.0050	**12** [1,2]	**1.4** [1,2]	<0.0050	0.099	0.38	0.043	0.068	<0.010	<0.0050	<0.0050	<0.0050
Benzo(ghi)perylene	ug/g	0.68	9.6	<0.0050	<0.0050	**5.1** [1]	0.6	<0.0050	0.054	0.18	0.023	0.028	<0.010	<0.0050	<0.0050	<0.0050
Benzo(k)fluoranthene	ug/g	0.48	0.96	<0.0050	<0.0050	**5.1** [1,2]	**0.5** [1]	<0.0050	0.035	0.14	<0.020	0.022	<0.010	<0.0050	<0.0050	<0.0050
Chrysene	ug/g	2.8	9.6	<0.0050	<0.0050	**9.5** [1]	1.5	<0.0050	0.067	0.29	0.041	0.064	<0.010	<0.0050	<0.0050	<0.0050
Dibenzo(a,h)anthracene	ug/g	0.1	0.1	<0.0050	<0.0050	**1.5** [1,2]	**0.17** [1,2]	<0.0050	0.013	0.044	<0.020	0.0071	<0.010	<0.0050	<0.0050	<0.0050
Fluoranthene	ug/g	0.56	9.6	<0.0050	<0.0050	**28** [1,2]	**3** [1]	<0.0050	0.14	0.46	0.058	0.18	<0.010	<0.0050	<0.0050	<0.0050
Fluorene	ug/g	0.12	62	<0.0050	<0.0050	**2.5** [1]	**0.15** [1]	<0.0050	<0.0050	0.012	<0.020	0.025	<0.010	<0.0050	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	ug/g	0.23	0.76	<0.0050	<0.0050	**5.8** [1,2]	**0.61** [1]	<0.0050	0.055	0.19	<0.020	0.03	<0.010	<0.0050	<0.0050	<0.0050
1-Methylnaphthalene	ug/g	0.59	76*	<0.0050	<0.0050	0.56	0.024	<0.0050	<0.0050	0.026	<0.020	0.0055	<0.010	<0.0050	<0.0050	<0.0050
2-Methylnaphthalene	ug/g	0.59		<0.0050	<0.0050	**0.8** [1]	0.026	<0.0050	<0.0050	0.028	0.021	<0.0050	<0.010	<0.0050	<0.0050	0.0055
Naphthalene	ug/g	0.09	9.6	<0.0050	<0.0050	**2** [1]	0.047	<0.0050	<0.0050	0.025	0.029	0.006	<0.010	<0.0050	<0.0050	<0.0050
Phenanthrene	ug/g	0.69	12	<0.0050	<0.0050	**18** [1,2]	**2.3** [1]	<0.0050	0.058	0.23	0.07	0.19	<0.010	<0.0050	<0.0050	0.0061
Pyrene	ug/g	1	96	<0.0050	<0.0050	**19** [1]	**3.5** [1]	<0.0050	0.12	0.4	0.055	0.14	<0.010	<0.0050	<0.0050	<0.0050

NOTES:

1	Table 1, Full Depth Background Site Condition Standards, residential/parkland/institutional/industrial /commercial/ community property use, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* , April 15, 2011.
2	Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Soil Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
m bgs	Metres below grade surface.
*	The methyl naphthalene standards are applicable to both 1-methyl naphthallene and 2-methyl naphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.
BOLD	Concentration exceeds the indicated MOE standard.

Table E3 - Summary of Soil Analytical Results
Polycyclic Aromatic Hydrocarbons (PAHs)
CSST
Project No. 163401060

Parameter	Units	Ontario Table 1 [1]	Ontario Table 3 [2]	BH14-220A SS1 (Cumberland and Buyere)	BH14-220A SS4 (Cumberland and Buyere)	BH13-227 SS2 (Stanley Park)	BH14-228 SS3 (Queen Victoria and Riverlane)	BH13-229 SS3 (Supreme Court)	BH13-229 SS4 (Supreme Court)	BH13-231 SS3 (Kent and Florence)	BH13-231 SS7 (Kent and Florence)	BH13-234 SS2 (Catherine and Kent)	BH13-234 SS2 (Catherine and Kent)	BH13-234 SS6 (Catherine and Kent)	BH14-316 SS1 (Cumberland and George)	BH14-316 SS2 (Cumberland and George)
Sample Date (yyyy/mm/dd)				2014/12/12	2014/12/12	2013/11/25	2014/04/24	2013/11/25	2013/11/25	2013/10/24	2013/10/24	2013/10/21	2013/10/21	2013/10/21	2014/12/15	2014/12/15
Sample Interval (m bgs)				0.76-1.37	2.80-3.66	0.76-1.37	2.29-2.61	1.52-2.13	2.29-2.90	2.29-2.90	8.38-8.99	0.91-1.52	0.91-1.52	4.57-5.18	2.89-3.58	3.58-4.30
Acenaphthene	ug/g	0.072	96	<0.0050	<0.0050	<0.0050	0.017	**0.075** [1]	0.068	<0.0050	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Acenaphthylene	ug/g	0.093	0.15	<0.0050	<0.0050	<0.0050	**0.13** [1]	0.011	0.012	<0.0050	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene	ug/g	0.16	0.67	<0.0050	<0.0050	<0.0050	0.16	0.15	0.14	<0.0050	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(a)anthracene	ug/g	0.36	0.96	0.015	<0.0050	<0.0050	**0.43** [1]	0.23	0.23	0.012	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(a)pyrene	ug/g	0.3	0.3	0.016	<0.0050	<0.0050	**0.37** [1,2]	0.2	0.2	0.012	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b/j)fluoranthene	ug/g	0.47	0.96	0.023	<0.0050	0.0066	**0.49** [1]	0.27	0.28	0.015	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(ghi)perylene	ug/g	0.68	9.6	0.015	<0.0050	<0.0050	0.21	0.13	0.13	0.0082	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(k)fluoranthene	ug/g	0.48	0.96	0.0068	<0.0050	<0.0050	0.19	0.11	0.11	0.005	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Chrysene	ug/g	2.8	9.6	0.013	<0.0050	<0.0050	0.33	0.21	0.21	0.011	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Dibenzo(a,h)anthracene	ug/g	0.1	0.1	<0.0050	<0.0050	<0.0050	0.059	0.032	0.031	<0.0050	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	ug/g	0.56	9.6	0.018	<0.0050	0.009	**0.94** [1]	**0.6** [1]	**0.64** [1]	0.021	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Fluorene	ug/g	0.12	62	<0.0050	<0.0050	<0.0050	0.1	0.08	0.062	<0.0050	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	ug/g	0.23	0.76	0.012	<0.0050	<0.0050	0.22	0.12	0.12	0.0075	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050
1-Methylnaphthalene	ug/g	0.59	76*	<0.0050	<0.0050	<0.0050	0.04	0.08	0.035	<0.0050	<0.0050	0.083	<0.0050	<0.0050	<0.0050	<0.0050
2-Methylnaphthalene	ug/g	0.59		<0.0050	<0.0050	<0.0050	0.053	0.1	0.044	<0.0050	<0.0050	0.13	<0.0050	<0.0050	<0.0050	<0.0050
Naphthalene	ug/g	0.09	9.6	<0.0050	<0.0050	<0.0050	0.052	0.055	0.031	<0.0050	<0.0050	0.05	<0.0050	<0.0050	<0.0050	<0.0050
Phenanthrene	ug/g	0.69	12	0.0062	<0.0050	0.006	0.59	0.57	0.55	0.0075	<0.0050	0.061	<0.0050	<0.0050	<0.0050	<0.0050
Pyrene	ug/g	1	96	0.019	<0.0050	0.0078	0.73	0.48	0.5	0.018	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050

NOTES:

1	Table 1, Full Depth Background Site Condition Standards, residential/parkland/institutional/industrial /commercial/ community property use, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* , April 15, 2011.
2	Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Soil Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
m bgs	Metres below grade surface.
*	The methyl naphthalene standards are applicable to both 1-methyl naphthallene and 2-methyl naphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.
BOLD	Concentration exceeds the indicated MOE standard.

Table E3 - Summary of Soil Analytical Results
Polycyclic Aromatic Hydrocarbons (PAHs)
CSST
Project No. 163401060

Parameter	Units	Ontario Table 1 [1]	Ontario Table 3 [2]	BH14-317 SS1 (Kent and Lisgar)	BH14-317 SS3 (Kent and Lisgar)	BH14-319 SS2 (Laurier and Queen Elizabeth)	BH14-319 SS10 (Laurier and Queen Elizabeth)	BH14-401 SS3 (Kent and HWY 417)	BH14-401 SS5 (Kent and HWY 417)	BH14-402 SS3 (Kent and Chamberlain)	BH14-402 SS5 (Kent and Chamberlain)	BH14-502 SA2 (Supreme Court)	BH14-502 SA5 (Supreme Court)
Sample Date (yyyy/mm/dd)				2014/12/16	2014/12/16	2014-12-05	2014-12-05	2014-10-07	2014-10-07	2014-10-08	2014-10-08	2014-09-27	2014-09-27
Sample Interval (m bgs)				3.81-4.42	6.09-6.71	0.76-1.37	9.14-9.75	1.22-1.83	2.29-2.90	1.22-1.83	2.44-3.05	0.76-1.37	3.05-3.51
Acenaphthene	ug/g	0.072	96	<0.010	<0.0050	0.01	<0.0050	<0.0050	<0.010	0.032	<0.010	**0.13** [1]	**0.35** [1]
Acenaphthylene	ug/g	0.093	0.15	<0.010	<0.0050	0.0056	<0.0050	<0.0050	<0.010	0.057	<0.010	0.065	0.035
Anthracene	ug/g	0.16	0.67	<0.010	<0.0050	0.015	<0.0050	<0.0050	<0.010	0.11	<0.010	**0.45** [1]	**1.2** [1,2]
Benzo(a)anthracene	ug/g	0.36	0.96	<0.010	<0.0050	0.03	<0.0050	<0.0050	<0.010	**0.40** [1]	<0.010	**1.3** [1,2]	**1.5** [1,2]
Benzo(a)pyrene	ug/g	0.3	0.3	<0.010	<0.0050	0.031	<0.0050	<0.0050	<0.010	0.30	<0.010	**0.99** [1,2]	**1.2** [1,2]
Benzo(b/j)fluoranthene	ug/g	0.47	0.96	<0.010	<0.0050	0.037	<0.0050	<0.0050	<0.010	**0.48** [1]	<0.010	**1.2** [1,2]	**1.4** [1,2]
Benzo(ghi)perylene	ug/g	0.68	9.6	<0.010	<0.0050	0.025	<0.0050	<0.0050	<0.010	0.21	<0.010	0.51	0.58
Benzo(k)fluoranthene	ug/g	0.48	0.96	<0.010	<0.0050	0.014	<0.0050	<0.0050	<0.010	0.19	<0.010	0.41	0.47
Chrysene	ug/g	2.8	9.6	<0.010	<0.0050	0.024	<0.0050	<0.0050	<0.010	0.35	<0.010	1.3	1.5
Dibenzo(a,h)anthracene	ug/g	0.1	0.1	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	0.061	<0.010	**0.15** [1,2]	**0.16** [1,2]
Fluoranthene	ug/g	0.56	9.6	<0.010	<0.0050	0.056	0.0065	0.0065	<0.010	**0.81** [1]	<0.010	**2.6** [1]	**4.0** [1]
Fluorene	ug/g	0.12	62	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	**0.040** [1]	<0.010	**0.16** [1]	**0.73** [1]
Indeno(1,2,3-cd)pyrene	ug/g	0.23	0.76	<0.010	<0.0050	0.021	<0.0050	<0.0050	<0.010	0.23	<0.010	**0.54** [1]	**0.65** [1]
1-Methylnaphthalene	ug/g	0.59	76*	<0.010	<0.0050	0.011	<0.0050	<0.0050	<0.010	0.013	<0.010	0.034	0.19
2-Methylnaphthalene	ug/g	0.59		<0.010	<0.0050	<0.010	<0.0050	<0.0050	<0.010	0.011	<0.010	0.037	0.27
Naphthalene	ug/g	0.09	9.6	<0.010	<0.0050	<0.010	<0.0050	<0.0050	<0.010	0.015	<0.010	0.060	**0.66** [1]
Phenanthrene	ug/g	0.69	12	<0.010	<0.0050	0.076	<0.0050	0.0085	<0.010	0.41	<0.010	**1.8** [1]	**4.4** [1]
Pyrene	ug/g	1	96	<0.010	<0.0050	0.058	<0.0050	0.006	<0.010	0.62	<0.010	**2.0** [1]	**3.0** [1]

NOTES:

1	Table 1, Full Depth Background Site Condition Standards, residential/parkland/institutional/industrial /commercial/ community property use, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* , April 15, 2011.
2	Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Soil Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
m bgs	Metres below grade surface.
*	The methyl naphthalene standards are applicable to both 1-methyl naphthallene and 2-methyl naphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.
BOLD	Concentration exceeds the indicated MOE standard.

Table E4 - Summary of Soil Analytical Results
Metals and Inorganics
CSST
Project No. 163401060

Parameter	Units	Ontario	Ontario	BH13-105 SS1 (Cumberland and Murray)	BH13-106 SS1 (Cumberland and St. Andrew)	BH13-107 (Rose and Cathcart Rideau River)	BH13-110 SS4 (Stanley Park)	BH13-113 SS3 (Kent and Mcleod)	BH13-201 (Slater and Kent)	BH13-205 SS1 (Confederation Park)	BH13-205 SS3 (Confederation Park)	BH13-209 SS2 (Laurier and Nicholas)	BH13-209 SS6 (Laurier and Nicholas)	BH13-212 SS1 (Cumberland and Rideau)	BH13-212 SS2 (Cumberland and Rideau)	BH13-213 SS1 (Cumberland and York)	BH14-220A SS1 (Cumberland and Buyere)
Sample Date (yyyy-mm-dd)		**Table 1 [1]**	**Table 3 [2]**	2013/09/24	2013/09/23	2013/09/25	2013/11/11	2013/09/17	2013/10/22	2013/11/04	2013/11/04	2013/10/25	2013/10/25	2013/12/02	2013/12/02	2013/10/22	2014/12/12
Approximate Sample Interval (m bgs)				3.05-3.66	3.05-3.81	0.61-1.22	1.52-2.13	2.20-2.80	0.31-1.80	0.76-1.37	2.29-2.90	0.91-1.52	4.57-5.18	3.05-3.66	3.81-4.42	2.29-2.90	0.76-1.37
Aluminum	ug/g	NV	NV	23000	16000	11000	11000	2600	4300	11000	27000	8700	35000	2400	2600	2300	NA
Antimony	ug/g	1.3	40	<0.20	<0.20	0.8	**1.7** [1]	<0.20	0.9	**17** [1]	**2.7** [1]	<0.20	<0.20	<0.20	<0.20	<0.20	0.2
Arsenic	ug/g	18	18	2.4	4.2	4.2	11	<1.0	3.4	3.2	2.4	<1.0	2.4	2.7	2.7	1.1	1.6
Barium	ug/g	220	670	**260** [1]	170	160	**380** [1]	18	93	160	**230** [1]	62	**410** [1]	44	63	43	**270** [1]
Beryllium	ug/g	2.5	8	0.65	0.56	0.45	0.52	<0.20	0.27	0.36	0.82	0.22	0.73	<0.20	0.22	<0.20	0.51
Boron	ug/g	36	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.1
Cadmium	ug/g	1.2	1.9	<0.10	<0.10	0.19	0.67	<0.10	0.52	0.18	0.22	<0.10	<0.10	<0.10	<0.10	<0.10	0.19
Calcium	ug/g	NV	NV	23000	28000	68000	26000	8100	92000	24000	18000	3400	11000	200000	210000	180000	NA
Chromium	ug/g	70	160	62	38	29	40	10	12	36	**71** [1]	25	**140** [1]	7	7.5	6.3	51
Cobalt	ug/g	21	80	17	13	8.5	8.4	2.7	5.7	11	13	4.4	**28** [1]	3.3	3.5	2.6	12
Copper	ug/g	92	230	33	25	29	61	7.7	31	25	26	8.8	67	5.4	5.1	9.2	32
Iron	ug/g	NV	NV	36000	28000	22000	23000	8200	13000	20000	29000	11000	52000	8800	8100	6800	NA
Lead	ug/g	120	120	5.9	5.9	75	**470** [1,2]	1.7	**210** [1,2]	**210** [1,2]	35	3.4	6.7	4.9	3.4	3.2	50
Magnesium	ug/g	NV	NV	18000	16000	8700	4700	2900	8100	8100	11000	3500	25000	11000	7100	7200	NA
Manganese	ug/g	NV	NV	600	530	410	590	120	320	350	460	190	700	230	190	230	NA
Molybdenum	ug/g	2	40	1.1	1.2	0.88	1.5	<0.50	0.73	0.57	0.51	<0.50	0.98	0.81	0.6	<0.50	0.62
Nickel	ug/g	82	270	38	26	19	20	6.3	12	23	34	14	80	6.5	6.9	5.1	29
Phosphorous	ug/g	NV	NV	1100	1100	1100	2700	540	1200	1000	16000	710	960	700	680	890	NA
Potassium	ug/g	NV	NV	9100	5800	2700	1700	530	770	3300	4700	1200	15000	750	750	890	NA
Selenium	ug/g	1.5	5.5	<0.50	<0.50	<0.50	0.56	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	ug/g	0.5	40	<0.20	<0.20	<0.20	**0.62** [1]	<0.20	<0.20	<0.20	0.23	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sodium	ug/g	NV	NV	3800	1500	330	300	270	1500	1500	2600	150	2500	1100	970	710	NA
Strontium	ug/g	NV	NV	80	67	110	120	21	210	62	58	16	70	270	300	260	NA
Sulphur	ug/g	NV	NV	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	ug/g	1	3.3	0.36	0.23	0.18	0.16	<0.050	0.12	0.21	0.19	0.078	0.51	0.056	<0.050	0.052	0.24
Uranium	ug/g	2.5	33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.84
Vanadium	ug/g	86	86	77	56	36	30	15	17	43	60	23	**120** [1,2]	11	12	10	55
Zinc	ug/g	290	340	100	73	110	**450** [1,2]	15	120	93	100	45	140	12	20	11	92
pH (pH Units)	pH	NV	NV	7.68	NA	7.45	NA	7.82	7.9	7.62	7.37	7.27	7.49	7.7	7.75	NA	NA

NOTES:

1	Table 1 , Full Depth Background Site Condition Standards, residential/parkland/institutional/industrial /commercial/ community property use, Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
2	Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Soil Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
m bgs	Metres below ground surface
NV	No criteria available for given parameter.
NA	Not analyzed.
BOLD	Concentration exceeds the indicated MOE standard.

Table E4 - Summary of Soil Analytical Results
Metals and Inorganics
CSST
Project No. 163401060

Parameter	Units	Ontario	Ontario	BH14-220A SS4 (Cumberland and Buyere)	BH13-227 SS2 (Stanley Park)	BH14-228 SS3 (Queen Victoria and Riverlane)	BH13-229 SS3 (Supreme Court)	BH13-229 SS4 (Supreme Court)	BH13-231 SS3 (Kent and Florence)	BH13-231 SS7 (Kent and Florence)	BH13-234 SS2 (Catherine and Kent)	BH13-234 SS6 (Catherine and Kent)	BH14-316 SS1 (Cumberland and George)	BH14-316 SS2 (Cumberland and George)	BH14-317 SS1 (Kent and Lisgar)	BH14-317 SS3 (Kent and Lisgar)	BH14-319 SS2 (Laurier and Queen Elizabeth)
Sample Date (yyyy-mm-dd)		**Table 1 [1]**	**Table 3 [2]**	2014/12/12	2013/11/25	2014/04/24	2013/11/25	2013/11/25	2013/10/24	2013/10/24	2013/10/21	2013/10/21	2014/12/15	2014/12/15	2014/12/16	2014/12/16	2014-12-05
Approximate Sample Interval (m bgs)				2.80-3.66	0.76-1.37	2.29-2.61	1.52-2.13	2.29-2.90	2.29-2.90	8.38-8.99	0.91-1.52	4.57-5.18	2.89-3.58	3.58-4.30	3.81-4.42	6.09-6.71	0.76-1.37
Aluminum	ug/g	NV	NV	NA	19000	NA	4000	4600	14000	4000	3700	33000	NA	NA	NA	NA	NA
Antimony	ug/g	1.3	40	<0.20	0.2	<0.20	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic	ug/g	18	18	<1.0	4	3.3	1	2	1.6	1.2	<1.0	2.4	1.3	2.5	<1.0	<1.0	2
Barium	ug/g	220	670	**320** [1]	**240** [1]	110	43	57	160	100	30	**430** [1]	**410** [1]	**280** [1]	**410** [1]	75	**320** [1]
Beryllium	ug/g	2.5	8	0.73	0.9	0.37	<0.2	0.3	0.35	0.2	<0.20	0.73	0.22	0.31	0.85	0.22	0.7
Boron	ug/g	36	120	6.9	NA	NA	NA	NA	NA	NA	NA	NA	5.8	6.6	8.3	<5.0	<5.0
Cadmium	ug/g	1.2	1.9	<0.10	0.4	0.17	<0.1	<0.1	<0.10	<0.10	<0.10	0.1	<0.10	<0.10	0.12	<0.10	<0.10
Calcium	ug/g	NV	NV	NA	20000	NA	85000	91000	18000	87000	4200	13000	NA	NA	NA	NA	NA
Chromium	ug/g	70	160	**78** [1]	38	14	12	10	48	11	12	**110** [1]	7.6	8.5	**140** [1]	13	**100** [1]
Cobalt	ug/g	21	80	19	14	4.9	3.2	3.8	11	4.6	2.8	**26** [1]	2.7	3.1	**28** [1]	4.7	**25** [1]
Copper	ug/g	92	230	37	18	15	6.4	7.4	26	9.7	6.4	57	5.3	5.5	64	11	47
Iron	ug/g	NV	NV	NA	34000	NA	8100	9700	22000	11000	7300	50000	NA	NA	NA	NA	NA
Lead	ug/g	120	120	6	19	12	11	36	17	3.2	1.3	6.2	4	3.1	7	2.7	12
Magnesium	ug/g	NV	NV	NA	11000	NA	3700	6300	11000	8700	2100	24000	NA	NA	NA	NA	NA
Manganese	ug/g	NV	NV	NA	1900	NA	160	200	320	240	89	730	NA	NA	NA	NA	NA
Molybdenum	ug/g	2	40	0.96	1.6	1.7	0.5	0.5	0.55	<0.50	<0.50	1.1	0.56	0.59	0.98	<0.50	0.6
Nickel	ug/g	82	270	44	29	18	7	7.2	30	9.1	7.1	69	6.2	7.1	78	8.2	61
Phosphorous	ug/g	NV	NV	NA	1000	NA	720	930	670	960	590	1100	NA	NA	NA	NA	NA
Potassium	ug/g	NV	NV	NA	2100	NA	1100	1300	4700	1500	460	15000	NA	NA	NA	NA	NA
Selenium	ug/g	1.5	5.5	<0.50	0.5	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5
Silver	ug/g	0.5	40	<0.20	0.3	<0.20	<0.2	**1.71** [1]	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2
Sodium	ug/g	NV	NV	NA	200	NA	230	290	2800	300	570	1800	NA	NA	NA	NA	NA
Strontium	ug/g	NV	NV	NA	50	NA	94	200	110	200	62	75	NA	NA	NA	NA	NA
Sulphur	ug/g	NV	NV	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	ug/g	1	3.3	0.41	0.24	0.057	0.06	0.12	0.18	0.084	<0.050	0.51	0.11	0.11	0.51	0.084	0.37
Uranium	ug/g	2.5	33	1.3	NA	1.3	NA	NA	NA	NA	NA	NA	0.75	0.71	1.1	0.73	0.87
Vanadium	ug/g	86	86	**94** [1,2]	54	12	20	27	46	19	14	**120** [1,2]	10	12	**130** [1,2]	24	**95** [1,2]
Zinc	ug/g	290	340	120	86	57	19	30	62	19	14	140	18	21	150	22	110
pH (pH Units)	pH	NV	NV	NA	NA	NA	7.87	10.4	NA	NA	7.8	8.1	NA	NA	NA	NA	NA

NOTES:

1	Table 1 , Full Depth Background Site Condition Standards, residential/parkland/institutional/industrial /commercial/ community property use, Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
2	Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Soil Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
m bgs	Metres below ground surface
NV	No criteria available for given parameter.
NA	Not analyzed.
BOLD	Concentration exceeds the indicated MOE standard.

Table E4 - Summary of Soil Analytical Results
Metals and Inorganics
CSST
Project No. 163401060

Parameter	Units	Ontario	Ontario	BH14-319 SS10 (Laurier and Queen Elizabeth)	BH14-401 SS3 (Kent and HWY 417)	BH14-401 SS5 (Kent and HWY 417)	BH14-402 SS3 (Kent and Chamberlain)	BH14-402 SS5 (Kent and Chamberlain)	BH14-502 SA2 (Supreme Court)	BH14-502 SA5 (Supreme Court)
Sample Date (yyyy-mm-dd)		Table 1 [1]	Table 3 [2]	2014-12-05	2014-10-07	2014-10-07	2014-10-08	2014-10-08	2014-09-27	2014-09-27
Approximate Sample Interval (m bgs)				9.14-9.75	1.22-1.83	2.29-2.90	1.22-1.83	2.44-3.05	0.76-1.37	3.05-3.51
Aluminum	ug/g	NV	NV	NA	4700	35000	5600	36000	NA	NA
Antimony	ug/g	1.3	40	<0.20	<0.20	<0.20	0.4	<0.20	1.2	<0.20
Arsenic	ug/g	18	18	<1	<1	1	3	1	<1.0	1.6
Barium	ug/g	220	670	95	48	**420** [1]	49	**420** [1]	61	56
Beryllium	ug/g	2.5	8	0.3	<0.2	0.6	0.2	0.7	0.26	0.23
Boron	ug/g	36	120	<5.0	NA	NA	NA	NA	<5.0	<5.0
Cadmium	ug/g	1.2	1.9	<0.10	<0.1	<0.1	0.1	<0.1	<0.10	<0.10
Calcium	ug/g	NV	NV	NA	51000	15000	19000	15000	NA	NA
Chromium	ug/g	70	160	16	17	**120** [1]	15	**120** [1]	12	14
Cobalt	ug/g	21	80	5.6	3.8	**26** [1]	7.0	**26** [1]	5	3.6
Copper	ug/g	92	230	14	8.2	57	27	57	11	8.8
Iron	ug/g	NV	NV	NA	9100	51000	14000	52000	NA	NA
Lead	ug/g	120	120	3	3	7	42	6	13	**130** [1,2]
Magnesium	ug/g	NV	NV	NA	3700	25000	6200	25000	NA	NA
Manganese	ug/g	NV	NV	NA	89	750	270	810	NA	NA
Molybdenum	ug/g	2	40	0.5	<0.5	1.2	0.9	1.1	<0.50	0.57
Nickel	ug/g	82	270	10	9.5	74	14	71	8.9	8
Phosphorous	ug/g	NV	NV	NA	610	1000	680	1000	NA	NA
Potassium	ug/g	NV	NV	NA	970	15000	660	16000	NA	NA
Selenium	ug/g	1.5	5.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Silver	ug/g	0.5	40	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20
Sodium	ug/g	NV	NV	NA	260	2600	140	2200	NA	NA
Strontium	ug/g	NV	NV	NA	92	73	39	72	NA	NA
Sulphur	ug/g	NV	NV	NA	NA	NA	NA	NA	250	260
Thallium	ug/g	1	3.3	0.13	0.08	0.54	0.14	0.54	0.11	0.073
Uranium	ug/g	2.5	33	0.99	NA	NA	NA	NA	0.53	0.42
Vanadium	ug/g	86	86	28	16	**120** [1,2]	19	**120** [1,2]	21	30
Zinc	ug/g	290	340	25	22	140	66	150	23	32
pH (pH Units)	pH	NV	NV	NA	NA	NA	NA	NA	NA	NA

NOTES:

1	Table 1 , Full Depth Background Site Condition Standards, residential/parkland/institutional/industrial /commercial/ community property use, Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
2	Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Soil Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
m bgs	Metres below ground surface
NV	No criteria available for given parameter.
NA	Not analyzed.
BOLD	Concentration exceeds the indicated MOE standard.

Table E5 - Summary of Groundwater Analytical Results
Petroleum Hydrocarbons F1-F4
CSST
Project No. 163401060

Parameter	Units	City of Ottawa Sewer Use By-Law Table 1[1]	City of Ottawa Sewer Use By-Law Table 2[2]	Ontario	13-104C (Laurier and Nicholas)	13-105B (Cumberland and Murray)		13-106C (Cumberland and St. Andrew)	13-107A (Stanley Park	13-108A (Stanley Park)	13-110A Stanley Park)	13-110C Stanley Park)	13-111B (Kent and Gloucester)	13-201B (Kent and Slater)	13-203B (Slater and Metcalfe)	13-205B (Confederation Park)	2014 - D Duplicate of 13-205B	13-207B (Colonel By and Laurier)	2013 - A Duplicate of 13-207B	13-218C (Cumberland and St. Patrick)	14-221S (Bolton and King Edward)	14-223A (Bordeleau Park)		14-224 (Bordeleau Park)
Well Depth				Table 3[3]	Shallow	Medium	Medium	Shallow	Shallow	Shallow	Deep	Shallow	Medium	Medium	Medium	Shallow	Shallow	Medium	Medium	Shallow	Shallow	Shallow	Shallow	Shallow
ate (yyyy/mm/dd)					2014/01/10	2014/05/16	2015/04/23	2014/01/16	2014/01/17	2013/12/18	2015/04/22	2013/12/18	2013/12/18	2014/05/21	2014/05/22	2014/01/10	2014/01/10	2013/12/18	2013/12/18	2014/01/17	2014/05/16	2014/05/16	2014/12/05	2015/04/21
F1 PHCs (C6 - C10)	µg/L	nv	nv	750	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 PHCs (>C10 - C16)	µg/L	nv	nv	150	<100	**150**	**530** [4]	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 PHCs (>C16 - C34)	µg/L	nv	nv	500	<100	<200	**420**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<200	<100	<100
F4 PHCs (>C34 - C50)	µg/L	nv	nv	500	<100	<200	**700** [4]	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<200	<200	<100	<100

NOTES:

1 Table 1. Limits for Sanitary and Combined Sewers Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

2 Table 2. Limits for Storm Sewer Discharge as per the City of Ottawa Sewer use By-law No.2003 - 514

3 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Groundwater Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

nv No criteria value is available for parameter

BOLD Concentration exceeds the indicated standard/criteria.

BOLD Measurable concentration of fuel exceeds the sewer use criteria of no fuels to be discharged.

Table E5 - Summary of Groundwater Analytical Results
Petroleum Hydrocarbons F1-F4
CSST
Project No. 163401060

Parameter	Units	City of Ottawa Sewer Use By-Law Table 1[1]	City of Ottawa Sewer Use By-Law Table 2[2]	Ontario	13-227S (Stanley Park)		14-228C (Queen Victoria and Riverlane)	14-228A (Queen Victoria and Riverlane)	13-229 (Kent and Wellington)	13-231C (Kent and Florence)	2014 - C Duplicate of 13-231C	13-234C (Kent and Catherine)	14-316 (Cumberland and George)	14-319 (Laurier and Queen Elizabeth	14-401 (Kent and HWY 417)	14-402A (Kent and Chamberlaine)	14-502 (Supreme Court)
Well Depth				Table 3[3]	Shallow	Shallow	Shallow	Deep	Deep	Shallow	Shallow	Shallow	Shallow	Medium	Medium	Shallow	Medium
ate (yyyy/mm/dd)					2014/05/16	2015/04/21	2014/05/16	2014/12/05	2014/01/31	2014/01/08	2014/01/08	2014/01/08	2015/04/29	2015/04/22	2015/04/21	2015/04/21	2014/11/11
F1 PHCs (C6 - C10)	µg/L	nv	nv	750	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 PHCs (>C10 - C16)	µg/L	nv	nv	150	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 PHCs (>C16 - C34)	µg/L	nv	nv	500	<200	<100	<200	<100	<100	<100	<100	<100	<100	<100	**400**	<100	<200
F4 PHCs (>C34 - C50)	µg/L	nv	nv	500	<200	<100	<200	<100	<100	<100	<100	<100	<100	<100	**610**	<100	<200

NOTES:

1 Table 1. Limits for Sanitary and Combined Sewers Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

2 Table 2. Limits for Storm Sewer Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

3 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Groundwater Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

nv No criteria value is available for parameter

BOLD Concentration exceeds the indicated standard/criteria.

BOLD Measurable concentration of fuel exceeds the sewer use criteria of no fuels to be dischc

Table E6 - Summary of Groundwater Analytical Results
Volatile Organic Compounds (VOCs)
CSST
Project No. 163401060

Parameter	Units	City of Ottawa Sewer Use By Law Table 1[1]	City of Ottawa Sewer Use By Law Table 2[2]	Ontario	13-104C (Laurier and Nicholas)	13-105B (Cumberland and Murray)		13-106C (Cumberland and St. Andrew)	13-107A (Stanley Park)	13-108A (Stanley Park)	13-110A (Stanley Park)	13-110C (Stanley Park)	13-111B (Kent and Gloucester)	13-201B (Kent and Slater)	13-203A (Slater and Metcalfe)	13-203B (Slater and Metcalfe)	13-205B (Confederation Park)
Well Depth				Table 3[3]	Shallow	Medium	Medium	Shallow	Shallow	Shallow	Deep	Shallow	Medium	Medium	Deep	Medium	Shallow
Sample Date (yyyy/mm/dd)					2014/01/10	2014/05/16	2015/04/23	2014/01/16	2014/01/17	2013/12/18	2015/04/22	2013/12/18	2013/12/18	2014/05/21	2015/04/23	2014/05/22	2014/01/10
Dichlorodifluoromethane (FREON 12)	µg/L	NV	NV	4400	<0.50	<0.50	<0.50	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Hexane	µg/L	NV	NV	51	<0.50	<0.50	<0.50	<1	<0.50	<0.50	<0.50	5.4	<0.50	<0.50	<0.50	<0.50	<0.50
Acetone	µg/L	NV	NV	130,000	<10	<10	NM	<20	<10	<10	NM	<10	<10	<10	NM	<10	<10
Benzene	µg/L	10	NV	44	<0.10	0.11	<0.50	<0.2	<0.10	0.64	3.2	0.26	<0.10	<0.10	<0.10	<0.10	<0.10
Bromodichloromethane	µg/L	350	NV	85,000	<0.10	<0.1	<0.50	<0.2	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bromoform	µg/L	630	NV	380	<0.20	<0.2	0.52	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromomethane	µg/L	110	NV	5.6	<0.50	<0.5	<0.10	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	57	NV	0.79	<0.10	<0.1	<0.20	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	57	NV	630	<0.10	<0.1	<0.50	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloroform	µg/L	80	NV	2.4	<0.10	<0.1	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	0.89	<0.10	<0.10	1
Dibromochloromethane	µg/L	57	NV	82,000	<0.20	<0.2	<0.10	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	NV	NV	4,600	<0.20	<0.2	<0.10	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,3-Dichlorobenzene	µg/L	36	NV	9,600	<0.20	<0.2	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	NV	NV	8	<0.20	<0.2	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	NV	NV	320	<0.10	<0.1	<0.20	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichloroethane	µg/L	NV	NV	1.6	<0.20	<0.2	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethylene	µg/L	NV	NV	1.6	<0.10	<0.1	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cis-1,2-Dichloroethylene	µg/L	NV	NV	1.6	<0.10	<0.1	<0.20	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Trans-1,2-Dichloroethylene	µg/L	NV	NV	1.6	<0.10	<0.1	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichloropropane	µg/L	NV	NV	16	<0.10	<0.1	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cis-1,3-Dichloropropylene	µg/L	NV	NV	NV	<0.20	<0.2	<0.10	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trans-1,3-Dichloropropylene	µg/L	NV	NV	NV	<0.20	<0.2	<0.10	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	NV	NV	2,300	<0.10	<0.1	<0.20	<0.2	<0.10	<0.10	<0.10	0.19	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	NV	NV	0.25	<0.20	<0.2	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methylene Chloride	µg/L	NV	NV	610	<0.50	<0.5	<0.10	<1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	µg/L	NV	NV	140,000	<5.0	<5	<0.20	<10	<5.0	<5.0	NM	<5.0	<5.0	<5.0	NM	<5.0	<5.0
Methyl Ethyl Ketone	µg/L	NV	NV	470,000	<5.0	<5	<0.50	<10	<5.0	<5.0	NM	16	<5.0	<5.0	NM	<5.0	<5.0
Methyl-t-Butyl Ether	µg/L	NV	NV	190	<0.20	<0.2	NM	<0.4	<0.20	<0.20	NM	<0.20	<0.20	<0.20	NM	<0.20	<0.20
Styrene	µg/L	NV	NV	1,300	<0.20	<0.2	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	NV	NV	3.3	<0.20	<0.2	NM	<0.4	<0.20	<0.20	NM	<0.20	<0.20	<0.20	NM	<0.20	<0.20
1,1,2,2-Tetrachloroethane	µg/L	NV	NV	3.2	<0.20	<0.2	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Tetrachloroethylene	µg/L	NV	NV	1.6	<0.10	<0.1	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	NV	NV	18,000	<0.20	<0.2	<0.20	<0.4	<0.20	<0.20	<0.20	0.52	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	NV	NV	640	<0.10	<0.1	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2-Trichloroethane	µg/L	NV	NV	4.7	<0.20	<0.2	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	NV	NV	1.6	<0.10	<0.1	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Vinyl Chloride	µg/L	NV	NV	0.5	<0.20	<0.2	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m-Xylene & p-Xylene	µg/L	NV	NV	NV	<0.10	<0.1	<0.10	<0.2	<0.10	<0.10	0.13	2.4	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	NV	NV	NV	0.12	0.17	<0.10	<0.2	<0.10	<0.10	<0.10	0.56	<0.10	<0.10	<0.10	<0.10	<0.10
Total Xylenes	µg/L	NV	NV	4,200	<0.10	0.17	<0.10	<0.2	<0.10	<0.10	0.13	3	<0.10	<0.10	<0.10	<0.10	<0.10
Chloroethane	µg/L	27	NV	NV	<0.20	NM	<0.20	NM	NM	<0.20	<0.20	<0.20	<0.20	NM	<0.20	NM	<0.20
Chloromethane	µg/L	190	NV	NV	<0.50	NM	<0.50	NM	NM	<0.50	<0.50	<0.50	<0.50	NM	<0.50	NM	<0.50
Trichlorofluoromethane (FREON 11)	µg/L	NV	NV	2,500	<0.20	<0.20	<0.20	<0.4	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,3-Dicholoropropene (cis+trans)	µg/L	NV	NV	5.2	NM	NM	<0.28	NM	NM	NM	<0.28	NM	NM	NM	<0.28	NM	NM

NOTES:

1 Table 1. Limits for Sanitary and Combined Sewers Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514. (µg/L)

2 Table 2. Limits for Storm Sewer Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 51

3 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Groundwater Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

NV No criteria value is available for parameter

NM Not measured

Table E6 - Summary of Groundwater Analytical Results
Volatile Organic Compounds (VOCs)
CSST
Project No. 163401060

Parameter	Units	City of Ottawa Sewer Use By Law Table 1[1]	City of Ottawa Sewer Use By Law Table 2[2]	Ontario	2014 - D	13-207B (Colonel By and Laurier)	2013 - A	13-218C (Cumberland and St. Patrick)	14-221S (Bolton and King Edward)	14-223A (Bordeleau Park)	14-223 (Bordeleau Park)	14-224 (Bordeleau Park)	13-227S (Stanley Park)		14-228S (Queen Victoria and Riverlane)	MW14-A	14-228 (Queen Victoria and Riverlane)	13-229 (Kent and Wellington)	13-231C (Kent and Florence)	2014 - C
					Duplicate of 13-205B		Duplicate of 13-207B									Duplicate of 14-228S				Duplicate of 13-231C
Well Depth				Table 3[3]	Shallow	Medium	Medium	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Deep	Deep	Shallow	Shallow
Sample Date (yyyy/mm/dd)					2014/01/10	2013/12/18	2013/12/18	2014/01/17	2014/05/16	2014/05/16	2014/12/05	2015/04/21	2014/05/16	2015/04/21	2014/05/16	2014/05/16	2014/12/05	2014/01/31	2014/01/08	2014/01/08
Dichlorodifluoromethane (FREON 12)	µg/L	NV	NV	4400	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1	<0.50	**<0.50**	<0.50	<0.50	<0.50
Hexane	µg/L	NV	NV	51	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1	<0.50	**<0.50**	<0.50	<0.50	<0.50
Acetone	µg/L	NV	NV	130,000	<10	<10	<10	<10	<10	11	<10	NM	13	NM	20	21	**<10**	14	<10	<10
Benzene	µg/L	10	NV	44	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	**<0.10**	<0.10	<0.10	<0.10
Bromodichloromethane	µg/L	350	NV	85,000	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	**<0.10**	<0.10	<0.10	<0.10
Bromoform	µg/L	630	NV	380	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	<0.20	**<0.20**	<0.20	<0.20	<0.20
Bromomethane	µg/L	110	NV	5.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1	<0.50	**<0.50**	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	57	NV	0.79	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	**<0.10**	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	57	NV	630	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	**<0.10**	<0.10	<0.10	<0.10
Chloroform	µg/L	80	NV	2.4	1	0.2	0.2	<0.10	4.3	<0.10	<0.10	<0.10	<0.10	<0.10	0.71	0.78	0.56	<0.10	<0.10	<0.10
Dibromochloromethane	µg/L	57	NV	82,000	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	NV	NV	4,600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20
1,3-Dichlorobenzene	µg/L	36	NV	9,600	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	NV	NV	8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	NV	NV	320	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichloroethane	µg/L	NV	NV	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethylene	µg/L	NV	NV	1.6	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.4	<0.10	<0.10	<0.10	<0.10	<0.10
Cis-1,2-Dichloroethylene	µg/L	NV	NV	1.6	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10
Trans-1,2-Dichloroethylene	µg/L	NV	NV	1.6	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichloropropane	µg/L	NV	NV	16	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10
Cis-1,3-Dichloropropylene	µg/L	NV	NV	NV	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Trans-1,3-Dichloropropylene	µg/L	NV	NV	NV	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	NV	NV	2,300	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.4	<0.10	0.23	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	NV	NV	0.25	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Methylene Chloride	µg/L	NV	NV	610	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.4	<0.50	<0.50	1.1	<0.50	<0.50
Methyl Isobutyl Ketone	µg/L	NV	NV	140,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NM	<5.0	NM	<1	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl Ethyl Ketone	µg/L	NV	NV	470,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NM	<5.0	NM	<10	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl-t-Butyl Ether	µg/L	NV	NV	190	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NM	<0.20	NM	<10	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene	µg/L	NV	NV	1,300	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	NV	NV	3.3	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NM	<0.20	NM	<0.4	<0.20	<0.10	<0.20	<0.20	<0.20
1,1,2,2-Tetrachloroethane	µg/L	NV	NV	3.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	<0.20	<0.20	<0.20	<0.20	<0.20
Tetrachloroethylene	µg/L	NV	NV	1.6	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	NV	NV	18,000	<0.20	1.8	2	<0.20	0.28	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	0.22	0.33	0.28	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	NV	NV	640	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.1	<0.1	<0.10	<0.10	<0.10
1,1,2-Trichloroethane	µg/L	NV	NV	4.7	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	<0.2	<0.2	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	NV	NV	1.6	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.1	<0.1	<0.10	<0.10	<0.10
Vinyl Chloride	µg/L	NV	NV	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.4	<0.2	<0.2	<0.20	<0.20	<0.20
m-Xylene & p-Xylene	µg/L	NV	NV	NV	<0.10	<0.10	<0.10	<0.10	0.53	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	0.15	1.4	0.48	<0.10	<0.10
o-Xylene	µg/L	NV	NV	NV	<0.10	<0.10	<0.10	<0.10	0.21	<0.10	<0.10	<0.10	<0.10	<0.10	1.4	1.5	0.65	0.19	<0.10	<0.10
Total Xylenes	µg/L	NV	NV	4,200	<0.10	<0.10	<0.10	<0.10	0.74	<0.10	<0.10	<0.10	<0.10	<0.10	1.4	1.7	2.1	0.67	<0.10	<0.10
Chloroethane	µg/L	27	NV	NV	<0.20	<0.20	<0.20	NM	NM	NM	NM	<0.20	NM	<0.20	NM	NM	NM	NM	<0.20	<0.20
Chloromethane	µg/L	190	NV	NV	<0.50	<0.50	<0.50	NM	NM	NM	NM	<0.50	NM	<0.50	NM	NM	NM	NM	<0.50	<0.50
Trichlorofluoromethane (FREON 11)	µg/L	NV	NV	2,500	<0.20	<0.20	<0.20	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.40	<0.20	<0.20	<0.10	<0.20	<0.20
1,3-Dicholoropropene (cis+trans)	µg/L	NV	NV	5.2	NM	NM	NM	NM	NM	NM	<0.28	<0.28	NM	<0.28	NM	NM	NM	NM	<0.28	<0.28

NOTES:

1 Table 1. Limits for Sanitary and Combined Sewers Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514. (µg/L)

2 Table 2. Limits for Storm Sewer Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 51

3 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Groundwater Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

NV No criteria value is available for parameter

NM Not measured

Table E6 - Summary of Groundwater Analytical Results
Volatile Organic Compounds (VOCs)
CSST
Project No. 163401060

Parameter	Units	City of Ottawa Sewer Use By Law Table 1[1]	City of Ottawa Sewer Use By Law Table 2[2]	Ontario	13-234C (Kent and Catherine)	14-314 (Kent and Albert)	14-316 (Cumberland and George)	14-319 (Laurier and Queen Elizabeth)	14-322 (Slater and Bank)	14-401 (Kent and HWY 417)	14-402A (Kent and Chamberlaine)	14-502 (Supreme Court)
Well Depth				Table 3[3]	Shallow	Medium	Shallow	Medium	Deep	Medium	Shallow	Medium
Sample Date (yyyy/mm/dd)					2014/01/08	2015/04/23	2015/04/29	2015/04/23	2015/04/23	2015/04/21	2015/04/21	2014/11/11
Dichlorodifluoromethane (FREON 12)	µg/L	NV	NV	4400	<1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Hexane	µg/L	NV	NV	51	<1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acetone	µg/L	NV	NV	130,000	<25	NM	<10	NM	NM	NM	NM	<10
Benzene	µg/L	10	NV	44	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	0.13	<0.10
Bromodichloromethane	µg/L	350	NV	85,000	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bromoform	µg/L	630	NV	380	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromomethane	µg/L	110	NV	5.6	<1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	57	NV	0.79	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	57	NV	630	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloroform	µg/L	80	NV	2.4	<0.25	0.56	0.26	<0.10	0.25	<0.10	<0.10	1.0
Dibromochloromethane	µg/L	57	NV	82,000	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	NV	NV	4,600	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,3-Dichlorobenzene	µg/L	36	NV	9,600	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	NV	NV	8	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	NV	NV	320	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichloroethane	µg/L	NV	NV	1.6	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethylene	µg/L	NV	NV	1.6	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cis-1,2-Dichloroethylene	µg/L	NV	NV	1.6	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Trans-1,2-Dichloroethylene	µg/L	NV	NV	1.6	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichloropropane	µg/L	NV	NV	16	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cis-1,3-Dichloropropylene	µg/L	NV	NV	NV	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trans-1,3-Dichloropropylene	µg/L	NV	NV	NV	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	NV	NV	2,300	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	NV	NV	0.25	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methylene Chloride	µg/L	NV	NV	610	<1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	µg/L	NV	NV	140,000	<13	NM	<5.0	NM	NM	NM	NM	<5.0
Methyl Ethyl Ketone	µg/L	NV	NV	470,000	<13	NM	<5.0	NM	NM	NM	NM	<5.0
Methyl-t-Butyl Ether	µg/L	NV	NV	190	<0.50	NM	<0.20	NM	NM	NM	NM	<0.20
Styrene	µg/L	NV	NV	1,300	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	NV	NV	3.3	<0.50	NM	<0.20	NM	NM	NM	NM	<0.20
1,1,2,2-Tetrachloroethane	µg/L	NV	NV	3.2	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Tetrachloroethylene	µg/L	NV	NV	1.6	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	NV	NV	18,000	0.53	<0.20	<0.20	<0.20	<0.20	<0.20	0.24	<0.20
1,1,1-Trichloroethane	µg/L	NV	NV	640	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2-Trichloroethane	µg/L	NV	NV	4.7	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	NV	NV	1.6	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Vinyl Chloride	µg/L	NV	NV	0.5	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m-Xylene & p-Xylene	µg/L	NV	NV	NV	0.67	<0.10	<0.10	<0.10	<0.10	0.15	<0.10	<0.10
o-Xylene	µg/L	NV	NV	NV	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total Xylenes	µg/L	NV	NV	4,200	0.67	<0.10	<0.10	<0.10	<0.10	0.15	<0.10	<0.10
Chloroethane	µg/L	27	NV	NV	<0.50	<0.20	NM	<0.20	<0.20	<0.20	<0.20	NM
Chloromethane	µg/L	190	NV	NV	<1.3	<0.50	NM	<0.50	<0.50	<0.50	<0.50	NM
Trichlorofluoromethane (FREON 11)	µg/L	NV	NV	2,500	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,3-Dicholoropropene (cis+trans)	µg/L	NV	NV	5.2	<0.71	<0.28	NM	<0.28	<0.28	<0.28	<0.28	<0.28

NOTES:

1 Table 1. Limits for Sanitary and Combined Sewers Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514. (µg/L)

2 Table 2. Limits for Storm Sewer Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 51

3 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Groundwater Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

NV No criteria value is available for parameter

NM Not measured

Table E7 - Summary of Groundwater Analytical Results
Semi-Volatile Compounds - Polyaromatic Hydrocarbons (PAHs)
CSST
Project No. 163401060

Parameter	Units	City of Ottawa Sewer Use By Law Table 1 [1]	City of Ottawa Sewer Use By Law Table 2 [2]	Ontario	13-104C (Laurier and Nicholas)	13-105B (Cumberland and Murray)		13-106C (Cumberland and St. Andrew)	13-107A (Stanley Park)	13-108A (Stanley Park)	13-110A (Stanley Park)	13-110C (Stanley Park)	13-111B (Kent and Gloucester)	13-201B (Kent and Slater)	13-203B (Slater and Metcalfe)	13-205B (Confederation Park)	2014 - D Duplicate of 13-205B	13-207B (Colonel By and Laurier)	2013 - A Duplicate of 13-207B	13-218C (Cumberland and St. Patrick)	14-221S (Bolton and King Edward)
Well Depth				Table 3 [3]	Shallow	Medium	Medium	Shallow	Shallow	Shallow	Deep	Shallow	Medium	Medium	Medium	Shallow	Shallow	Medium	Medium	Shallow	Shallow
Sample Date (yyyy/mm/dd)					2014/01/10	2014/05/16	2015/04/23	2014/01/16	2014/01/17	2013/12/18	2015/04/22	2013/12/18	2013/12/18	2014/05/21	2014/05/22	2014/01/10	2014/01/10	2013/12/18	2013/12/18	2014/01/17	2014/05/16
Acenaphthene	ug/L	NV	NV	600	<0.010	0.12	0.17	<0.010	<0.010	0.017	<0.050	0.076	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.051
Acenaphthylene	ug/L	NV	NV	1.8	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.050	0.024	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.12
Anthracene	ug/L	NV	NV	2.4	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.050	0.12	<0.010	<0.050	0.055	<0.010	<0.010	0.01	0.01	<0.010	0.16
Benzo(a)anthracene	ug/L	NV	NV	44	<0.010	<0.050	<0.050	<0.010	<0.010	0.01	0.055	0.14	<0.010	<0.050	0.11	<0.010	<0.010	0.014	0.013	<0.010	0.58
Benzo(a)pyrene	ug/L	NV	NV	0.81	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.04	0.095	<0.010	0.045	0.1	<0.010	<0.010	0.013	0.012	<0.010	0.54
Benzo(b/j)fluoranthene	ug/L	NV	NV	0.75	<0.010	<0.050	<0.050	<0.010	<0.010	0.01	0.06	0.12	<0.010	0.065	0.12	<0.010	<0.010	0.02	0.019	<0.010	0.74
Benzo(g,h,i)perylene	ug/L	NV	NV	0.2	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.050	0.047	<0.010	<0.050	0.055	<0.010	<0.010	0.01	<0.010	<0.010	**0.28** [3]
Benzo(k)fluoranthene	ug/L	NV	NV	0.4	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.050	0.047	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.29
Chrysene	ug/L	NV	NV	1	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	0.05	0.13	<0.010	<0.050	0.09	<0.010	<0.010	0.018	0.014	<0.010	0.55
Dibenz(a,h)anthracene	ug/L	NV	NV	0.52	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.050	0.011	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.066
Fluoranthene	ug/L	NV	NV	130	<0.010	<0.050	<0.050	<0.010	<0.010	0.034	0.15	0.37	<0.010	0.085	0.21	<0.010	<0.010	0.037	0.038	<0.010	1.4
Fluorene	ug/L	NV	NV	400	<0.010	0.25	0.33	0.019	<0.010	0.014	<0.050	0.083	<0.010	<0.050	0.16	<0.010	<0.010	<0.010	<0.010	<0.010	0.11
Indeno(1,2,3-cd)pyrene	ug/L	NV	NV	0.2	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.050	0.049	<0.010	<0.050	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	**0.3** [3]
1-Methylnaphthalene	ug/L	NV	NV	1,800**	<0.010	1.8	0.38	0.079	<0.010	0.026	<0.050	0.047	<0.010	<0.050	0.15	<0.010	<0.010	0.017	0.016	<0.010	0.06
2-Methylnaphthalene	ug/L	NV	NV		<0.010	1.0	<0.20	0.12	<0.010	0.019	<0.050	0.058	<0.010	<0.050	0.23	<0.010	<0.010	0.019	0.018	<0.010	0.061
Naphthalene	ug/L	NV	NV	1,400	<0.010	0.67	<0.30	0.033	<0.010	0.041	<0.050	0.28	<0.010	<0.050	0.095	0.011	0.011	0.011	0.01	<0.010	0.06
Phenanthrene	ug/L	NV	NV	580	<0.010	0.030	0.21	0.026	<0.010	0.042	0.1	0.48	<0.010	0.04	0.45	<0.010	<0.010	0.05	0.051	<0.010	0.93
Pyrene	ug/L	NV	NV	68	<0.010	<0.050	<0.050	0.011	<0.010	0.031	0.13	0.28	<0.010	0.12	0.2	<0.010	<0.010	0.033	0.034	<0.010	1.1
Total PAHs*	ug/L	150	6	NV	0.085*	4.15 *	1.59 *	0.343*	0.085*	0.264*	0.88*	2.457*	0.085*	1.005*	2.175	0.091*	0.091*	0.277*	0.265*	0.085*	6.818 [2*]

NOTES:

1 Table 1. Limits for Sanitary and Combined Sewers Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

2 Table 2. Limits for Storm Sewer Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

3 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Groundwater Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

nv No criteria value is available for parameter

NM Not measured

* Calculated total PAH values are based on the sum of all the analytical values reported per sample location. Total PAH values determined from values that are below the laboratory detection limit were calculated by sumation of half of the laboratory detection limit.

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

BOLD Concentration exceeds the indicated standard/criteria.

Table E7 - Summary of Groundwater Analytical Results
Semi-Volatile Compounds - Polyaromatic Hydrocarbons (PAHs)
CSST
Project No. 163401060

Parameter	Units	City of Ottawa Sewer Use By Law Table 1[1]	City of Ottawa Sewer Use By Law Table 2[2]	Ontario	14-223A (Bordeleau Park)		14-224 (Bordeleau Park)	13-227S (Stanley Park)		14-228S (Queen Victoria and Riverlane)	MW14-A Duplicate of 14-228S	14-228 (Queen Victoria and Riverlane)	13-229 (Kent and Wellington)	13-231C (Kent and Florence)	2014 - C Duplicate of 13-231C	13-234C (Kent and Catherine)	14-316 (Cumberland and George)	14-319 (Laurier and Queen Elizabeth)	14-401 (Kent and HWY 417)	14-402A (Kent and Chamberlain)	14-502 (Supreme Court)
Well Depth				Table 3[3]	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Deep	Deep	Shallow	Shallow	Shallow	Shallow	Medium	Medium	Shallow	Medium
Sample Date (yyyy/mm/dd)					2014/05/16	2014/12/05	2015/04/21	2014/05/16	2015/04/21	2014/05/16	2014/05/16	2014/12/05	2014/01/31	2014/01/08	2014/01/08	2014/01/08	2015/04/29	2015/04/23	2015/04/21	2015/04/21	2014/11/11
Acenaphthene	ug/L	NV	NV	600	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	<0.010	<0.010	<0.010	<0.10	<0.050	<0.050	0.095	<0.050
Acenaphthylene	ug/L	NV	NV	1.8	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	<0.010	<0.010	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/L	NV	NV	2.4	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	0.013	0.015	0.021	<0.10	<0.050	0.05	0.17	<0.050
Benzo(a)anthracene	ug/L	NV	NV	44	<0.05	<0.05	<0.050	<0.05	<0.050	0.054	<0.050	<0.05	<0.010	0.023	0.023	<0.010	<0.10	<0.050	0.13	0.45	<0.050
Benzo(a)pyrene	ug/L	NV	NV	0.81	<0.01	<0.01	0.045	0.038	<0.010	0.029	0.021	<0.01	<0.010	0.021	0.021	<0.010	<0.020	<0.010	0.11	0.39	<0.010
Benzo(b/j)fluoranthene	ug/L	NV	NV	0.75	<0.05	<0.05	0.06	0.06	<0.050	<0.050	<0.050	<0.05	<0.010	0.026	0.027	<0.010	<0.10	<0.050	0.15	0.52	<0.050
Benzo(g,h,i)perylene	ug/L	NV	NV	0.2	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	0.011	0.011	<0.010	<0.10	<0.050	0.07	0.19	<0.050
Benzo(k)fluoranthene	ug/L	NV	NV	0.4	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	0.01	0.01	<0.010	<0.10	<0.050	0.05	0.19	<0.050
Chrysene	ug/L	NV	NV	1	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	0.022	0.021	<0.010	<0.10	<0.050	0.11	0.41	<0.050
Dibenz(a,h)anthracene	ug/L	NV	NV	0.52	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	<0.010	<0.010	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/L	NV	NV	130	<0.05	<0.05	0.095	0.14	<0.050	0.23	0.11	<0.05	0.015	0.056	0.058	<0.010	<0.10	<0.050	0.26	1.2	<0.050
Fluorene	ug/L	NV	NV	400	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	<0.020	0.01	0.011	<0.10	<0.050	0.085	0.085	<0.050
Indeno(1,2,3-cd)pyrene	ug/L	NV	NV	0.2	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	0.011	0.011	<0.010	<0.10	<0.050	0.06	0.2	<0.050
1-Methylnaphthalene	ug/L	NV	NV	1,800**	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	<0.010	<0.010	0.019	<0.10	<0.050	0.065	<0.050	<0.050
2-Methylnaphthalene	ug/L	NV	NV		<0.05	0.055	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	<0.010	<0.010	0.029	<0.10	<0.050	0.12	<0.050	<0.050
Naphthalene	ug/L	NV	NV	1,400	<0.05	0.050	<0.050	<0.05	<0.050	<0.050	<0.050	<0.05	<0.010	<0.010	<0.010	0.03	<0.10	<0.050	0.09	<0.050	<0.050
Phenanthrene	ug/L	NV	NV	580	<0.03	0.055	0.045	0.11	<0.030	0.12	0.046	<0.03	0.017	0.071	0.067	0.02	<0.060	0.14	0.27	0.81	<0.030
Pyrene	ug/L	NV	NV	68	<0.05	<0.05	0.09	0.12	<0.050	0.19	0.094	<0.05	0.023	0.052	0.051	<0.010	<0.10	<0.050	0.22	0.95	<0.050
Total PAHs*	ug/L	150	6	NV	0.420*	0.49 *	0.66 *	0.79 *	0.42 *	0.95 *	0.62 *	0.420*	0.125*	0.356*	0.355*	0.19*	0.84*	0.54*	1.92*	5.78*	0.42 *

NOTES:

1 Table 1. Limits for Sanitary and Combined Sewers Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

2 Table 2. Limits for Storm Sewer Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

3 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Groundwater Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

nv No criteria value is available for parameter

NM Not measured

* Calculated total PAH values are based on the sum of all the analytical values reported per sample location. Total PAH values determined from values that are below the laboratory detection limit were calculated by sumation of half of the laboratory detection limit.

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

BOLD Concentration exceeds the indicated standard/criteria.

Table E8 - Summary of Groundwater Analytical Results
Dissolved Metals
CSST
Project No. 163401060

Parameter	Units	City of Ottawa Sewer Use By Law Table 1 [1]	City of Ottawa Sewer Use By Law Table 2 [2]	Ontario	13-104C (Laurier and Nicholas)	13-105B (Cumberland and Murray)		13-106C (Cumberland and St. Andrew)	13-107A (Stanley Park)	13-108A (Stanley Park)	13-110A (Stanley Park)	13-110C (Stanley Park)	13-111B (Kent and Gloucester)	13-201A (Kent and Slater)	MW14-B Duplicate of 13-201A	13-201B (Kent and Slater)	13-203B (Slater and Metcalfe)	13-205B (Confederation Park)	2014 - D Duplicate of 13-205B	13-207B (Colonel By and Laurier)	2013 - A Duplicate of 13-207B	13-218C (Cumberland and St. Patrick)
Well Depth				Table 3 [3]	Shallow	Medium	Medium	Shallow	Shallow	Shallow	Deep	Shallow	Medium	Deep	Deep	Medium	Medium	Shallow	Shallow	Medium	Medium	Shallow
Sample Date (yyyy/mm/dd)					2014/01/10	2014/05/16	2015/04/23	2014/01/16	2014/01/17	2013/12/18	2015/04/22	2013/12/19	2013/12/18	2014/05/21	2014/05/21	2014/05/21	2014/05/22	2014/01/10	2014/01/10	2013/12/18	2013/12/18	2014/01/17
Aluminum	mg/L	50	NV	NV	0.005	<0.050	<0.050	1	0.0063	0.077	<0.050	0.0053	<0.0030	0.047	0.036	<0.025	10	<0.0030	<0.0030	0.027	0.018	0.0048
Antimony	mg/L	5	NV	20	<0.00060	<0.0050	<0.0050	<0.0030	<0.00060	<0.00060	0.00081	<0.00060	<0.00060	0.0052	0.0049	<0.0025	<0.00050	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
Arsenic	mg/L	1	0.02	1.9	0.00085	<0.010	<0.010	0.0011	0.0004	0.0021	0.0046	0.0018	<0.00020	<0.0010	<0.0010	<0.010	0.0052	<0.00020	<0.00020	0.0012	0.0013	0.000031
Barium	mg/L	NV	NV	29	0.14	0.19	0.250	0.095	0.071	0.11	0.026	0.2	0.065	0.0092	0.019	0.12	0.45	1.2	1.2	0.35	0.35	0.22
Beryllium	mg/L	NV	NV	0.067	<0.0010	<0.0050	<0.0050	<0.0050	<0.0010	<0.0010	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0025	0.0052	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth	mg/L	NV	NV	NV	NA	<0.010	<0.010	NA	NA	NA	<0.010	NA	NA	0.0011	<0.0010	<0.0050	<0.0010	NA	NA	NA	NA	NA
Boron	mg/L	NV	NV	45	0.051	0.14	0.250	0.17	0.03	0.13	0.53	0.35	0.037	0.046	0.044	0.07	0.57	0.074	0.076	0.12	0.12	0.11
Cadmium	mg/L	NV	NV	0.0027	NA	<0.0010	<0.0010	NA	NA	NA	<0.0010	NA	NA	<0.00010	<0.00010	<0.00050	0.00065	NA	NA	NA	NA	NA
Calcium	mg/L	NV	NV	NV	220	530	510	470	100	110	29	230	120	48	43	180	170	130	130	130	130	200
Chromium	mg/L	5	NV	0.81	<0.0010	<0.050	<0.050	<0.0050	<0.0010	0.0018	<0.0050	<0.0010	<0.0010	0.085	0.092	<0.025	0.016	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L	5	NV	0.066	0.0012	0.0069	<0.005.0	0.0035	0.0015	0.0011	<0.00050	0.0011	<0.00030	0.0014	0.0012	<0.0025	0.011	0.0012	0.00081	0.0037	0.0039	0.0014
Copper	mg/L	3	0.04	0.087	<0.00020	<0.010	<0.010	0.0061	0.0036	0.0008	<0.0020	<0.00020	<0.00020	0.0076	0.0078	<0.0050	0.032	0.00047	0.0004	<0.00020	<0.00020	0.0024
Iron	mg/L	NV	NV	NV	1.4	2.8	1.7	2.8	<0.060	2.5	<0.100	21	0.78	<0.100	<0.100	<0.500	17	1.1	1.1	0.49	0.5	<0.060
Lead	mg/L	5	0.12	0.025	<0.00020	<0.0050	<0.0050	0.0026	<0.00020	0.0044	<0.00050	<0.00020	<0.00020	<0.00050	<0.00050	<0.0025	0.043	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Lithium	mg/L	NV	NV	NV	<0.00020	<0.050	<0.050	0.034	<0.020	<0.020	0.14	<0.0202	<0.020	0.0071	0.0063	<0.025	0.100	<0.020	<0.020	<0.020	<0.020	<0.020
Magnesium	mg/L	NV	NV	NV	89	180	160	110	15	21	10	22	41	3.4	3	60	61	28	28	38	38	98
Manganese	mg/L	5	0.05	NV	**0.29 [2]**	**0.44 [2]**	**0.30 [2]**	**0.39 [2]**	**0.13 [2]**	**0.60 [2]**	**0.085 [2]**	**0.92 [2]**	0.026	0.05	0.05	<0.010	**0.62 [2]**	**0.19 [2]**	**0.19 [2]**	**0.76 [2]**	**0.77 [2]**	**0.14 [2]**
Molybdenum	mg/L	5	NV	9.2	0.029	0.021	0.031	0.0074	0.0024	0.005	0.0074	0.0035	0.0027	0.018	0.017	0.015	0.0013	0.0028	0.0026	0.007	0.0069	0.0032
Nickel	mg/L	3	NV	0.49	0.0033	0.022	<0.010	0.011	0.0025	0.0016	0.0021	0.0013	<0.00050	0.0023	0.0021	<0.0050	0.032	0.00095	0.00088	0.0044	0.0047	0.0058
Phosphorous	mg/L	NV	NV	NV	<0.10	<1	<1	0.18	<0.10	1.3	<0.100	0.32	0.1	<0.100	<0.100	<0.500	0.76	<0.10	<0.10	0.17	0.14	<0.10
Potassium	mg/L	NV	NV	NV	16	21	21	24	1.6	7.5	5	13	6.9	2.3	1.9	40	15	9.4	9.5	16	15	11
Selenium	mg/L	5	0.02	0.063	0.00029	<0.020	<0.020	<0.0010	0.00046	0.0021	<0.0020	0.0013	<0.00020	<0.0020	<0.0020	<0.010	<0.0020	<0.00020	<0.00020	0.00022	0.00027	<0.00020
Silicon	mg/L	NV	NV	NV	5	12	15	13	4.1	9	9.3	9.1	14	1.3	1.2	2.6	24	12	12	8.4	8.3	12
Silver	mg/L	5	0.12	0.0015	<0.00010	<0.0010	<0.0010	<0.00050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	0.001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Sodium	mg/L	NV	NV	2300	300	**3000 [3]**	**3600 [3]**	1100	21	250	410	39	120	170	140	3000	610	140	140	240	240	170
Strontium	mg/L	NV	NV	NV	1.9	13	17	16	0.41	1.3	2.3	1	1.3	0.66	0.61	5.1	4.2	1.1	1.1	1.1	1.1	2
Sulphur	mg/L	NV	NV	NV	38	NA	NM	160	8.2	55	NM	45	47	NA	NA	NA	NA	26	26	19	19	48
Tellurium	mg/L	NV	NV	NV	NA	<0.010	<0.010	NA	NA	NA	<0.0010	NA	NA	<0.0010	<0.0010	0.005	<0.0010	NA	NA	NA	NA	NA
Thallium	mg/L	NV	NV	0.51	<0.00020	<0.00050	<0.00050	<0.0010	<0.00020	<0.00020	<0.000050	<0.00020	<0.00020	<0.000050	<0.000050	<0.00025	0.00037	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin	mg/L	5	NV	NV	<0.0010	<0.010	<0.010	<0.0050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.003	0.0015	<0.0050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Titanium	mg/L	5	NV	NV	<0.0010	<0.050	<0.050	0.076	<0.0010	0.019	<0.0050	<0.0010	<0.0010	<0.0050	<0.0050	<0.025	0.057	<0.0010	<0.0010	0.002	0.0011	<0.0010
Tungsten	mg/L	NV	NV	NV	NA	<0.010	<0.010	NA	NA	NA	0.001	NA	NA	0.0054	0.0052	<0.0050	0.0011	NA	NA	NA	NA	NA
Uranium	mg/L	NV	NV	0.42	0.00076	0.012	0.0051	0.0027	0.0012	0.0011	0.0019	0.0028	0.00038	0.0011	0.00092	0.0089	0.020	0.00033	0.00031	0.0035	0.0035	0.004
Vanadium	mg/L	5	NV	0.25	<0.0010	0.0095	<0.0050	<0.0050	<0.0010	0.016	0.00057	<0.0010	<0.0010	0.00082	0.00082	<0.0050	0.018	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	mg/L	3	0.04	1.1	0.016	<0.050	<0.050	<0.015	0.0043	<0.0030	<0.0050	<0.0030	<0.0030	0.0039	0.034	<0.025	**0.130 [2]**	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	mg/L	NV	NV	NV	NA	<0.010	<0.010	NA	NA	NA	0.0012	NA	NA	<0.0010	<0.0010	<0.0050	0.034	NA	NA	NA	NA	NA

NOTES:

1 Table 1. Limits for Sanitary and Combined Sewers Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

2 Table 2. Limits for Storm Sewer Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

3 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Groundwater Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

NV No criteria value is available for parameter

0.05 [1] Concentration exceeds the indicated standard/criteria.

Table E8 - Summary of Groundwater Analytical Results
Dissolved Metals
CSST
Project No. 163401060

Parameter	Units	City of Ottawa Sewer Use By Law Table 1 [1]	City of Ottawa Sewer Use By Law Table 2 [2]	Ontario	14-221S (Bolton and King Edward)	14-223A (Bordeleau Park)		14-224 (Bordeleau Park)	13-227S (Stanley Park)		14-228S (Queen Victoria and Riverlane)	MW14-A Duplicate of 14-228S	14-228S (Queen Victoria and Riverlane)	13-229 (Kent and Wellington)	13-231C (Kent and Florence)	2014 - C Duplicate of 13-231C	13-234C (Kent and Catherine)	14-319 (Laurier and Queen Elizabeth)	14-401 (Kent and HWY 417)	14-402A (Kent and Chamberlain)	14-502 (Supreme Court)
Well Depth				Table 3 [3]	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Deep	Shallow	Shallow	Shallow	Medium	Medium	Shallow	Medium
Sample Date (yyyy/mm/dd)					2014/05/16	2014/05/16	2014/12/05	2015/04/21	2014/05/16	2015/04/21	2014/05/16	2014/05/16	2014/12/05	2014/01/31	2014/01/08	2014/01/08	2014/01/08	2015/04/23	2015/04/21	2015/04/21	2014/11/11
Aluminum	mg/L	50	NV	NV	0.15	0.018	NA	NA	1.7	NA	0.22	0.15	NA	0.31	0.016	0.0095	0.036	0.02	NA	NA	NA
Antimony	mg/L	5	NV	20	0.00064	<0.00050	0.0006	0.00078	0.0026	0.0012	0.0023	0.0025	0.001	0.0052	<0.00060	<0.0060	<0.00060	<0.00050	0.00057	<0.00050	0.0009
Arsenic	mg/L	1	0.02	1.9	<0.001	<0.0010	<0.001	<0.0010	0.0017	0.001	0.0033	0.0035	0.01	0.0056	0.00022	0.00021	0.0029	<0.0010	<0.0050	0.0027	<0.0010
Barium	mg/L	NV	NV	29	0.082	0.055	0.11	0.064	0.016	0.027	0.043	0.044	0.160	0.038	0.12	0.12	0.17	0.052	0.210	0.062	0.077
Beryllium	mg/L	NV	NV	0.067	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	mg/L	NV	NV	NV	<0.0010	<0.0010	NA	NA	<0.00010	NA	<0.00010	<0.0010	NA	NA	NA	NA	NA	<0.010	NA	NA	NA
Boron	mg/L	NV	NV	45	0.052	0.022	0.039	0.03	0.07	0.036	0.1	0.11	0.24	0.21	0.22	0.22	0.19	0.065	0.078	0.03	0.29
Cadmium	mg/L	NV	NV	0.0027	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.010	<0.0001	NA	NA	NA	NA	0.00016	<0.00010	<0.00010	<0.00010
Calcium	mg/L	NV	NV	NV	100	84	NA	<0.005	24	NA	79	82	NA	26	380	410	43	270	NA	NA	NA
Chromium	mg/L	5	NV	0.81	<0.0050	<0.0050	<0.005	<0.00050	<0.0050	<0.0050	<0.0050	<0.0050	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<5.0	<0.0050	<0.0050
Cobalt	mg/L	5	NV	0.066	0.0022	<0.00050	0.003	0.0029	0.0062	<0.00050	0.004	0.0047	0.0011	0.0053	0.0023	0.0017	0.0019	0.00075	<0.001	0.00065	0.0098
Copper	mg/L	3	0.04	0.087	<0.0010	0.0013	0.003	NA	0.0047	0.0045	<0.0010	<0.0010	<0.001	<0.00020	0.0023	0.0022	<0.00020	0.0025	<0.0010	<0.0010	<0.0050
Iron	mg/L	NV	NV	NV	0.18	<0.100	NA	NA	0.500	NA	<0.100	<0.100	NA	0.11	<0.060	<0.060	0.16	<0.100	NA	NA	NA
Lead	mg/L	5	0.12	0.025	<0.00050	<0.00050	<0.00050	<0.00050	0.001	<0.00050	<0.00050	<0.00050	0.0015	<0.00020	<0.00020	<0.00020	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050
Lithium	mg/L	NV	NV	NV	<0.0050	<0.0050	NA	NA	0.0084	NA	0.016	0.016	NA	0.032	<0.020	0.024	<0.020	0.022	NA	NA	NA
Magnesium	mg/L	NV	NV	NV	18	16	NA	NA	5.3	NA	24	25	NA	7.6	140	140	20	170	NA	NA	NA
Manganese	mg/L	5	0.05	NV	**0.057** [2]	0.013	NA	NA	0.089	NA	0.040	0.045	NA	**0.13** [2]	0.049	0.05	**0.15** [2]	**0.67** [2]	NA	NA	NA
Molybdenum	mg/L	5	NV	9.2	0.014	0.0014	0.0024	0.0031	0.024	0.0097	0.046	0.046	0.015	0.12	0.005	0.0048	0.035	0.0063	0.02	0.0032	0.017
Nickel	mg/L	3	NV	0.49	0.0019	0.0013	0.005	0.0013	0.0046	0.0050	0.0024	0.0031	0.001	0.0028	0.0062	0.0059	0.00081	0.0054	0.0041	0.0033	0.011
Phosphorous	mg/L	NV	NV	NV	<0.100	<0.100	NA	NA	<0.100	NA	<0.100	<0.100	NA	0.15	<0.10	<0.10	<0.10	<0.100	NA	NA	NA
Potassium	mg/L	NV	NV	NV	6.6	1.7	NA	NA	1.4	NA	2.7	2.7	NA	3.6	31	31	13	21	NA	NA	NA
Selenium	mg/L	5	0.02	0.063	0.0024	<0.0020	0.002	0.0031	<0.0020	<0.0020	<0.0020	<0.0020	<0.002	0.0023	0.00064	0.00064	0.00096	<0.0020	<0.0020	<0.0020	0.016
Silicon	mg/L	NV	NV	NV	6.6	6.8	NA	NA	11	NA	4.5	4.5	NA	6.4	6.5	6.6	6.1	5.9	NA	NA	NA
Silver	mg/L	5	0.12	0.0015	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0001	<0.00010	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Sodium	mg/L	NV	NV	2300	180	25	32	51	150	76	190	190	420	400	1100	950	120	820	770	100	1700
Strontium	mg/L	NV	NV	NV	0.57	0.3	NA	NA	0.14	NA	2.5	2.6	NA	0.74	7.1	6.4	0.83	1.8	NA	NA	NA
Sulphur	mg/L	NV	NV	NV	NA	NA	NA	NA	NA	NA	NA	NA	NA	140	140	140	3.9	NM	NA	NA	NA
Tellurium	mg/L	NV	NV	NV	<0.0010	<0.0010	NA	NA	<0.0010	NA	<0.0010	<0.0010	NA	NA	NA	NA	NA	<0.0010	NA	NA	NA
Thallium	mg/L	NV	NV	0.51	<0.000050	<0.000050	0.00009	<0.000050	<0.000050	0.000089	<0.000050	<0.000050	<0.00005	<0.00020	<0.0020	<0.0020	<0.00020	<0.000050	<0.000050	<0.000050	0.00031
Tin	mg/L	5	NV	NV	<0.0010	<0.0010	NA	NA	<0.0010	NA	<0.0010	<0.0010	NA	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NA	NA	NA
Titanium	mg/L	5	NV	NV	0.011	<0.0050	NA	NA	0.015	NA	<0.0050	<0.0050	NA	0.0023	<0.0010	<0.0010	0.0015	<0.0050	NA	NA	NA
Tungsten	mg/L	NV	NV	NV	0.039	<0.0010	NA	NA	0.061	NA	0.010	0.0097	NA	NA	NA	NA	NA	<0.0010	NA	NA	NA
Uranium	mg/L	NV	NV	0.42	0.0024	0.0022	0.015	0.0021	0.0084	0.0043	0.016	0.017	0.0053	0.074	0.0062	0.0063	0.0022	0.012	0.0041	0.0005	0.0073
Vanadium	mg/L	5	NV	0.25	0.0015	0.00067	0.0014	<0.00050	0.0013	0.00088	0.00087	0.00076	0.0019	<0.0010	<0.0010	<0.0010	<0.0010	0.002	<0.0025	0.0013	<0.0025
Zinc	mg/L	3	0.04	1.1	<0.0050	<0.0050	<0.005	<0.0050	0.0055	<0.0050	<0.0050	<0.0050	0.005	<0.0030	0.0049	<0.0030	<0.0030	<0.0050	<0.0050	<0.0050	0.0073
Zirconium	mg/L	NV	NV	NV	<0.0010	<0.0010	NA	NA	0.0038	NA	<0.0010	<0.0010	NA	NA	NA	NA	NA	<0.0010	NA	NA	NA

NOTES:

1 Table 1. Limits for Sanitary and Combined Sewers Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

2 Table 2. Limits for Storm Sewer Discharge as per the City of Ottawa Sewer Use By-law No.2003 - 514

3 Table 3 , Full Depth Generic Site Condition Standards, in a Non-Potable Ground Water Condition, industrial /commercial/ community property use, Groundwater Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

NV No criteria value is available for parameter

0.05 [1] Concentration exceeds the indicated standard/criteria.

Appendix F
Laboratory Certificates of Analysis

Your P.O. #: 16300R-20
Your Project #: 163401060
Your C.O.C. #: 43681401, 436814-01-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/09/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3F6835
Received: 2013/09/17, 18:35

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	1	N/A	2013/09/24	CAM SOP - 00301	EPA 8270
1,3-Dichloropropene Sum	1	N/A	2013/09/25	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2013/09/19	2013/09/20	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/09/19	2013/09/19	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	1	2013/09/23	2013/09/23	CAM SOP-00447	EPA 6020
MOISTURE	1	N/A	2013/09/20	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2013/09/20	2013/09/20	CAM SOP - 00318	EPA 8270
pH CaCl2 EXTRACT (1)	1	2013/09/24	2013/09/24	CAM SOP-00413	SM 4500H+ B
Volatile Organic Compounds in Soil	1	2013/09/24	2013/09/24	OTT SOP-00005	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed

Your P.O. #: 16300R-20
Your Project #: 163401060
Your C.O.C. #: 43681401, 436814-01-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/09/25

CERTIFICATE OF ANALYSIS

or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* 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.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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.

Total cover pages: 2

Maxxam Job #: B3F6835
Report Date: 2013/09/25

Stantec Consulting Ltd
Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 PAHS (SOIL)

Maxxam ID		TC3303		
Sampling Date		2013/09/17		
COC Number		436814-01-01		
	Units	**BH13-113 SS3**	**RDL**	**QC Batch**
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	3353387
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	ND	0.0050	3356651
Acenaphthylene	ug/g	ND	0.0050	3356651
Anthracene	ug/g	ND	0.0050	3356651
Benzo(a)anthracene	ug/g	ND	0.0050	3356651
Benzo(a)pyrene	ug/g	ND	0.0050	3356651
Benzo(b/j)fluoranthene	ug/g	ND	0.0050	3356651
Benzo(g,h,i)perylene	ug/g	ND	0.0050	3356651
Benzo(k)fluoranthene	ug/g	ND	0.0050	3356651
Chrysene	ug/g	ND	0.0050	3356651
Dibenz(a,h)anthracene	ug/g	ND	0.0050	3356651
Fluoranthene	ug/g	ND	0.0050	3356651
Fluorene	ug/g	ND	0.0050	3356651
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.0050	3356651
1-Methylnaphthalene	ug/g	ND	0.0050	3356651
2-Methylnaphthalene	ug/g	ND	0.0050	3356651
Naphthalene	ug/g	ND	0.0050	3356651
Phenanthrene	ug/g	ND	0.0050	3356651
Pyrene	ug/g	ND	0.0050	3356651
Surrogate Recovery (%)				
D10-Anthracene	%	76		3356651
D14-Terphenyl (FS)	%	75		3356651
D8-Acenaphthylene	%	62		3356651

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

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.maxxamanalytics.com

Maxxam Job #: B3F6835
Report Date: 2013/09/25

Stantec Consulting Ltd
Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		TC3303		
Sampling Date		2013/09/17		
COC Number		436814-01-01		
	Units	**BH13-113 SS3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/g	ND	10	3355495
F1 (C6-C10) - BTEX	ug/g	ND	10	3355495
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	ND	10	3354994
F3 (C16-C34 Hydrocarbons)	ug/g	ND	10	3354994
F4 (C34-C50 Hydrocarbons)	ug/g	ND	10	3354994
Reached Baseline at C50	ug/g	Yes		3354994
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	89		3355495
4-Bromofluorobenzene	%	106		3355495
D10-Ethylbenzene	%	107		3355495
D4-1,2-Dichloroethane	%	104		3355495
o-Terphenyl	%	84		3354994

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

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Report Date: 2013/09/25

Stantec Consulting Ltd
Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		TC3303		
Sampling Date		2013/09/17		
COC Number		436814-01-01		
	Units	**BH13-113 SS3**	**RDL**	**QC Batch**
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.071	3353564
Volatile Organics				
Acetone (2-Propanone)	ug/g	ND	0.50	3360566
Benzene	ug/g	ND	0.020	3360566
Bromodichloromethane	ug/g	ND	0.050	3360566
Bromoform	ug/g	ND	0.050	3360566
Bromomethane	ug/g	ND	0.050	3360566
Carbon Tetrachloride	ug/g	ND	0.050	3360566
Chlorobenzene	ug/g	ND	0.050	3360566
Chloroform	ug/g	ND	0.050	3360566
Dibromochloromethane	ug/g	ND	0.050	3360566
1,2-Dichlorobenzene	ug/g	ND	0.050	3360566
1,3-Dichlorobenzene	ug/g	ND	0.050	3360566
1,4-Dichlorobenzene	ug/g	ND	0.050	3360566
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	3360566
1,1-Dichloroethane	ug/g	ND	0.050	3360566
1,2-Dichloroethane	ug/g	ND	0.050	3360566
1,1-Dichloroethylene	ug/g	ND	0.050	3360566
cis-1,2-Dichloroethylene	ug/g	ND	0.050	3360566
trans-1,2-Dichloroethylene	ug/g	ND	0.050	3360566
1,2-Dichloropropane	ug/g	ND	0.050	3360566
cis-1,3-Dichloropropene	ug/g	ND	0.050	3360566
trans-1,3-Dichloropropene	ug/g	ND	0.050	3360566
Ethylbenzene	ug/g	ND	0.020	3360566
Ethylene Dibromide	ug/g	ND	0.050	3360566
Hexane	ug/g	ND	0.050	3360566
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	3360566
Methyl Isobutyl Ketone	ug/g	ND	0.50	3360566
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	3360566
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	3360566
Styrene	ug/g	ND	0.050	3360566

ND = Not detected
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QC Batch = Quality Control Batch

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Maxxam Job #: B3F6835
Report Date: 2013/09/25

Stantec Consulting Ltd
Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		TC3303		
Sampling Date		2013/09/17		
COC Number		436814-01-01		
	Units	**BH13-113 SS3**	**RDL**	**QC Batch**
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	3360566
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	3360566
Tetrachloroethylene	ug/g	ND	0.050	3360566
Toluene	ug/g	ND	0.020	3360566
1,1,1-Trichloroethane	ug/g	ND	0.050	3360566
1,1,2-Trichloroethane	ug/g	ND	0.050	3360566
Trichloroethylene	ug/g	ND	0.050	3360566
Vinyl Chloride	ug/g	ND	0.020	3360566
p+m-Xylene	ug/g	ND	0.020	3360566
o-Xylene	ug/g	ND	0.020	3360566
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	3360566
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	102		3360566
D4-1,2-Dichloroethane	%	119		3360566
D8-Toluene	%	91		3360566

ND = Not detected
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Report Date: 2013/09/25

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Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: AW

RESULTS OF ANALYSES OF SOIL

Maxxam ID		TC3303		
Sampling Date		2013/09/17		
COC Number		436814-01-01		
	Units	**BH13-113 SS3**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	13	0.2	3354997
Available (CaCl2) pH	pH	7.82		3360260

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3F6835
Report Date: 2013/09/25

Stantec Consulting Ltd
Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: AW

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TC3303		
Sampling Date		2013/09/17		
COC Number		436814-01-01		
	Units	**BH13-113 SS3**	**RDL**	**QC Batch**
Metals				
Acid Extractable Aluminum (Al)	ug/g	2600	50	3358980
Acid Extractable Antimony (Sb)	ug/g	ND	0.20	3358980
Acid Extractable Arsenic (As)	ug/g	ND	1.0	3358980
Acid Extractable Barium (Ba)	ug/g	18	0.50	3358980
Acid Extractable Beryllium (Be)	ug/g	ND	0.20	3358980
Acid Extractable Cadmium (Cd)	ug/g	ND	0.10	3358980
Acid Extractable Calcium (Ca)	ug/g	8100	50	3358980
Acid Extractable Chromium (Cr)	ug/g	10	1.0	3358980
Acid Extractable Cobalt (Co)	ug/g	2.7	0.10	3358980
Acid Extractable Copper (Cu)	ug/g	7.7	0.50	3358980
Acid Extractable Iron (Fe)	ug/g	8200	50	3358980
Acid Extractable Lead (Pb)	ug/g	1.7	1.0	3358980
Acid Extractable Magnesium (Mg)	ug/g	2900	50	3358980
Acid Extractable Manganese (Mn)	ug/g	120	1.0	3358980
Acid Extractable Molybdenum (Mo)	ug/g	ND	0.50	3358980
Acid Extractable Nickel (Ni)	ug/g	6.3	0.50	3358980
Acid Extractable Phosphorus (P)	ug/g	540	50	3358980
Acid Extractable Potassium (K)	ug/g	530	200	3358980
Acid Extractable Selenium (Se)	ug/g	ND	0.50	3358980
Acid Extractable Silver (Ag)	ug/g	ND	0.20	3358980
Acid Extractable Sodium (Na)	ug/g	270	100	3358980
Acid Extractable Strontium (Sr)	ug/g	21	1.0	3358980
Acid Extractable Thallium (Tl)	ug/g	ND	0.050	3358980
Acid Extractable Vanadium (V)	ug/g	15	5.0	3358980
Acid Extractable Zinc (Zn)	ug/g	15	5.0	3358980

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Maxxam Job #: B3F6835
Report Date: 2013/09/25

Stantec Consulting Ltd
Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: AW

Test Summary

Maxxam ID TC3303
Sample ID BH13-113 SS3
Matrix Soil

Collected 2013/09/17
Shipped
Received 2013/09/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3353387	N/A	2013/09/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	3353564	N/A	2013/09/25	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3355495	2013/09/19	2013/09/20	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3354994	2013/09/19	2013/09/19	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3358980	2013/09/23	2013/09/23	Viviana Canzonieri
MOISTURE	BAL	3354997	N/A	2013/09/20	Habiba Essak
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3356651	2013/09/20	2013/09/20	Yuan Zhou
pH CaCl2 EXTRACT		3360260	2013/09/24	2013/09/24	Surinder Rai
Volatile Organic Compounds in Soil	P&T/MS	3360566	2013/09/24	2013/09/24	Paul Rubinato

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Maxxam Job #: B3F6835
Report Date: 2013/09/25

Stantec Consulting Ltd
Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: AW

Package 1	4.0°C

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

GENERAL COMMENTS

Results relate only to the items tested.

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.maxxamanalytics.com

Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location:

Quality Assurance Report

Maxxam Job Number: TB3F6835

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3354994	HES	Matrix Spike						
		[TC3303-01]	o-Terphenyl	2013/09/19		81	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/19		71	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2013/09/19		71	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2013/09/19		71	%	50 - 130
		Spiked Blank	o-Terphenyl	2013/09/19		85	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/19		81	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2013/09/19		81	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2013/09/19		81	%	80 - 120
		Method Blank	o-Terphenyl	2013/09/19		86	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/19	ND, RDL=10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2013/09/19	ND, RDL=10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2013/09/19	ND, RDL=10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2013/09/19	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2013/09/19	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2013/09/19	NC		%	50
3354997	HES	RPD	Moisture	2013/09/20	2.2		%	50
3355495	STE	Spiked Blank	1,4-Difluorobenzene	2013/09/20		89	%	60 - 140
			4-Bromofluorobenzene	2013/09/20		104	%	60 - 140
			D10-Ethylbenzene	2013/09/20		103	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/20		105	%	60 - 140
			F1 (C6-C10)	2013/09/20		93	%	80 - 120
		RPD	F1 (C6-C10)	2013/09/20	15.3		%	50
		Method Blank	1,4-Difluorobenzene	2013/09/20		90	%	60 - 140
			4-Bromofluorobenzene	2013/09/20		107	%	60 - 140
			D10-Ethylbenzene	2013/09/20		126	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/20		106	%	60 - 140
			F1 (C6-C10)	2013/09/20	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2013/09/20	ND, RDL=10		ug/g	
		RPD	F1 (C6-C10) - BTEX	2013/09/20	NC		%	50
3356651	YZ	Matrix Spike	D10-Anthracene	2013/09/20		73	%	50 - 130
			D14-Terphenyl (FS)	2013/09/20		73	%	50 - 130
			D8-Acenaphthylene	2013/09/20		67	%	50 - 130
			Acenaphthene	2013/09/20		76	%	50 - 130
			Acenaphthylene	2013/09/20		72	%	50 - 130
			Anthracene	2013/09/20		77	%	50 - 130
			Benzo(a)anthracene	2013/09/20		82	%	50 - 130
			Benzo(a)pyrene	2013/09/20		82	%	50 - 130
			Benzo(b/j)fluoranthene	2013/09/20		79	%	50 - 130
			Benzo(g,h,i)perylene	2013/09/20		69	%	50 - 130
			Benzo(k)fluoranthene	2013/09/20		80	%	50 - 130
			Chrysene	2013/09/20		81	%	50 - 130
			Dibenz(a,h)anthracene	2013/09/20		76	%	50 - 130
			Fluoranthene	2013/09/20		79	%	50 - 130
			Fluorene	2013/09/20		74	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/09/20		74	%	50 - 130
			1-Methylnaphthalene	2013/09/20		64	%	50 - 130
			2-Methylnaphthalene	2013/09/20		64	%	50 - 130
			Naphthalene	2013/09/20		73	%	50 - 130
			Phenanthrene	2013/09/20		79	%	50 - 130
			Pyrene	2013/09/20		81	%	50 - 130
		Spiked Blank	D10-Anthracene	2013/09/20		84	%	50 - 130
			D14-Terphenyl (FS)	2013/09/20		86	%	50 - 130
			D8-Acenaphthylene	2013/09/20		82	%	50 - 130
			Acenaphthene	2013/09/20		86	%	50 - 130

Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
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Quality Assurance Report (Continued)

Maxxam Job Number: TB3F6835

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3356651	YZ	Spiked Blank	Acenaphthylene	2013/09/20		87	%	50 - 130
			Anthracene	2013/09/20		88	%	50 - 130
			Benzo(a)anthracene	2013/09/20		93	%	50 - 130
			Benzo(a)pyrene	2013/09/20		92	%	50 - 130
			Benzo(b/j)fluoranthene	2013/09/20		91	%	50 - 130
			Benzo(g,h,i)perylene	2013/09/20		78	%	50 - 130
			Benzo(k)fluoranthene	2013/09/20		91	%	50 - 130
			Chrysene	2013/09/20		93	%	50 - 130
			Dibenz(a,h)anthracene	2013/09/20		85	%	50 - 130
			Fluoranthene	2013/09/20		92	%	50 - 130
			Fluorene	2013/09/20		85	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/09/20		85	%	50 - 130
			1-Methylnaphthalene	2013/09/20		75	%	50 - 130
			2-Methylnaphthalene	2013/09/20		76	%	50 - 130
			Naphthalene	2013/09/20		86	%	50 - 130
			Phenanthrene	2013/09/20		92	%	50 - 130
			Pyrene	2013/09/20		94	%	50 - 130
		Method Blank	D10-Anthracene	2013/09/20		90	%	50 - 130
			D14-Terphenyl (FS)	2013/09/20		90	%	50 - 130
			D8-Acenaphthylene	2013/09/20		80	%	50 - 130
			Acenaphthene	2013/09/20	ND, RDL=0.0050		ug/g	
			Acenaphthylene	2013/09/20	ND, RDL=0.0050		ug/g	
			Anthracene	2013/09/20	ND, RDL=0.0050		ug/g	
			Benzo(a)anthracene	2013/09/20	ND, RDL=0.0050		ug/g	
			Benzo(a)pyrene	2013/09/20	ND, RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2013/09/20	ND, RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2013/09/20	ND, RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2013/09/20	ND, RDL=0.0050		ug/g	
			Chrysene	2013/09/20	ND, RDL=0.0050		ug/g	
			Dibenz(a,h)anthracene	2013/09/20	ND, RDL=0.0050		ug/g	
			Fluoranthene	2013/09/20	ND, RDL=0.0050		ug/g	
			Fluorene	2013/09/20	ND, RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2013/09/20	ND, RDL=0.0050		ug/g	
			1-Methylnaphthalene	2013/09/20	ND, RDL=0.0050		ug/g	
			2-Methylnaphthalene	2013/09/20	ND, RDL=0.0050		ug/g	
			Naphthalene	2013/09/20	ND, RDL=0.0050		ug/g	
			Phenanthrene	2013/09/20	ND, RDL=0.0050		ug/g	
			Pyrene	2013/09/20	ND, RDL=0.0050		ug/g	
		RPD	Acenaphthene	2013/09/20	NC		%	40
			Acenaphthylene	2013/09/20	NC		%	40
			Anthracene	2013/09/20	NC		%	40
			Benzo(a)anthracene	2013/09/20	NC		%	40
			Benzo(a)pyrene	2013/09/20	NC		%	40
			Benzo(b/j)fluoranthene	2013/09/20	NC		%	40
			Benzo(g,h,i)perylene	2013/09/20	NC		%	40
			Benzo(k)fluoranthene	2013/09/20	NC		%	40
			Chrysene	2013/09/20	NC		%	40
			Dibenz(a,h)anthracene	2013/09/20	NC		%	40
			Fluoranthene	2013/09/20	NC		%	40
			Fluorene	2013/09/20	NC		%	40
			Indeno(1,2,3-cd)pyrene	2013/09/20	NC		%	40
			1-Methylnaphthalene	2013/09/20	NC		%	40
			2-Methylnaphthalene	2013/09/20	NC		%	40
			Naphthalene	2013/09/20	NC		%	40
			Phenanthrene	2013/09/20	NC		%	40

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Client Project #: 163401060
P.O. #: 16300R-20
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Quality Assurance Report (Continued)

Maxxam Job Number: TB3F6835

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3356651	YZ	RPD	Pyrene	2013/09/20	NC		%	40
3358980	VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2013/09/23		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2013/09/23		100	%	75 - 125
			Acid Extractable Arsenic (As)	2013/09/23		98	%	75 - 125
			Acid Extractable Barium (Ba)	2013/09/23		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2013/09/23		100	%	75 - 125
			Acid Extractable Cadmium (Cd)	2013/09/23		98	%	75 - 125
			Acid Extractable Calcium (Ca)	2013/09/23		NC	%	75 - 125
			Acid Extractable Chromium (Cr)	2013/09/23		100	%	75 - 125
			Acid Extractable Cobalt (Co)	2013/09/23		102	%	75 - 125
			Acid Extractable Copper (Cu)	2013/09/23		102	%	75 - 125
			Acid Extractable Iron (Fe)	2013/09/23		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2013/09/23		102	%	75 - 125
			Acid Extractable Magnesium (Mg)	2013/09/23		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2013/09/23		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2013/09/23		101	%	75 - 125
			Acid Extractable Nickel (Ni)	2013/09/23		100	%	75 - 125
			Acid Extractable Phosphorus (P)	2013/09/23		NC	%	75 - 125
			Acid Extractable Potassium (K)	2013/09/23		99	%	75 - 125
			Acid Extractable Selenium (Se)	2013/09/23		101	%	75 - 125
			Acid Extractable Silver (Ag)	2013/09/23		102	%	75 - 125
			Acid Extractable Sodium (Na)	2013/09/23		102	%	75 - 125
			Acid Extractable Strontium (Sr)	2013/09/23		101	%	75 - 125
			Acid Extractable Thallium (Tl)	2013/09/23		96	%	75 - 125
			Acid Extractable Vanadium (V)	2013/09/23		101	%	75 - 125
			Acid Extractable Zinc (Zn)	2013/09/23		102	%	75 - 125
		Spiked Blank	Acid Extractable Aluminum (Al)	2013/09/23		109	%	80 - 120
			Acid Extractable Antimony (Sb)	2013/09/23		103	%	80 - 120
			Acid Extractable Arsenic (As)	2013/09/23		99	%	80 - 120
			Acid Extractable Barium (Ba)	2013/09/23		102	%	80 - 120
			Acid Extractable Beryllium (Be)	2013/09/23		103	%	80 - 120
			Acid Extractable Cadmium (Cd)	2013/09/23		100	%	80 - 120
			Acid Extractable Calcium (Ca)	2013/09/23		106	%	80 - 120
			Acid Extractable Chromium (Cr)	2013/09/23		99	%	80 - 120
			Acid Extractable Cobalt (Co)	2013/09/23		101	%	80 - 120
			Acid Extractable Copper (Cu)	2013/09/23		99	%	80 - 120
			Acid Extractable Iron (Fe)	2013/09/23		103	%	80 - 120
			Acid Extractable Lead (Pb)	2013/09/23		103	%	80 - 120
			Acid Extractable Magnesium (Mg)	2013/09/23		100	%	80 - 120
			Acid Extractable Manganese (Mn)	2013/09/23		98	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2013/09/23		103	%	80 - 120
			Acid Extractable Nickel (Ni)	2013/09/23		100	%	80 - 120
			Acid Extractable Phosphorus (P)	2013/09/23		116	%	80 - 120
			Acid Extractable Potassium (K)	2013/09/23		100	%	80 - 120
			Acid Extractable Selenium (Se)	2013/09/23		99	%	80 - 120
			Acid Extractable Silver (Ag)	2013/09/23		104	%	80 - 120
			Acid Extractable Sodium (Na)	2013/09/23		101	%	80 - 120
			Acid Extractable Strontium (Sr)	2013/09/23		99	%	80 - 120
			Acid Extractable Thallium (Tl)	2013/09/23		97	%	80 - 120
			Acid Extractable Vanadium (V)	2013/09/23		100	%	80 - 120
			Acid Extractable Zinc (Zn)	2013/09/23		102	%	80 - 120
		Method Blank	Acid Extractable Aluminum (Al)	2013/09/23	ND, RDL=50		ug/g	
			Acid Extractable Antimony (Sb)	2013/09/23	ND, RDL=0.20		ug/g	
			Acid Extractable Arsenic (As)	2013/09/23	ND, RDL=1.0		ug/g	
			Acid Extractable Barium (Ba)	2013/09/23	ND, RDL=0.50		ug/g	

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Client Project #: 163401060
P.O. #: 16300R-20
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Quality Assurance Report (Continued)

Maxxam Job Number: TB3F6835

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3358980	VIV	Method Blank	Acid Extractable Beryllium (Be)	2013/09/23	ND, RDL=0.20		ug/g	
			Acid Extractable Cadmium (Cd)	2013/09/23	ND, RDL=0.10		ug/g	
			Acid Extractable Calcium (Ca)	2013/09/23	ND, RDL=50		ug/g	
			Acid Extractable Chromium (Cr)	2013/09/23	ND, RDL=1.0		ug/g	
			Acid Extractable Cobalt (Co)	2013/09/23	ND, RDL=0.10		ug/g	
			Acid Extractable Copper (Cu)	2013/09/23	ND, RDL=0.50		ug/g	
			Acid Extractable Iron (Fe)	2013/09/23	ND, RDL=50		ug/g	
			Acid Extractable Lead (Pb)	2013/09/23	ND, RDL=1.0		ug/g	
			Acid Extractable Magnesium (Mg)	2013/09/23	ND, RDL=50		ug/g	
			Acid Extractable Manganese (Mn)	2013/09/23	ND, RDL=1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2013/09/23	ND, RDL=0.50		ug/g	
			Acid Extractable Nickel (Ni)	2013/09/23	ND, RDL=0.50		ug/g	
			Acid Extractable Phosphorus (P)	2013/09/23	ND, RDL=50		ug/g	
			Acid Extractable Potassium (K)	2013/09/23	ND, RDL=200		ug/g	
			Acid Extractable Selenium (Se)	2013/09/23	ND, RDL=0.50		ug/g	
			Acid Extractable Silver (Ag)	2013/09/23	ND, RDL=0.20		ug/g	
			Acid Extractable Sodium (Na)	2013/09/23	ND, RDL=100		ug/g	
			Acid Extractable Strontium (Sr)	2013/09/23	ND, RDL=1.0		ug/g	
			Acid Extractable Thallium (Tl)	2013/09/23	ND, RDL=0.050		ug/g	
			Acid Extractable Vanadium (V)	2013/09/23	ND, RDL=5.0		ug/g	
			Acid Extractable Zinc (Zn)	2013/09/23	ND, RDL=5.0		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2013/09/23	NC		%	30
			Acid Extractable Arsenic (As)	2013/09/23	NC		%	30
			Acid Extractable Barium (Ba)	2013/09/23	0.9		%	30
			Acid Extractable Beryllium (Be)	2013/09/23	NC		%	30
			Acid Extractable Cadmium (Cd)	2013/09/23	NC		%	30
			Acid Extractable Chromium (Cr)	2013/09/23	1.7		%	30
			Acid Extractable Cobalt (Co)	2013/09/23	9.9		%	30
			Acid Extractable Copper (Cu)	2013/09/23	0.6		%	30
			Acid Extractable Lead (Pb)	2013/09/23	NC		%	30
			Acid Extractable Molybdenum (Mo)	2013/09/23	NC		%	30
			Acid Extractable Nickel (Ni)	2013/09/23	20.0		%	30
			Acid Extractable Selenium (Se)	2013/09/23	NC		%	30
			Acid Extractable Silver (Ag)	2013/09/23	NC		%	30
			Acid Extractable Thallium (Tl)	2013/09/23	NC		%	30
			Acid Extractable Vanadium (V)	2013/09/23	NC		%	30
			Acid Extractable Zinc (Zn)	2013/09/23	NC		%	30
3360566	PRB	Spiked Blank	4-Bromofluorobenzene	2013/09/24		113	%	60 - 140
			D4-1,2-Dichloroethane	2013/09/24		117	%	60 - 140
			D8-Toluene	2013/09/24		96	%	60 - 140
			Acetone (2-Propanone)	2013/09/24		114	%	60 - 140
		RPD	Acetone (2-Propanone)	2013/09/24	3.8		%	50
		Spiked Blank	Benzene	2013/09/24		99	%	60 - 140
		RPD	Benzene	2013/09/24	1.0		%	50
		Spiked Blank	Bromodichloromethane	2013/09/24		111	%	60 - 140
		RPD	Bromodichloromethane	2013/09/24	1.8		%	50
		Spiked Blank	Bromoform	2013/09/24		115	%	60 - 140
		RPD	Bromoform	2013/09/24	5.2		%	50
		Spiked Blank	Bromomethane	2013/09/24		89	%	60 - 140
		RPD	Bromomethane	2013/09/24	12.6		%	50
		Spiked Blank	Carbon Tetrachloride	2013/09/24		111	%	60 - 140
		RPD	Carbon Tetrachloride	2013/09/24	1.3		%	50
		Spiked Blank	Chlorobenzene	2013/09/24		97	%	60 - 140
		RPD	Chlorobenzene	2013/09/24	2.7		%	50
		Spiked Blank	Chloroform	2013/09/24		108	%	60 - 140

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Client Project #: 163401060
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Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: TB3F6835

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	RPD	Chloroform	2013/09/24	2.1		%	50
		Spiked Blank	Dibromochloromethane	2013/09/24		109	%	60 - 140
		RPD	Dibromochloromethane	2013/09/24	6.5		%	50
		Spiked Blank	1,2-Dichlorobenzene	2013/09/24		95	%	60 - 140
		RPD	1,2-Dichlorobenzene	2013/09/24	7.6		%	50
		Spiked Blank	1,3-Dichlorobenzene	2013/09/24		90	%	60 - 140
		RPD	1,3-Dichlorobenzene	2013/09/24	6.7		%	50
		Spiked Blank	1,4-Dichlorobenzene	2013/09/24		96	%	60 - 140
		RPD	1,4-Dichlorobenzene	2013/09/24	6.2		%	50
		Spiked Blank	Dichlorodifluoromethane (FREON 12)	2013/09/24		102	%	60 - 140
		RPD	Dichlorodifluoromethane (FREON 12)	2013/09/24	2.4		%	50
		Spiked Blank	1,1-Dichloroethane	2013/09/24		100	%	60 - 140
		RPD	1,1-Dichloroethane	2013/09/24	1.3		%	50
		Spiked Blank	1,2-Dichloroethane	2013/09/24		115	%	60 - 140
		RPD	1,2-Dichloroethane	2013/09/24	0.8		%	50
		Spiked Blank	1,1-Dichloroethylene	2013/09/24		106	%	60 - 140
		RPD	1,1-Dichloroethylene	2013/09/24	3.3		%	50
		Spiked Blank	cis-1,2-Dichloroethylene	2013/09/24		101	%	60 - 140
		RPD	cis-1,2-Dichloroethylene	2013/09/24	0.2		%	50
		Spiked Blank	trans-1,2-Dichloroethylene	2013/09/24		96	%	60 - 140
		RPD	trans-1,2-Dichloroethylene	2013/09/24	2.3		%	50
		Spiked Blank	1,2-Dichloropropane	2013/09/24		105	%	60 - 140
		RPD	1,2-Dichloropropane	2013/09/24	4.4		%	50
		Spiked Blank	cis-1,3-Dichloropropene	2013/09/24		104	%	60 - 140
		RPD	cis-1,3-Dichloropropene	2013/09/24	1.4		%	50
		Spiked Blank	trans-1,3-Dichloropropene	2013/09/24		96	%	60 - 140
		RPD	trans-1,3-Dichloropropene	2013/09/24	0.2		%	50
		Spiked Blank	Ethylbenzene	2013/09/24		88	%	60 - 140
		RPD	Ethylbenzene	2013/09/24	6.6		%	50
		Spiked Blank	Ethylene Dibromide	2013/09/24		106	%	60 - 140
		RPD	Ethylene Dibromide	2013/09/24	5.5		%	50
		Spiked Blank	Hexane	2013/09/24		83	%	60 - 140
		RPD	Hexane	2013/09/24	1.2		%	50
		Spiked Blank	Methylene Chloride(Dichloromethane)	2013/09/24		110	%	60 - 140
		RPD	Methylene Chloride(Dichloromethane)	2013/09/24	0.06		%	50
		Spiked Blank	Methyl Isobutyl Ketone	2013/09/24		117	%	60 - 140
		RPD	Methyl Isobutyl Ketone	2013/09/24	2.7		%	50
		Spiked Blank	Methyl Ethyl Ketone (2-Butanone)	2013/09/24		121	%	60 - 140
		RPD	Methyl Ethyl Ketone (2-Butanone)	2013/09/24	3.4		%	50
		Spiked Blank	Methyl t-butyl ether (MTBE)	2013/09/24		102	%	60 - 140
		RPD	Methyl t-butyl ether (MTBE)	2013/09/24	1.7		%	50
		Spiked Blank	Styrene	2013/09/24		100	%	60 - 140
		RPD	Styrene	2013/09/24	7.6		%	50
		Spiked Blank	1,1,1,2-Tetrachloroethane	2013/09/24		103	%	60 - 140
		RPD	1,1,1,2-Tetrachloroethane	2013/09/24	6.7		%	50
		Spiked Blank	1,1,2,2-Tetrachloroethane	2013/09/24		108	%	60 - 140
		RPD	1,1,2,2-Tetrachloroethane	2013/09/24	0.04		%	50
		Spiked Blank	Tetrachloroethylene	2013/09/24		93	%	60 - 140
		RPD	Tetrachloroethylene	2013/09/24	8.1		%	50
		Spiked Blank	Toluene	2013/09/24		93	%	60 - 140
		RPD	Toluene	2013/09/24	7.6		%	50
		Spiked Blank	1,1,1-Trichloroethane	2013/09/24		105	%	60 - 140
		RPD	1,1,1-Trichloroethane	2013/09/24	1.2		%	50
		Spiked Blank	1,1,2-Trichloroethane	2013/09/24		104	%	60 - 140
		RPD	1,1,2-Trichloroethane	2013/09/24	6.3		%	50

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: TB3F6835

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	Spiked Blank	Trichloroethylene	2013/09/24		101	%	60 - 140
		RPD	Trichloroethylene	2013/09/24	4.9		%	50
		Spiked Blank	Vinyl Chloride	2013/09/24		99	%	60 - 140
		RPD	Vinyl Chloride	2013/09/24	4.2		%	50
		Spiked Blank	p+m-Xylene	2013/09/24		99	%	60 - 140
		RPD	p+m-Xylene	2013/09/24	6.4		%	50
		Spiked Blank	o-Xylene	2013/09/24		80	%	60 - 140
		RPD	o-Xylene	2013/09/24	7.8		%	50
		Spiked Blank	Trichlorofluoromethane (FREON 11)	2013/09/24		109	%	60 - 140
		RPD	Trichlorofluoromethane (FREON 11)	2013/09/24	0.5		%	50
		Method Blank	4-Bromofluorobenzene	2013/09/24		100	%	60 - 140
			D4-1,2-Dichloroethane	2013/09/24		117	%	60 - 140
			D8-Toluene	2013/09/24		85	%	60 - 140
			Acetone (2-Propanone)	2013/09/24	ND, RDL=0.50		ug/g	
			Benzene	2013/09/24	ND, RDL=0.020		ug/g	
			Bromodichloromethane	2013/09/24	ND, RDL=0.050		ug/g	
			Bromoform	2013/09/24	ND, RDL=0.050		ug/g	
			Bromomethane	2013/09/24	ND, RDL=0.050		ug/g	
			Carbon Tetrachloride	2013/09/24	ND, RDL=0.050		ug/g	
			Chlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			Chloroform	2013/09/24	ND, RDL=0.050		ug/g	
			Dibromochloromethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			1,3-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			1,4-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2013/09/24	ND, RDL=0.050		ug/g	
			1,1-Dichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			cis-1,2-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			trans-1,2-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichloropropane	2013/09/24	ND, RDL=0.050		ug/g	
			cis-1,3-Dichloropropene	2013/09/24	ND, RDL=0.050		ug/g	
			trans-1,3-Dichloropropene	2013/09/24	ND, RDL=0.050		ug/g	
			Ethylbenzene	2013/09/24	ND, RDL=0.020		ug/g	
			Ethylene Dibromide	2013/09/24	ND, RDL=0.050		ug/g	
			Hexane	2013/09/24	ND, RDL=0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2013/09/24	ND, RDL=0.050		ug/g	
			Methyl Isobutyl Ketone	2013/09/24	ND, RDL=0.50		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2013/09/24	ND, RDL=0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2013/09/24	ND, RDL=0.050		ug/g	
			Styrene	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			Tetrachloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			Toluene	2013/09/24	ND, RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,2-Trichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			Trichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			Vinyl Chloride	2013/09/24	ND, RDL=0.020		ug/g	
			p+m-Xylene	2013/09/24	ND, RDL=0.020		ug/g	
			o-Xylene	2013/09/24	ND, RDL=0.020		ug/g	
			Trichlorofluoromethane (FREON 11)	2013/09/24	ND, RDL=0.050		ug/g	

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.

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: TB3F6835

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 not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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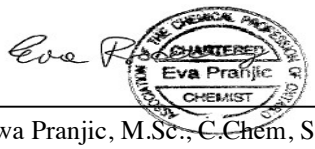
Validation Signature Page

Maxxam Job #: B3F6835

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

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

Yuan Zhou, gc\ms Technician

==========

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Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Site#: CSST
Site Location: CUMBERLAND @ ST. ANDREW
Your C.O.C. #: 0017677

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/09/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3G0494
Received: 2013/09/23, 15:56

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	1	N/A	2013/09/27	CAM SOP - 00301	EPA 8270
1,3-Dichloropropene Sum	1	N/A	2013/09/30	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2013/09/25	2013/09/26	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil (1)	1	2013/09/27	2013/09/27	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	1	2013/09/27	2013/09/27	CAM SOP-00447	EPA 6020
Moisture (1)	1	N/A	2013/09/26	CAM SOP-00445	R.Carter,1993
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2013/09/25	2013/09/26	CAM SOP - 00318	EPA 8270
Volatile Organic Compounds in Soil	1	2013/09/24	2013/09/27	OTT SOP-00005	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Site#: CSST
Site Location: CUMBERLAND @ ST. ANDREW
Your C.O.C. #: 0017677

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/09/30

CERTIFICATE OF ANALYSIS

* 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.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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Total cover pages: 2

Maxxam Job #: B3G0494
Report Date: 2013/09/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CUMBERLAND @ ST. ANDREW
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 PAHS (SOIL)

Maxxam ID		TE2199		
Sampling Date		2013/09/23		
COC Number		0017677		
	Units	**BH13-106 SS1**	**RDL**	**QC Batch**
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	3358863
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	ND	0.0050	3363312
Acenaphthylene	ug/g	ND	0.0050	3363312
Anthracene	ug/g	ND	0.0050	3363312
Benzo(a)anthracene	ug/g	ND	0.0050	3363312
Benzo(a)pyrene	ug/g	ND	0.0050	3363312
Benzo(b/j)fluoranthene	ug/g	ND	0.0050	3363312
Benzo(g,h,i)perylene	ug/g	ND	0.0050	3363312
Benzo(k)fluoranthene	ug/g	ND	0.0050	3363312
Chrysene	ug/g	ND	0.0050	3363312
Dibenz(a,h)anthracene	ug/g	ND	0.0050	3363312
Fluoranthene	ug/g	ND	0.0050	3363312
Fluorene	ug/g	ND	0.0050	3363312
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.0050	3363312
1-Methylnaphthalene	ug/g	ND	0.0050	3363312
2-Methylnaphthalene	ug/g	ND	0.0050	3363312
Naphthalene	ug/g	ND	0.0050	3363312
Phenanthrene	ug/g	ND	0.0050	3363312
Pyrene	ug/g	ND	0.0050	3363312
Surrogate Recovery (%)				
D10-Anthracene	%	88		3363312
D14-Terphenyl (FS)	%	88		3363312
D8-Acenaphthylene	%	87		3363312

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

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Maxxam Job #: B3G0494
Report Date: 2013/09/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CUMBERLAND @ ST. ANDREW
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		TE2199		
Sampling Date		2013/09/23		
COC Number		0017677		
	Units	**BH13-106 SS1**	**RDL**	**QC Batch**
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.071	3359785
Volatile Organics				
Acetone (2-Propanone)	ug/g	ND	0.50	3360566
Benzene	ug/g	ND	0.020	3360566
Bromodichloromethane	ug/g	ND	0.050	3360566
Bromoform	ug/g	ND	0.050	3360566
Bromomethane	ug/g	ND	0.050	3360566
Carbon Tetrachloride	ug/g	ND	0.050	3360566
Chlorobenzene	ug/g	ND	0.050	3360566
Chloroform	ug/g	ND	0.050	3360566
Dibromochloromethane	ug/g	ND	0.050	3360566
1,2-Dichlorobenzene	ug/g	ND	0.050	3360566
1,3-Dichlorobenzene	ug/g	ND	0.050	3360566
1,4-Dichlorobenzene	ug/g	ND	0.050	3360566
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	3360566
1,1-Dichloroethane	ug/g	ND	0.050	3360566
1,2-Dichloroethane	ug/g	ND	0.050	3360566
1,1-Dichloroethylene	ug/g	ND	0.050	3360566
cis-1,2-Dichloroethylene	ug/g	ND	0.050	3360566
trans-1,2-Dichloroethylene	ug/g	ND	0.050	3360566
1,2-Dichloropropane	ug/g	ND	0.050	3360566
cis-1,3-Dichloropropene	ug/g	ND	0.050	3360566
trans-1,3-Dichloropropene	ug/g	ND	0.050	3360566
Ethylbenzene	ug/g	ND	0.020	3360566
Ethylene Dibromide	ug/g	ND	0.050	3360566
Hexane	ug/g	ND	0.050	3360566
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	3360566
Methyl Isobutyl Ketone	ug/g	ND	0.50	3360566
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	3360566
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	3360566
Styrene	ug/g	ND	0.050	3360566

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

Maxxam Job #: B3G0494
Report Date: 2013/09/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CUMBERLAND @ ST. ANDREW
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		TE2199		
Sampling Date		2013/09/23		
COC Number		0017677		
	Units	**BH13-106 SS1**	**RDL**	**QC Batch**
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	3360566
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	3360566
Tetrachloroethylene	ug/g	ND	0.050	3360566
Toluene	ug/g	ND	0.020	3360566
1,1,1-Trichloroethane	ug/g	ND	0.050	3360566
1,1,2-Trichloroethane	ug/g	ND	0.050	3360566
Trichloroethylene	ug/g	ND	0.050	3360566
Vinyl Chloride	ug/g	ND	0.020	3360566
p+m-Xylene	ug/g	ND	0.020	3360566
o-Xylene	ug/g	ND	0.020	3360566
Xylene (Total)	ug/g	ND	0.020	3360566
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	3360566
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	93		3360566
D4-1,2-Dichloroethane	%	123		3360566
D8-Toluene	%	85		3360566

ND = Not detected
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Maxxam Job #: B3G0494
Report Date: 2013/09/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CUMBERLAND @ ST. ANDREW
Your P.O. #: 16300R-20
Sampler Initials: AW

RESULTS OF ANALYSES OF SOIL

Maxxam ID		TE2199		
Sampling Date		2013/09/23		
COC Number		0017677		
	Units	**BH13-106 SS1**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	30	1.0	3364537

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2013/09/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CUMBERLAND @ ST. ANDREW
Your P.O. #: 16300R-20
Sampler Initials: AW

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TE2199		
Sampling Date		2013/09/23		
COC Number		0017677		
	Units	**BH13-106 SS1**	**RDL**	**QC Batch**
Metals				
Acid Extractable Aluminum (Al)	ug/g	16000	50	3365684
Acid Extractable Antimony (Sb)	ug/g	ND	0.20	3365684
Acid Extractable Arsenic (As)	ug/g	4.2	1.0	3365684
Acid Extractable Barium (Ba)	ug/g	170	0.50	3365684
Acid Extractable Beryllium (Be)	ug/g	0.56	0.20	3365684
Acid Extractable Cadmium (Cd)	ug/g	ND	0.10	3365684
Acid Extractable Calcium (Ca)	ug/g	28000	50	3365684
Acid Extractable Chromium (Cr)	ug/g	38	1.0	3365684
Acid Extractable Cobalt (Co)	ug/g	13	0.10	3365684
Acid Extractable Copper (Cu)	ug/g	25	0.50	3365684
Acid Extractable Iron (Fe)	ug/g	28000	50	3365684
Acid Extractable Lead (Pb)	ug/g	5.9	1.0	3365684
Acid Extractable Magnesium (Mg)	ug/g	16000	50	3365684
Acid Extractable Manganese (Mn)	ug/g	530	1.0	3365684
Acid Extractable Molybdenum (Mo)	ug/g	1.2	0.50	3365684
Acid Extractable Nickel (Ni)	ug/g	26	0.50	3365684
Acid Extractable Phosphorus (P)	ug/g	1100	50	3365684
Acid Extractable Potassium (K)	ug/g	5800	200	3365684
Acid Extractable Selenium (Se)	ug/g	ND	0.50	3365684
Acid Extractable Silver (Ag)	ug/g	ND	0.20	3365684
Acid Extractable Sodium (Na)	ug/g	1500	100	3365684
Acid Extractable Strontium (Sr)	ug/g	67	1.0	3365684
Acid Extractable Thallium (Tl)	ug/g	0.23	0.050	3365684
Acid Extractable Vanadium (V)	ug/g	56	5.0	3365684
Acid Extractable Zinc (Zn)	ug/g	73	5.0	3365684

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

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Maxxam Job #: B3G0494
Report Date: 2013/09/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CUMBERLAND @ ST. ANDREW
Your P.O. #: 16300R-20
Sampler Initials: AW

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		TE2199		
Sampling Date		2013/09/23		
COC Number		0017677		
	Units	**BH13-106 SS1**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/g	ND	10	3362267
F1 (C6-C10) - BTEX	ug/g	ND	10	3362267
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	ND	10	3365317
F3 (C16-C34 Hydrocarbons)	ug/g	ND	50	3365317
F4 (C34-C50 Hydrocarbons)	ug/g	ND	50	3365317
Reached Baseline at C50	ug/g	Yes		3365317
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	106		3362267
4-Bromofluorobenzene	%	98		3362267
D10-Ethylbenzene	%	85		3362267
D4-1,2-Dichloroethane	%	111		3362267
o-Terphenyl	%	94		3365317

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

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Maxxam Job #: B3G0494
Report Date: 2013/09/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CUMBERLAND @ ST. ANDREW
Your P.O. #: 16300R-20
Sampler Initials: AW

Test Summary

Maxxam ID TE2199
Sample ID BH13-106 SS1
Matrix Soil

Collected 2013/09/23
Shipped
Received 2013/09/23

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3358863	N/A	2013/09/27	Automated Statchk
1,3-Dichloropropene Sum	CALC	3359785	N/A	2013/09/30	Paul Rubinato
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3362267	2013/09/25	2013/09/26	Paul Rubinato
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3365317	2013/09/27	2013/09/27	Jolanta Kawzowicz
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3365684	2013/09/27	2013/09/27	Viviana Canzonieri
Moisture	BAL	3364537	N/A	2013/09/26	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3363312	2013/09/25	2013/09/26	Lingyun Feng
Volatile Organic Compounds in Soil	P&T/MS	3360566	2013/09/24	2013/09/27	Paul Rubinato

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.maxxamanalytics.com

Maxxam Job #: B3G0494
Report Date: 2013/09/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CUMBERLAND @ ST. ANDREW
Your P.O. #: 16300R-20
Sampler Initials: AW

Package 1	16.0°C

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

GENERAL COMMENTS

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060.400.103
P.O. #: 16300R-20
Site Location: CUMBERLAND @ ST. ANDREW

Quality Assurance Report

Maxxam Job Number: TB3G0494

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	Spiked Blank	4-Bromofluorobenzene	2013/09/24		113	%	60 - 140
			D4-1,2-Dichloroethane	2013/09/24		117	%	60 - 140
			D8-Toluene	2013/09/24		96	%	60 - 140
			Acetone (2-Propanone)	2013/09/24		114	%	60 - 140
		RPD	Acetone (2-Propanone)	2013/09/24	3.8		%	50
		Spiked Blank	Benzene	2013/09/24		99	%	60 - 140
		RPD	Benzene	2013/09/24	1.0		%	50
		Spiked Blank	Bromodichloromethane	2013/09/24		111	%	60 - 140
		RPD	Bromodichloromethane	2013/09/24	1.8		%	50
		Spiked Blank	Bromoform	2013/09/24		115	%	60 - 140
		RPD	Bromoform	2013/09/24	5.2		%	50
		Spiked Blank	Bromomethane	2013/09/24		89	%	60 - 140
		RPD	Bromomethane	2013/09/24	12.6		%	50
		Spiked Blank	Carbon Tetrachloride	2013/09/24		111	%	60 - 140
		RPD	Carbon Tetrachloride	2013/09/24	1.3		%	50
		Spiked Blank	Chlorobenzene	2013/09/24		97	%	60 - 140
		RPD	Chlorobenzene	2013/09/24	2.7		%	50
		Spiked Blank	Chloroform	2013/09/24		108	%	60 - 140
		RPD	Chloroform	2013/09/24	2.1		%	50
		Spiked Blank	Dibromochloromethane	2013/09/24		109	%	60 - 140
		RPD	Dibromochloromethane	2013/09/24	6.5		%	50
		Spiked Blank	1,2-Dichlorobenzene	2013/09/24		95	%	60 - 140
		RPD	1,2-Dichlorobenzene	2013/09/24	7.6		%	50
		Spiked Blank	1,3-Dichlorobenzene	2013/09/24		90	%	60 - 140
		RPD	1,3-Dichlorobenzene	2013/09/24	6.7		%	50
		Spiked Blank	1,4-Dichlorobenzene	2013/09/24		96	%	60 - 140
		RPD	1,4-Dichlorobenzene	2013/09/24	6.2		%	50
		Spiked Blank	Dichlorodifluoromethane (FREON 12)	2013/09/24		102	%	60 - 140
		RPD	Dichlorodifluoromethane (FREON 12)	2013/09/24	2.4		%	50
		Spiked Blank	1,1-Dichloroethane	2013/09/24		100	%	60 - 140
		RPD	1,1-Dichloroethane	2013/09/24	1.3		%	50
		Spiked Blank	1,2-Dichloroethane	2013/09/24		115	%	60 - 140
		RPD	1,2-Dichloroethane	2013/09/24	0.8		%	50
		Spiked Blank	1,1-Dichloroethylene	2013/09/24		106	%	60 - 140
		RPD	1,1-Dichloroethylene	2013/09/24	3.3		%	50
		Spiked Blank	cis-1,2-Dichloroethylene	2013/09/24		101	%	60 - 140
		RPD	cis-1,2-Dichloroethylene	2013/09/24	0.2		%	50
		Spiked Blank	trans-1,2-Dichloroethylene	2013/09/24		96	%	60 - 140
		RPD	trans-1,2-Dichloroethylene	2013/09/24	2.3		%	50
		Spiked Blank	1,2-Dichloropropane	2013/09/24		105	%	60 - 140
		RPD	1,2-Dichloropropane	2013/09/24	4.4		%	50
		Spiked Blank	cis-1,3-Dichloropropene	2013/09/24		104	%	60 - 140
		RPD	cis-1,3-Dichloropropene	2013/09/24	1.4		%	50
		Spiked Blank	trans-1,3-Dichloropropene	2013/09/24		96	%	60 - 140
		RPD	trans-1,3-Dichloropropene	2013/09/24	0.2		%	50
		Spiked Blank	Ethylbenzene	2013/09/24		88	%	60 - 140
		RPD	Ethylbenzene	2013/09/24	6.6		%	50
		Spiked Blank	Ethylene Dibromide	2013/09/24		106	%	60 - 140
		RPD	Ethylene Dibromide	2013/09/24	5.5		%	50
		Spiked Blank	Hexane	2013/09/24		83	%	60 - 140
		RPD	Hexane	2013/09/24	1.2		%	50
		Spiked Blank	Methylene Chloride(Dichloromethane)	2013/09/24		110	%	60 - 140
		RPD	Methylene Chloride(Dichloromethane)	2013/09/24	0.06		%	50
		Spiked Blank	Methyl Isobutyl Ketone	2013/09/24		117	%	60 - 140
		RPD	Methyl Isobutyl Ketone	2013/09/24	2.7		%	50

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Quality Assurance Report (Continued)

Maxxam Job Number: TB3G0494

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	Spiked Blank	Methyl Ethyl Ketone (2-Butanone)	2013/09/24		121	%	60 - 140
		RPD	Methyl Ethyl Ketone (2-Butanone)	2013/09/24	3.4		%	50
		Spiked Blank	Methyl t-butyl ether (MTBE)	2013/09/24		102	%	60 - 140
		RPD	Methyl t-butyl ether (MTBE)	2013/09/24	1.7		%	50
		Spiked Blank	Styrene	2013/09/24		100	%	60 - 140
		RPD	Styrene	2013/09/24	7.6		%	50
		Spiked Blank	1,1,1,2-Tetrachloroethane	2013/09/24		103	%	60 - 140
		RPD	1,1,1,2-Tetrachloroethane	2013/09/24	6.7		%	50
		Spiked Blank	1,1,2,2-Tetrachloroethane	2013/09/24		108	%	60 - 140
		RPD	1,1,2,2-Tetrachloroethane	2013/09/24	0.04		%	50
		Spiked Blank	Tetrachloroethylene	2013/09/24		93	%	60 - 140
		RPD	Tetrachloroethylene	2013/09/24	8.1		%	50
		Spiked Blank	Toluene	2013/09/24		93	%	60 - 140
		RPD	Toluene	2013/09/24	7.6		%	50
		Spiked Blank	1,1,1-Trichloroethane	2013/09/24		105	%	60 - 140
		RPD	1,1,1-Trichloroethane	2013/09/24	1.2		%	50
		Spiked Blank	1,1,2-Trichloroethane	2013/09/24		104	%	60 - 140
		RPD	1,1,2-Trichloroethane	2013/09/24	6.3		%	50
		Spiked Blank	Trichloroethylene	2013/09/24		101	%	60 - 140
		RPD	Trichloroethylene	2013/09/24	4.9		%	50
		Spiked Blank	Vinyl Chloride	2013/09/24		99	%	60 - 140
		RPD	Vinyl Chloride	2013/09/24	4.2		%	50
		Spiked Blank	p+m-Xylene	2013/09/24		99	%	60 - 140
		RPD	p+m-Xylene	2013/09/24	6.4		%	50
		Spiked Blank	o-Xylene	2013/09/24		80	%	60 - 140
		RPD	o-Xylene	2013/09/24	7.8		%	50
		Spiked Blank	Trichlorofluoromethane (FREON 11)	2013/09/24		109	%	60 - 140
		RPD	Trichlorofluoromethane (FREON 11)	2013/09/24	0.5		%	50
		Method Blank	4-Bromofluorobenzene	2013/09/24		100	%	60 - 140
			D4-1,2-Dichloroethane	2013/09/24		117	%	60 - 140
			D8-Toluene	2013/09/24		85	%	60 - 140
			Acetone (2-Propanone)	2013/09/24	ND, RDL=0.50		ug/g	
			Benzene	2013/09/24	ND, RDL=0.020		ug/g	
			Bromodichloromethane	2013/09/24	ND, RDL=0.050		ug/g	
			Bromoform	2013/09/24	ND, RDL=0.050		ug/g	
			Bromomethane	2013/09/24	ND, RDL=0.050		ug/g	
			Carbon Tetrachloride	2013/09/24	ND, RDL=0.050		ug/g	
			Chlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			Chloroform	2013/09/24	ND, RDL=0.050		ug/g	
			Dibromochloromethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			1,3-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			1,4-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2013/09/24	ND, RDL=0.050		ug/g	
			1,1-Dichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			cis-1,2-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			trans-1,2-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichloropropane	2013/09/24	ND, RDL=0.050		ug/g	
			cis-1,3-Dichloropropene	2013/09/24	ND, RDL=0.050		ug/g	
			trans-1,3-Dichloropropene	2013/09/24	ND, RDL=0.050		ug/g	
			Ethylbenzene	2013/09/24	ND, RDL=0.020		ug/g	
			Ethylene Dibromide	2013/09/24	ND, RDL=0.050		ug/g	
			Hexane	2013/09/24	ND, RDL=0.050		ug/g	

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Quality Assurance Report (Continued)

Maxxam Job Number: TB3G0494

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	Method Blank	Methylene Chloride(Dichloromethane)	2013/09/24	ND, RDL=0.050		ug/g	
			Methyl Isobutyl Ketone	2013/09/24	ND, RDL=0.50		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2013/09/24	ND, RDL=0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2013/09/24	ND, RDL=0.050		ug/g	
			Styrene	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			Tetrachloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			Toluene	2013/09/24	ND, RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,2-Trichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			Trichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			Vinyl Chloride	2013/09/24	ND, RDL=0.020		ug/g	
			p+m-Xylene	2013/09/24	ND, RDL=0.020		ug/g	
			o-Xylene	2013/09/24	ND, RDL=0.020		ug/g	
			Trichlorofluoromethane (FREON 11)	2013/09/24	ND, RDL=0.050		ug/g	
3362267	PRB	Matrix Spike	1,4-Difluorobenzene	2013/09/26		106	%	60 - 140
			4-Bromofluorobenzene	2013/09/26		101	%	60 - 140
			D10-Ethylbenzene	2013/09/26		88	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/26		110	%	60 - 140
			F1 (C6-C10)	2013/09/26		108	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2013/09/26		106	%	60 - 140
			4-Bromofluorobenzene	2013/09/26		101	%	60 - 140
			D10-Ethylbenzene	2013/09/26		95	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/26		109	%	60 - 140
			F1 (C6-C10)	2013/09/26		99	%	80 - 120
		Method Blank	1,4-Difluorobenzene	2013/09/26		106	%	60 - 140
			4-Bromofluorobenzene	2013/09/26		100	%	60 - 140
			D10-Ethylbenzene	2013/09/26		88	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/26		110	%	60 - 140
			F1 (C6-C10)	2013/09/26	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2013/09/26	ND, RDL=10		ug/g	
		RPD	F1 (C6-C10)	2013/09/26	NC		%	50
			F1 (C6-C10) - BTEX	2013/09/26	NC		%	50
3363312	LFE	Matrix Spike	D10-Anthracene	2013/09/26		85	%	50 - 130
			D14-Terphenyl (FS)	2013/09/26		84	%	50 - 130
			D8-Acenaphthylene	2013/09/26		79	%	50 - 130
			Acenaphthene	2013/09/26		87	%	50 - 130
			Acenaphthylene	2013/09/26		87	%	50 - 130
			Anthracene	2013/09/26		92	%	50 - 130
			Benzo(a)anthracene	2013/09/26		100	%	50 - 130
			Benzo(a)pyrene	2013/09/26		89	%	50 - 130
			Benzo(b/j)fluoranthene	2013/09/26		85	%	50 - 130
			Benzo(g,h,i)perylene	2013/09/26		69	%	50 - 130
			Benzo(k)fluoranthene	2013/09/26		104	%	50 - 130
			Chrysene	2013/09/26		93	%	50 - 130
			Dibenz(a,h)anthracene	2013/09/26		78	%	50 - 130
			Fluoranthene	2013/09/26		93	%	50 - 130
			Fluorene	2013/09/26		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/09/26		79	%	50 - 130
			1-Methylnaphthalene	2013/09/26		85	%	50 - 130
			2-Methylnaphthalene	2013/09/26		82	%	50 - 130
			Naphthalene	2013/09/26		87	%	50 - 130
			Phenanthrene	2013/09/26		89	%	50 - 130
			Pyrene	2013/09/26		92	%	50 - 130

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Quality Assurance Report (Continued)

Maxxam Job Number: TB3G0494

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3363312	LFE	Spiked Blank	D10-Anthracene	2013/09/26		77	%	50 - 130
			D14-Terphenyl (FS)	2013/09/26		81	%	50 - 130
			D8-Acenaphthylene	2013/09/26		74	%	50 - 130
			Acenaphthene	2013/09/26		83	%	50 - 130
			Acenaphthylene	2013/09/26		80	%	50 - 130
			Anthracene	2013/09/26		85	%	50 - 130
			Benzo(a)anthracene	2013/09/26		94	%	50 - 130
			Benzo(a)pyrene	2013/09/26		87	%	50 - 130
			Benzo(b/j)fluoranthene	2013/09/26		85	%	50 - 130
			Benzo(g,h,i)perylene	2013/09/26		74	%	50 - 130
			Benzo(k)fluoranthene	2013/09/26		106	%	50 - 130
			Chrysene	2013/09/26		91	%	50 - 130
			Dibenz(a,h)anthracene	2013/09/26		79	%	50 - 130
			Fluoranthene	2013/09/26		87	%	50 - 130
			Fluorene	2013/09/26		81	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/09/26		83	%	50 - 130
			1-Methylnaphthalene	2013/09/26		79	%	50 - 130
			2-Methylnaphthalene	2013/09/26		77	%	50 - 130
			Naphthalene	2013/09/26		82	%	50 - 130
			Phenanthrene	2013/09/26		83	%	50 - 130
			Pyrene	2013/09/26		87	%	50 - 130
		Method Blank	D10-Anthracene	2013/09/26		82	%	50 - 130
			D14-Terphenyl (FS)	2013/09/26		87	%	50 - 130
			D8-Acenaphthylene	2013/09/26		77	%	50 - 130
			Acenaphthene	2013/09/26	ND, RDL=0.0050		ug/g	
			Acenaphthylene	2013/09/26	ND, RDL=0.0050		ug/g	
			Anthracene	2013/09/26	ND, RDL=0.0050		ug/g	
			Benzo(a)anthracene	2013/09/26	ND, RDL=0.0050		ug/g	
			Benzo(a)pyrene	2013/09/26	ND, RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2013/09/26	ND, RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2013/09/26	ND, RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2013/09/26	ND, RDL=0.0050		ug/g	
			Chrysene	2013/09/26	ND, RDL=0.0050		ug/g	
			Dibenz(a,h)anthracene	2013/09/26	ND, RDL=0.0050		ug/g	
			Fluoranthene	2013/09/26	ND, RDL=0.0050		ug/g	
			Fluorene	2013/09/26	ND, RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2013/09/26	ND, RDL=0.0050		ug/g	
			1-Methylnaphthalene	2013/09/26	ND, RDL=0.0050		ug/g	
			2-Methylnaphthalene	2013/09/26	ND, RDL=0.0050		ug/g	
			Naphthalene	2013/09/26	ND, RDL=0.0050		ug/g	
			Phenanthrene	2013/09/26	ND, RDL=0.0050		ug/g	
			Pyrene	2013/09/26	ND, RDL=0.0050		ug/g	
		RPD	Acenaphthene	2013/09/26	NC		%	40
			Acenaphthylene	2013/09/26	NC		%	40
			Anthracene	2013/09/26	NC		%	40
			Benzo(a)anthracene	2013/09/26	NC		%	40
			Benzo(a)pyrene	2013/09/26	NC		%	40
			Benzo(b/j)fluoranthene	2013/09/26	NC		%	40
			Benzo(g,h,i)perylene	2013/09/26	NC		%	40
			Benzo(k)fluoranthene	2013/09/26	NC		%	40
			Chrysene	2013/09/26	NC		%	40
			Dibenz(a,h)anthracene	2013/09/26	NC		%	40
			Fluoranthene	2013/09/26	NC		%	40
			Fluorene	2013/09/26	NC		%	40
			Indeno(1,2,3-cd)pyrene	2013/09/26	NC		%	40

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Quality Assurance Report (Continued)

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3363312	LFE	RPD	1-Methylnaphthalene	2013/09/26	NC		%	40
			2-Methylnaphthalene	2013/09/26	NC		%	40
			Naphthalene	2013/09/26	NC		%	40
			Phenanthrene	2013/09/26	NC		%	40
			Pyrene	2013/09/26	NC		%	40
3364537	JV1	RPD	Moisture	2013/09/26	6.3		%	20
3365317	JKA	Matrix Spike	o-Terphenyl	2013/09/27		96	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/27		98	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2013/09/27		100	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2013/09/27		105	%	50 - 130
		Spiked Blank	o-Terphenyl	2013/09/27		95	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/27		95	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2013/09/27		97	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2013/09/27		102	%	80 - 120
		Method Blank	o-Terphenyl	2013/09/27		98	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/27	ND, RDL=10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2013/09/27	ND, RDL=50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2013/09/27	ND, RDL=50		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2013/09/27	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2013/09/27	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2013/09/27	NC		%	30
3365684	VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2013/09/27		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2013/09/27		90	%	75 - 125
			Acid Extractable Arsenic (As)	2013/09/27		96	%	75 - 125
			Acid Extractable Barium (Ba)	2013/09/27		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2013/09/27		96	%	75 - 125
			Acid Extractable Cadmium (Cd)	2013/09/27		96	%	75 - 125
			Acid Extractable Calcium (Ca)	2013/09/27		NC	%	75 - 125
			Acid Extractable Chromium (Cr)	2013/09/27		97	%	75 - 125
			Acid Extractable Cobalt (Co)	2013/09/27		97	%	75 - 125
			Acid Extractable Copper (Cu)	2013/09/27		95	%	75 - 125
			Acid Extractable Iron (Fe)	2013/09/27		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2013/09/27		NC	%	75 - 125
			Acid Extractable Magnesium (Mg)	2013/09/27		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2013/09/27		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2013/09/27		98	%	75 - 125
			Acid Extractable Nickel (Ni)	2013/09/27		99	%	75 - 125
			Acid Extractable Phosphorus (P)	2013/09/27		NC	%	75 - 125
			Acid Extractable Potassium (K)	2013/09/27		NC	%	75 - 125
			Acid Extractable Selenium (Se)	2013/09/27		99	%	75 - 125
			Acid Extractable Silver (Ag)	2013/09/27		100	%	75 - 125
			Acid Extractable Sodium (Na)	2013/09/27		95	%	75 - 125
			Acid Extractable Strontium (Sr)	2013/09/27		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2013/09/27		92	%	75 - 125
			Acid Extractable Vanadium (V)	2013/09/27		99	%	75 - 125
			Acid Extractable Zinc (Zn)	2013/09/27		NC	%	75 - 125
		Spiked Blank	Acid Extractable Aluminum (Al)	2013/09/27		106	%	80 - 120
			Acid Extractable Antimony (Sb)	2013/09/27		97	%	80 - 120
			Acid Extractable Arsenic (As)	2013/09/27		95	%	80 - 120
			Acid Extractable Barium (Ba)	2013/09/27		97	%	80 - 120
			Acid Extractable Beryllium (Be)	2013/09/27		98	%	80 - 120
			Acid Extractable Cadmium (Cd)	2013/09/27		96	%	80 - 120
			Acid Extractable Calcium (Ca)	2013/09/27		101	%	80 - 120
			Acid Extractable Chromium (Cr)	2013/09/27		92	%	80 - 120
			Acid Extractable Cobalt (Co)	2013/09/27		96	%	80 - 120

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.maxxamanalytics.com

Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060.400.103
P.O. #: 16300R-20
Site Location: CUMBERLAND @ ST. ANDREW

Quality Assurance Report (Continued)

Maxxam Job Number: TB3G0494

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3365684	VIV	Spiked Blank	Acid Extractable Copper (Cu)	2013/09/27		93	%	80 - 120
			Acid Extractable Iron (Fe)	2013/09/27		99	%	80 - 120
			Acid Extractable Lead (Pb)	2013/09/27		99	%	80 - 120
			Acid Extractable Magnesium (Mg)	2013/09/27		94	%	80 - 120
			Acid Extractable Manganese (Mn)	2013/09/27		94	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2013/09/27		97	%	80 - 120
			Acid Extractable Nickel (Ni)	2013/09/27		95	%	80 - 120
			Acid Extractable Phosphorus (P)	2013/09/27		91	%	80 - 120
			Acid Extractable Potassium (K)	2013/09/27		91	%	80 - 120
			Acid Extractable Selenium (Se)	2013/09/27		100	%	80 - 120
			Acid Extractable Silver (Ag)	2013/09/27		99	%	80 - 120
			Acid Extractable Sodium (Na)	2013/09/27		94	%	80 - 120
			Acid Extractable Strontium (Sr)	2013/09/27		98	%	80 - 120
			Acid Extractable Thallium (Tl)	2013/09/27		94	%	80 - 120
			Acid Extractable Vanadium (V)	2013/09/27		94	%	80 - 120
			Acid Extractable Zinc (Zn)	2013/09/27		96	%	80 - 120
		Method Blank	Acid Extractable Aluminum (Al)	2013/09/27	ND, RDL=50		ug/g	
			Acid Extractable Antimony (Sb)	2013/09/27	ND, RDL=0.20		ug/g	
			Acid Extractable Arsenic (As)	2013/09/27	ND, RDL=1.0		ug/g	
			Acid Extractable Barium (Ba)	2013/09/27	ND, RDL=0.50		ug/g	
			Acid Extractable Beryllium (Be)	2013/09/27	ND, RDL=0.20		ug/g	
			Acid Extractable Cadmium (Cd)	2013/09/27	ND, RDL=0.10		ug/g	
			Acid Extractable Calcium (Ca)	2013/09/27	ND, RDL=50		ug/g	
			Acid Extractable Chromium (Cr)	2013/09/27	ND, RDL=1.0		ug/g	
			Acid Extractable Cobalt (Co)	2013/09/27	ND, RDL=0.10		ug/g	
			Acid Extractable Copper (Cu)	2013/09/27	0.58, RDL=0.50		ug/g	
			Acid Extractable Iron (Fe)	2013/09/27	ND, RDL=50		ug/g	
			Acid Extractable Lead (Pb)	2013/09/27	ND, RDL=1.0		ug/g	
			Acid Extractable Magnesium (Mg)	2013/09/27	ND, RDL=50		ug/g	
			Acid Extractable Manganese (Mn)	2013/09/27	ND, RDL=1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2013/09/27	ND, RDL=0.50		ug/g	
			Acid Extractable Nickel (Ni)	2013/09/27	ND, RDL=0.50		ug/g	
			Acid Extractable Phosphorus (P)	2013/09/27	ND, RDL=50		ug/g	
			Acid Extractable Potassium (K)	2013/09/27	ND, RDL=200		ug/g	
			Acid Extractable Selenium (Se)	2013/09/27	ND, RDL=0.50		ug/g	
			Acid Extractable Silver (Ag)	2013/09/27	ND, RDL=0.20		ug/g	
			Acid Extractable Sodium (Na)	2013/09/27	ND, RDL=100		ug/g	
			Acid Extractable Strontium (Sr)	2013/09/27	ND, RDL=1.0		ug/g	
			Acid Extractable Thallium (Tl)	2013/09/27	ND, RDL=0.050		ug/g	
			Acid Extractable Vanadium (V)	2013/09/27	ND, RDL=5.0		ug/g	
			Acid Extractable Zinc (Zn)	2013/09/27	ND, RDL=5.0		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2013/09/27	NC		%	30
			Acid Extractable Arsenic (As)	2013/09/27	NC		%	30
			Acid Extractable Barium (Ba)	2013/09/27	3.7		%	30
			Acid Extractable Beryllium (Be)	2013/09/27	NC		%	30
			Acid Extractable Cadmium (Cd)	2013/09/27	2.8		%	30
			Acid Extractable Chromium (Cr)	2013/09/27	3.9		%	30
			Acid Extractable Cobalt (Co)	2013/09/27	4.4		%	30
			Acid Extractable Copper (Cu)	2013/09/27	3.7		%	30
			Acid Extractable Lead (Pb)	2013/09/27	53.7 (1)		%	30
			Acid Extractable Molybdenum (Mo)	2013/09/27	NC		%	30
			Acid Extractable Nickel (Ni)	2013/09/27	6.8		%	30
			Acid Extractable Selenium (Se)	2013/09/27	NC		%	30
			Acid Extractable Silver (Ag)	2013/09/27	NC		%	30
			Acid Extractable Thallium (Tl)	2013/09/27	NC		%	30

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060.400.103
P.O. #: 16300R-20
Site Location: CUMBERLAND @ ST. ANDREW

Quality Assurance Report (Continued)

Maxxam Job Number: TB3G0494

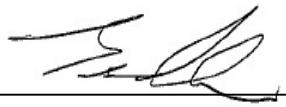
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3365684	VIV	RPD	Acid Extractable Vanadium (V)	2013/09/27	NC		%	30
			Acid Extractable Zinc (Zn)	2013/09/27	0.8		%	30

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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

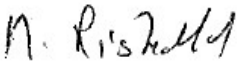
Validation Signature Page

Maxxam Job #: B3G0494

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

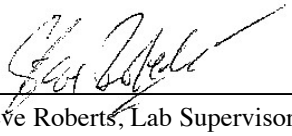


Brad Newman, Scientific Specialist

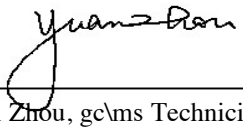


Medhat Riskallah, Manager, Hydrocarbon Department

Paul Rubinato, Analyst, Maxxam Analytics



Steve Roberts, Lab Supervisor, Ottawa



Yuan Zhou, gc\ms Technician

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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.maxxamanalytics.com

Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Site Location: CSST CUMBERLAND MURRAY ST
Your C.O.C. #: 43681402, 436814-02-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/10/01

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3G1923
Received: 2013/09/25, 09:25

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	1	N/A	2013/10/01	CAM SOP - 00301	EPA 8270
1,3-Dichloropropene Sum	1	N/A	2013/10/01	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2013/09/26	2013/09/26	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/09/30	2013/09/30	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	1	2013/09/27	2013/09/27	CAM SOP-00447	EPA 6020
MOISTURE	1	N/A	2013/10/01	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2013/09/28	2013/09/28	CAM SOP - 00318	EPA 8270
pH CaCl2 EXTRACT (1)	1	2013/09/30	2013/09/30	CAM SOP-00413	SM 4500H+ B
Volatile Organic Compounds in Soil	1	2013/09/25	2013/09/27	OTT SOP-00005	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed

Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Site Location: CSST CUMBERLAND MURRAY ST
Your C.O.C. #: 43681402, 436814-02-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/10/01

CERTIFICATE OF ANALYSIS

or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* 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.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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.

Total cover pages: 2

Maxxam Job #: B3G1923
Report Date: 2013/10/01

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CSST CUMBERLAND MURRAY ST
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 PAHS (SOIL)

Maxxam ID		TE9453		
Sampling Date		2013/09/24 15:00		
COC Number		436814-02-01		
	Units	**BH13-105 SS1**	**RDL**	**QC Batch**
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	3362156
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	ND	0.0050	3367069
Acenaphthylene	ug/g	ND	0.0050	3367069
Anthracene	ug/g	ND	0.0050	3367069
Benzo(a)anthracene	ug/g	ND	0.0050	3367069
Benzo(a)pyrene	ug/g	ND	0.0050	3367069
Benzo(b/j)fluoranthene	ug/g	ND	0.0050	3367069
Benzo(g,h,i)perylene	ug/g	ND	0.0050	3367069
Benzo(k)fluoranthene	ug/g	ND	0.0050	3367069
Chrysene	ug/g	ND	0.0050	3367069
Dibenz(a,h)anthracene	ug/g	ND	0.0050	3367069
Fluoranthene	ug/g	ND	0.0050	3367069
Fluorene	ug/g	ND	0.0050	3367069
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.0050	3367069
1-Methylnaphthalene	ug/g	ND	0.0050	3367069
2-Methylnaphthalene	ug/g	ND	0.0050	3367069
Naphthalene	ug/g	ND	0.0050	3367069
Phenanthrene	ug/g	ND	0.0050	3367069
Pyrene	ug/g	ND	0.0050	3367069
Surrogate Recovery (%)				
D10-Anthracene	%	78		3367069
D14-Terphenyl (FS)	%	85		3367069
D8-Acenaphthylene	%	71		3367069

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

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Maxxam Job #: B3G1923
Report Date: 2013/10/01

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CSST CUMBERLAND MURRAY ST
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		TE9453		
Sampling Date		2013/09/24 15:00		
COC Number		436814-02-01		
	Units	**BH13-105 SS1**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/g	ND	10	3362267
F1 (C6-C10) - BTEX	ug/g	ND	10	3362267
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	ND	10	3367848
F3 (C16-C34 Hydrocarbons)	ug/g	ND	10	3367848
F4 (C34-C50 Hydrocarbons)	ug/g	ND	10	3367848
Reached Baseline at C50	ug/g	Yes		3367848
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	107		3362267
4-Bromofluorobenzene	%	100		3362267
D10-Ethylbenzene	%	91		3362267
D4-1,2-Dichloroethane	%	109		3362267
o-Terphenyl	%	100		3367848

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

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Maxxam Job #: B3G1923
Report Date: 2013/10/01

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CSST CUMBERLAND MURRAY ST
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		TE9453		
Sampling Date		2013/09/24 15:00		
COC Number		436814-02-01		
	Units	**BH13-105 SS1**	**RDL**	**QC Batch**
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.071	3362277
Volatile Organics				
Acetone (2-Propanone)	ug/g	ND	0.50	3360566
Benzene	ug/g	ND	0.020	3360566
Bromodichloromethane	ug/g	ND	0.050	3360566
Bromoform	ug/g	ND	0.050	3360566
Bromomethane	ug/g	ND	0.050	3360566
Carbon Tetrachloride	ug/g	ND	0.050	3360566
Chlorobenzene	ug/g	ND	0.050	3360566
Chloroform	ug/g	ND	0.050	3360566
Dibromochloromethane	ug/g	ND	0.050	3360566
1,2-Dichlorobenzene	ug/g	ND	0.050	3360566
1,3-Dichlorobenzene	ug/g	ND	0.050	3360566
1,4-Dichlorobenzene	ug/g	ND	0.050	3360566
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	3360566
1,1-Dichloroethane	ug/g	ND	0.050	3360566
1,2-Dichloroethane	ug/g	ND	0.050	3360566
1,1-Dichloroethylene	ug/g	ND	0.050	3360566
cis-1,2-Dichloroethylene	ug/g	ND	0.050	3360566
trans-1,2-Dichloroethylene	ug/g	ND	0.050	3360566
1,2-Dichloropropane	ug/g	ND	0.050	3360566
cis-1,3-Dichloropropene	ug/g	ND	0.050	3360566
trans-1,3-Dichloropropene	ug/g	ND	0.050	3360566
Ethylbenzene	ug/g	ND	0.020	3360566
Ethylene Dibromide	ug/g	ND	0.050	3360566
Hexane	ug/g	ND	0.050	3360566
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	3360566
Methyl Isobutyl Ketone	ug/g	ND	0.50	3360566
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	3360566
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	3360566
Styrene	ug/g	ND	0.050	3360566

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

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Maxxam Job #: B3G1923
Report Date: 2013/10/01

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CSST CUMBERLAND MURRAY ST
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		TE9453		
Sampling Date		2013/09/24 15:00		
COC Number		436814-02-01		
	Units	**BH13-105 SS1**	**RDL**	**QC Batch**
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	3360566
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	3360566
Tetrachloroethylene	ug/g	ND	0.050	3360566
Toluene	ug/g	ND	0.020	3360566
1,1,1-Trichloroethane	ug/g	ND	0.050	3360566
1,1,2-Trichloroethane	ug/g	ND	0.050	3360566
Trichloroethylene	ug/g	ND	0.050	3360566
Vinyl Chloride	ug/g	ND	0.020	3360566
p+m-Xylene	ug/g	ND	0.020	3360566
o-Xylene	ug/g	ND	0.020	3360566
Xylene (Total)	ug/g	ND	0.020	3360566
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	3360566
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	94		3360566
D4-1,2-Dichloroethane	%	116		3360566
D8-Toluene	%	83		3360566

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

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Maxxam Job #: B3G1923
Report Date: 2013/10/01

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: CSST CUMBERLAND MURRAY ST
Your P.O. #: 16300R-20
Sampler Initials: AW

RESULTS OF ANALYSES OF SOIL

Maxxam ID		TE9453		
Sampling Date		2013/09/24 15:00		
COC Number		436814-02-01		
	Units	**BH13-105 SS1**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	34	0.2	3367853
Available (CaCl2) pH	pH	7.68		3367679

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TE9453		
Sampling Date		2013/09/24 15:00		
COC Number		436814-02-01		
	Units	**BH13-105 SS1**	**RDL**	**QC Batch**
Metals				
Acid Extractable Aluminum (Al)	ug/g	23000	50	3365684
Acid Extractable Antimony (Sb)	ug/g	ND	0.20	3365684
Acid Extractable Arsenic (As)	ug/g	2.4	1.0	3365684
Acid Extractable Barium (Ba)	ug/g	260	0.50	3365684
Acid Extractable Beryllium (Be)	ug/g	0.65	0.20	3365684
Acid Extractable Cadmium (Cd)	ug/g	ND	0.10	3365684
Acid Extractable Calcium (Ca)	ug/g	23000	50	3365684
Acid Extractable Chromium (Cr)	ug/g	62	1.0	3365684
Acid Extractable Cobalt (Co)	ug/g	17	0.10	3365684
Acid Extractable Copper (Cu)	ug/g	33	0.50	3365684
Acid Extractable Iron (Fe)	ug/g	36000	50	3365684
Acid Extractable Lead (Pb)	ug/g	5.9	1.0	3365684
Acid Extractable Magnesium (Mg)	ug/g	18000	50	3365684
Acid Extractable Manganese (Mn)	ug/g	600	1.0	3365684
Acid Extractable Molybdenum (Mo)	ug/g	1.1	0.50	3365684
Acid Extractable Nickel (Ni)	ug/g	38	0.50	3365684
Acid Extractable Phosphorus (P)	ug/g	1100	50	3365684
Acid Extractable Potassium (K)	ug/g	9100	200	3365684
Acid Extractable Selenium (Se)	ug/g	ND	0.50	3365684
Acid Extractable Silver (Ag)	ug/g	ND	0.20	3365684
Acid Extractable Sodium (Na)	ug/g	3800	100	3365684
Acid Extractable Strontium (Sr)	ug/g	80	1.0	3365684
Acid Extractable Thallium (Tl)	ug/g	0.36	0.050	3365684
Acid Extractable Vanadium (V)	ug/g	77	5.0	3365684
Acid Extractable Zinc (Zn)	ug/g	100	5.0	3365684

ND = Not detected
RDL = Reportable Detection Limit
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Report Date: 2013/10/01

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Your P.O. #: 16300R-20
Sampler Initials: AW

Test Summary

Maxxam ID TE9453
Sample ID BH13-105 SS1
Matrix Soil

Collected 2013/09/24
Shipped
Received 2013/09/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3362156	N/A	2013/10/01	Automated Statchk
1,3-Dichloropropene Sum	CALC	3362277	N/A	2013/10/01	Paul Rubinato
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3362267	2013/09/26	2013/09/26	Paul Rubinato
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3367848	2013/09/30	2013/09/30	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3365684	2013/09/27	2013/09/27	Viviana Canzonieri
MOISTURE	BAL	3367853	N/A	2013/10/01	Lyndsey Hart
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3367069	2013/09/28	2013/09/28	Lingyun Feng
pH CaCl2 EXTRACT		3367679	2013/09/30	2013/09/30	Yogesh Patel
Volatile Organic Compounds in Soil	P&T/MS	3360566	2013/09/25	2013/09/27	Paul Rubinato

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Package 1	10.0°C

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

GENERAL COMMENTS

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060.400.103
P.O. #: 16300R-20
Site Location: CSST CUMBERLAND MURRAY ST

Quality Assurance Report

Maxxam Job Number: TB3G1923

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	Spiked Blank	4-Bromofluorobenzene	2013/09/24		113	%	60 - 140
			D4-1,2-Dichloroethane	2013/09/24		117	%	60 - 140
			D8-Toluene	2013/09/24		96	%	60 - 140
			Acetone (2-Propanone)	2013/09/24		114	%	60 - 140
		RPD	Acetone (2-Propanone)	2013/09/24	3.8		%	50
		Spiked Blank	Benzene	2013/09/24		99	%	60 - 140
		RPD	Benzene	2013/09/24	1.0		%	50
		Spiked Blank	Bromodichloromethane	2013/09/24		111	%	60 - 140
		RPD	Bromodichloromethane	2013/09/24	1.8		%	50
		Spiked Blank	Bromoform	2013/09/24		115	%	60 - 140
		RPD	Bromoform	2013/09/24	5.2		%	50
		Spiked Blank	Bromomethane	2013/09/24		89	%	60 - 140
		RPD	Bromomethane	2013/09/24	12.6		%	50
		Spiked Blank	Carbon Tetrachloride	2013/09/24		111	%	60 - 140
		RPD	Carbon Tetrachloride	2013/09/24	1.3		%	50
		Spiked Blank	Chlorobenzene	2013/09/24		97	%	60 - 140
		RPD	Chlorobenzene	2013/09/24	2.7		%	50
		Spiked Blank	Chloroform	2013/09/24		108	%	60 - 140
		RPD	Chloroform	2013/09/24	2.1		%	50
		Spiked Blank	Dibromochloromethane	2013/09/24		109	%	60 - 140
		RPD	Dibromochloromethane	2013/09/24	6.5		%	50
		Spiked Blank	1,2-Dichlorobenzene	2013/09/24		95	%	60 - 140
		RPD	1,2-Dichlorobenzene	2013/09/24	7.6		%	50
		Spiked Blank	1,3-Dichlorobenzene	2013/09/24		90	%	60 - 140
		RPD	1,3-Dichlorobenzene	2013/09/24	6.7		%	50
		Spiked Blank	1,4-Dichlorobenzene	2013/09/24		96	%	60 - 140
		RPD	1,4-Dichlorobenzene	2013/09/24	6.2		%	50
		Spiked Blank	Dichlorodifluoromethane (FREON 12)	2013/09/24		102	%	60 - 140
		RPD	Dichlorodifluoromethane (FREON 12)	2013/09/24	2.4		%	50
		Spiked Blank	1,1-Dichloroethane	2013/09/24		100	%	60 - 140
		RPD	1,1-Dichloroethane	2013/09/24	1.3		%	50
		Spiked Blank	1,2-Dichloroethane	2013/09/24		115	%	60 - 140
		RPD	1,2-Dichloroethane	2013/09/24	0.8		%	50
		Spiked Blank	1,1-Dichloroethylene	2013/09/24		106	%	60 - 140
		RPD	1,1-Dichloroethylene	2013/09/24	3.3		%	50
		Spiked Blank	cis-1,2-Dichloroethylene	2013/09/24		101	%	60 - 140
		RPD	cis-1,2-Dichloroethylene	2013/09/24	0.2		%	50
		Spiked Blank	trans-1,2-Dichloroethylene	2013/09/24		96	%	60 - 140
		RPD	trans-1,2-Dichloroethylene	2013/09/24	2.3		%	50
		Spiked Blank	1,2-Dichloropropane	2013/09/24		105	%	60 - 140
		RPD	1,2-Dichloropropane	2013/09/24	4.4		%	50
		Spiked Blank	cis-1,3-Dichloropropene	2013/09/24		104	%	60 - 140
		RPD	cis-1,3-Dichloropropene	2013/09/24	1.4		%	50
		Spiked Blank	trans-1,3-Dichloropropene	2013/09/24		96	%	60 - 140
		RPD	trans-1,3-Dichloropropene	2013/09/24	0.2		%	50
		Spiked Blank	Ethylbenzene	2013/09/24		88	%	60 - 140
		RPD	Ethylbenzene	2013/09/24	6.6		%	50
		Spiked Blank	Ethylene Dibromide	2013/09/24		106	%	60 - 140
		RPD	Ethylene Dibromide	2013/09/24	5.5		%	50
		Spiked Blank	Hexane	2013/09/24		83	%	60 - 140
		RPD	Hexane	2013/09/24	1.2		%	50
		Spiked Blank	Methylene Chloride(Dichloromethane)	2013/09/24		110	%	60 - 140
		RPD	Methylene Chloride(Dichloromethane)	2013/09/24	0.06		%	50
		Spiked Blank	Methyl Isobutyl Ketone	2013/09/24		117	%	60 - 140
		RPD	Methyl Isobutyl Ketone	2013/09/24	2.7		%	50

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Stantec Consulting Ltd
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Quality Assurance Report (Continued)

Maxxam Job Number: TB3G1923

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	Spiked Blank	Methyl Ethyl Ketone (2-Butanone)	2013/09/24		121	%	60 - 140
		RPD	Methyl Ethyl Ketone (2-Butanone)	2013/09/24	3.4		%	50
		Spiked Blank	Methyl t-butyl ether (MTBE)	2013/09/24		102	%	60 - 140
		RPD	Methyl t-butyl ether (MTBE)	2013/09/24	1.7		%	50
		Spiked Blank	Styrene	2013/09/24		100	%	60 - 140
		RPD	Styrene	2013/09/24	7.6		%	50
		Spiked Blank	1,1,1,2-Tetrachloroethane	2013/09/24		103	%	60 - 140
		RPD	1,1,1,2-Tetrachloroethane	2013/09/24	6.7		%	50
		Spiked Blank	1,1,2,2-Tetrachloroethane	2013/09/24		108	%	60 - 140
		RPD	1,1,2,2-Tetrachloroethane	2013/09/24	0.04		%	50
		Spiked Blank	Tetrachloroethylene	2013/09/24		93	%	60 - 140
		RPD	Tetrachloroethylene	2013/09/24	8.1		%	50
		Spiked Blank	Toluene	2013/09/24		93	%	60 - 140
		RPD	Toluene	2013/09/24	7.6		%	50
		Spiked Blank	1,1,1-Trichloroethane	2013/09/24		105	%	60 - 140
		RPD	1,1,1-Trichloroethane	2013/09/24	1.2		%	50
		Spiked Blank	1,1,2-Trichloroethane	2013/09/24		104	%	60 - 140
		RPD	1,1,2-Trichloroethane	2013/09/24	6.3		%	50
		Spiked Blank	Trichloroethylene	2013/09/24		101	%	60 - 140
		RPD	Trichloroethylene	2013/09/24	4.9		%	50
		Spiked Blank	Vinyl Chloride	2013/09/24		99	%	60 - 140
		RPD	Vinyl Chloride	2013/09/24	4.2		%	50
		Spiked Blank	p+m-Xylene	2013/09/24		99	%	60 - 140
		RPD	p+m-Xylene	2013/09/24	6.4		%	50
		Spiked Blank	o-Xylene	2013/09/24		80	%	60 - 140
		RPD	o-Xylene	2013/09/24	7.8		%	50
		Spiked Blank	Trichlorofluoromethane (FREON 11)	2013/09/24		109	%	60 - 140
		RPD	Trichlorofluoromethane (FREON 11)	2013/09/24	0.5		%	50
		Method Blank	4-Bromofluorobenzene	2013/09/24		100	%	60 - 140
			D4-1,2-Dichloroethane	2013/09/24		117	%	60 - 140
			D8-Toluene	2013/09/24		85	%	60 - 140
			Acetone (2-Propanone)	2013/09/24	ND, RDL=0.50		ug/g	
			Benzene	2013/09/24	ND, RDL=0.020		ug/g	
			Bromodichloromethane	2013/09/24	ND, RDL=0.050		ug/g	
			Bromoform	2013/09/24	ND, RDL=0.050		ug/g	
			Bromomethane	2013/09/24	ND, RDL=0.050		ug/g	
			Carbon Tetrachloride	2013/09/24	ND, RDL=0.050		ug/g	
			Chlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			Chloroform	2013/09/24	ND, RDL=0.050		ug/g	
			Dibromochloromethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			1,3-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			1,4-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2013/09/24	ND, RDL=0.050		ug/g	
			1,1-Dichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			cis-1,2-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			trans-1,2-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichloropropane	2013/09/24	ND, RDL=0.050		ug/g	
			cis-1,3-Dichloropropene	2013/09/24	ND, RDL=0.050		ug/g	
			trans-1,3-Dichloropropene	2013/09/24	ND, RDL=0.050		ug/g	
			Ethylbenzene	2013/09/24	ND, RDL=0.020		ug/g	
			Ethylene Dibromide	2013/09/24	ND, RDL=0.050		ug/g	
			Hexane	2013/09/24	ND, RDL=0.050		ug/g	

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Quality Assurance Report (Continued)

Maxxam Job Number: TB3G1923

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	Method Blank	Methylene Chloride(Dichloromethane)	2013/09/24	ND, RDL=0.050		ug/g	
			Methyl Isobutyl Ketone	2013/09/24	ND, RDL=0.50		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2013/09/24	ND, RDL=0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2013/09/24	ND, RDL=0.050		ug/g	
			Styrene	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			Tetrachloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			Toluene	2013/09/24	ND, RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,2-Trichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			Trichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			Vinyl Chloride	2013/09/24	ND, RDL=0.020		ug/g	
			p+m-Xylene	2013/09/24	ND, RDL=0.020		ug/g	
			o-Xylene	2013/09/24	ND, RDL=0.020		ug/g	
			Trichlorofluoromethane (FREON 11)	2013/09/24	ND, RDL=0.050		ug/g	
3362267	PRB	Matrix Spike	1,4-Difluorobenzene	2013/09/26		106	%	60 - 140
			4-Bromofluorobenzene	2013/09/26		101	%	60 - 140
			D10-Ethylbenzene	2013/09/26		88	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/26		110	%	60 - 140
			F1 (C6-C10)	2013/09/26		108	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2013/09/26		106	%	60 - 140
			4-Bromofluorobenzene	2013/09/26		101	%	60 - 140
			D10-Ethylbenzene	2013/09/26		95	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/26		109	%	60 - 140
			F1 (C6-C10)	2013/09/26		99	%	80 - 120
		Method Blank	1,4-Difluorobenzene	2013/09/26		106	%	60 - 140
			4-Bromofluorobenzene	2013/09/26		100	%	60 - 140
			D10-Ethylbenzene	2013/09/26		88	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/26		110	%	60 - 140
			F1 (C6-C10)	2013/09/26	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2013/09/26	ND, RDL=10		ug/g	
		RPD	F1 (C6-C10)	2013/09/26	NC		%	50
			F1 (C6-C10) - BTEX	2013/09/26	NC		%	50
3365684	VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2013/09/27		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2013/09/27		90	%	75 - 125
			Acid Extractable Arsenic (As)	2013/09/27		96	%	75 - 125
			Acid Extractable Barium (Ba)	2013/09/27		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2013/09/27		96	%	75 - 125
			Acid Extractable Cadmium (Cd)	2013/09/27		96	%	75 - 125
			Acid Extractable Calcium (Ca)	2013/09/27		NC	%	75 - 125
			Acid Extractable Chromium (Cr)	2013/09/27		97	%	75 - 125
			Acid Extractable Cobalt (Co)	2013/09/27		97	%	75 - 125
			Acid Extractable Copper (Cu)	2013/09/27		95	%	75 - 125
			Acid Extractable Iron (Fe)	2013/09/27		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2013/09/27		NC	%	75 - 125
			Acid Extractable Magnesium (Mg)	2013/09/27		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2013/09/27		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2013/09/27		98	%	75 - 125
			Acid Extractable Nickel (Ni)	2013/09/27		99	%	75 - 125
			Acid Extractable Phosphorus (P)	2013/09/27		NC	%	75 - 125
			Acid Extractable Potassium (K)	2013/09/27		NC	%	75 - 125
			Acid Extractable Selenium (Se)	2013/09/27		99	%	75 - 125
			Acid Extractable Silver (Ag)	2013/09/27		100	%	75 - 125
			Acid Extractable Sodium (Na)	2013/09/27		95	%	75 - 125

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Quality Assurance Report (Continued)

Maxxam Job Number: TB3G1923

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3365684	VIV	Matrix Spike	Acid Extractable Strontium (Sr)	2013/09/27		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2013/09/27		92	%	75 - 125
			Acid Extractable Vanadium (V)	2013/09/27		99	%	75 - 125
			Acid Extractable Zinc (Zn)	2013/09/27		NC	%	75 - 125
		Spiked Blank	Acid Extractable Aluminum (Al)	2013/09/27		106	%	80 - 120
			Acid Extractable Antimony (Sb)	2013/09/27		97	%	80 - 120
			Acid Extractable Arsenic (As)	2013/09/27		95	%	80 - 120
			Acid Extractable Barium (Ba)	2013/09/27		97	%	80 - 120
			Acid Extractable Beryllium (Be)	2013/09/27		98	%	80 - 120
			Acid Extractable Cadmium (Cd)	2013/09/27		96	%	80 - 120
			Acid Extractable Calcium (Ca)	2013/09/27		101	%	80 - 120
			Acid Extractable Chromium (Cr)	2013/09/27		92	%	80 - 120
			Acid Extractable Cobalt (Co)	2013/09/27		96	%	80 - 120
			Acid Extractable Copper (Cu)	2013/09/27		93	%	80 - 120
			Acid Extractable Iron (Fe)	2013/09/27		99	%	80 - 120
			Acid Extractable Lead (Pb)	2013/09/27		99	%	80 - 120
			Acid Extractable Magnesium (Mg)	2013/09/27		94	%	80 - 120
			Acid Extractable Manganese (Mn)	2013/09/27		94	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2013/09/27		97	%	80 - 120
			Acid Extractable Nickel (Ni)	2013/09/27		95	%	80 - 120
			Acid Extractable Phosphorus (P)	2013/09/27		91	%	80 - 120
			Acid Extractable Potassium (K)	2013/09/27		91	%	80 - 120
			Acid Extractable Selenium (Se)	2013/09/27		100	%	80 - 120
			Acid Extractable Silver (Ag)	2013/09/27		99	%	80 - 120
			Acid Extractable Sodium (Na)	2013/09/27		94	%	80 - 120
			Acid Extractable Strontium (Sr)	2013/09/27		98	%	80 - 120
			Acid Extractable Thallium (Tl)	2013/09/27		94	%	80 - 120
			Acid Extractable Vanadium (V)	2013/09/27		94	%	80 - 120
			Acid Extractable Zinc (Zn)	2013/09/27		96	%	80 - 120
		Method Blank	Acid Extractable Aluminum (Al)	2013/09/27	ND, RDL=50		ug/g	
			Acid Extractable Antimony (Sb)	2013/09/27	ND, RDL=0.20		ug/g	
			Acid Extractable Arsenic (As)	2013/09/27	ND, RDL=1.0		ug/g	
			Acid Extractable Barium (Ba)	2013/09/27	ND, RDL=0.50		ug/g	
			Acid Extractable Beryllium (Be)	2013/09/27	ND, RDL=0.20		ug/g	
			Acid Extractable Cadmium (Cd)	2013/09/27	ND, RDL=0.10		ug/g	
			Acid Extractable Calcium (Ca)	2013/09/27	ND, RDL=50		ug/g	
			Acid Extractable Chromium (Cr)	2013/09/27	ND, RDL=1.0		ug/g	
			Acid Extractable Cobalt (Co)	2013/09/27	ND, RDL=0.10		ug/g	
			Acid Extractable Copper (Cu)	2013/09/27	0.58, RDL=0.50		ug/g	
			Acid Extractable Iron (Fe)	2013/09/27	ND, RDL=50		ug/g	
			Acid Extractable Lead (Pb)	2013/09/27	ND, RDL=1.0		ug/g	
			Acid Extractable Magnesium (Mg)	2013/09/27	ND, RDL=50		ug/g	
			Acid Extractable Manganese (Mn)	2013/09/27	ND, RDL=1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2013/09/27	ND, RDL=0.50		ug/g	
			Acid Extractable Nickel (Ni)	2013/09/27	ND, RDL=0.50		ug/g	
			Acid Extractable Phosphorus (P)	2013/09/27	ND, RDL=50		ug/g	
			Acid Extractable Potassium (K)	2013/09/27	ND, RDL=200		ug/g	
			Acid Extractable Selenium (Se)	2013/09/27	ND, RDL=0.50		ug/g	
			Acid Extractable Silver (Ag)	2013/09/27	ND, RDL=0.20		ug/g	
			Acid Extractable Sodium (Na)	2013/09/27	ND, RDL=100		ug/g	
			Acid Extractable Strontium (Sr)	2013/09/27	ND, RDL=1.0		ug/g	
			Acid Extractable Thallium (Tl)	2013/09/27	ND, RDL=0.050		ug/g	
			Acid Extractable Vanadium (V)	2013/09/27	ND, RDL=5.0		ug/g	
			Acid Extractable Zinc (Zn)	2013/09/27	ND, RDL=5.0		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2013/09/27	NC		%	30

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.maxxamanalytics.com

Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060.400.103
P.O. #: 16300R-20
Site Location: CSST CUMBERLAND MURRAY ST

Quality Assurance Report (Continued)

Maxxam Job Number: TB3G1923

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3365684	VIV	RPD	Acid Extractable Arsenic (As)	2013/09/27	NC		%	30
			Acid Extractable Barium (Ba)	2013/09/27	3.7		%	30
			Acid Extractable Beryllium (Be)	2013/09/27	NC		%	30
			Acid Extractable Cadmium (Cd)	2013/09/27	2.8		%	30
			Acid Extractable Chromium (Cr)	2013/09/27	3.9		%	30
			Acid Extractable Cobalt (Co)	2013/09/27	4.4		%	30
			Acid Extractable Copper (Cu)	2013/09/27	3.7		%	30
			Acid Extractable Lead (Pb)	2013/09/27	53.7 (1)		%	30
			Acid Extractable Molybdenum (Mo)	2013/09/27	NC		%	30
			Acid Extractable Nickel (Ni)	2013/09/27	6.8		%	30
			Acid Extractable Selenium (Se)	2013/09/27	NC		%	30
			Acid Extractable Silver (Ag)	2013/09/27	NC		%	30
			Acid Extractable Thallium (Tl)	2013/09/27	NC		%	30
			Acid Extractable Vanadium (V)	2013/09/27	NC		%	30
			Acid Extractable Zinc (Zn)	2013/09/27	0.8		%	30
3367069	LFE	Matrix Spike	D10-Anthracene	2013/09/28		72	%	50 - 130
			D14-Terphenyl (FS)	2013/09/28		74	%	50 - 130
			D8-Acenaphthylene	2013/09/28		67	%	50 - 130
			Acenaphthene	2013/09/28		76	%	50 - 130
			Acenaphthylene	2013/09/28		75	%	50 - 130
			Anthracene	2013/09/28		78	%	50 - 130
			Benzo(a)anthracene	2013/09/28		88	%	50 - 130
			Benzo(a)pyrene	2013/09/28		77	%	50 - 130
			Benzo(b/j)fluoranthene	2013/09/28		76	%	50 - 130
			Benzo(g,h,i)perylene	2013/09/28		80	%	50 - 130
			Benzo(k)fluoranthene	2013/09/28		82	%	50 - 130
			Chrysene	2013/09/28		82	%	50 - 130
			Dibenz(a,h)anthracene	2013/09/28		79	%	50 - 130
			Fluoranthene	2013/09/28		81	%	50 - 130
			Fluorene	2013/09/28		75	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/09/28		83	%	50 - 130
			1-Methylnaphthalene	2013/09/28		71	%	50 - 130
			2-Methylnaphthalene	2013/09/28		69	%	50 - 130
			Naphthalene	2013/09/28		74	%	50 - 130
			Phenanthrene	2013/09/28		77	%	50 - 130
			Pyrene	2013/09/28		83	%	50 - 130
		Spiked Blank	D10-Anthracene	2013/09/28		88	%	50 - 130
			D14-Terphenyl (FS)	2013/09/28		88	%	50 - 130
			D8-Acenaphthylene	2013/09/28		83	%	50 - 130
			Acenaphthene	2013/09/28		94	%	50 - 130
			Acenaphthylene	2013/09/28		93	%	50 - 130
			Anthracene	2013/09/28		94	%	50 - 130
			Benzo(a)anthracene	2013/09/28		105	%	50 - 130
			Benzo(a)pyrene	2013/09/28		96	%	50 - 130
			Benzo(b/j)fluoranthene	2013/09/28		92	%	50 - 130
			Benzo(g,h,i)perylene	2013/09/28		105	%	50 - 130
			Benzo(k)fluoranthene	2013/09/28		114	%	50 - 130
			Chrysene	2013/09/28		98	%	50 - 130
			Dibenz(a,h)anthracene	2013/09/28		99	%	50 - 130
			Fluoranthene	2013/09/28		98	%	50 - 130
			Fluorene	2013/09/28		93	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/09/28		106	%	50 - 130
			1-Methylnaphthalene	2013/09/28		87	%	50 - 130
			2-Methylnaphthalene	2013/09/28		84	%	50 - 130
			Naphthalene	2013/09/28		92	%	50 - 130

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060.400.103
P.O. #: 16300R-20
Site Location: CSST CUMBERLAND MURRAY ST

Quality Assurance Report (Continued)

Maxxam Job Number: TB3G1923

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3367069	LFE	Spiked Blank	Phenanthrene	2013/09/28		94	%	50 - 130
			Pyrene	2013/09/28		98	%	50 - 130
		Method Blank	D10-Anthracene	2013/09/28		84	%	50 - 130
			D14-Terphenyl (FS)	2013/09/28		86	%	50 - 130
			D8-Acenaphthylene	2013/09/28		79	%	50 - 130
			Acenaphthene	2013/09/28	ND, RDL=0.0050		ug/g	
			Acenaphthylene	2013/09/28	ND, RDL=0.0050		ug/g	
			Anthracene	2013/09/28	ND, RDL=0.0050		ug/g	
			Benzo(a)anthracene	2013/09/28	ND, RDL=0.0050		ug/g	
			Benzo(a)pyrene	2013/09/28	ND, RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2013/09/28	ND, RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2013/09/28	ND, RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2013/09/28	ND, RDL=0.0050		ug/g	
			Chrysene	2013/09/28	ND, RDL=0.0050		ug/g	
			Dibenz(a,h)anthracene	2013/09/28	ND, RDL=0.0050		ug/g	
			Fluoranthene	2013/09/28	ND, RDL=0.0050		ug/g	
			Fluorene	2013/09/28	ND, RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2013/09/28	ND, RDL=0.0050		ug/g	
			1-Methylnaphthalene	2013/09/28	ND, RDL=0.0050		ug/g	
			2-Methylnaphthalene	2013/09/28	ND, RDL=0.0050		ug/g	
			Naphthalene	2013/09/28	ND, RDL=0.0050		ug/g	
			Phenanthrene	2013/09/28	ND, RDL=0.0050		ug/g	
			Pyrene	2013/09/28	ND, RDL=0.0050		ug/g	
		RPD	Acenaphthene	2013/09/28	NC		%	40
			Acenaphthylene	2013/09/28	NC		%	40
			Anthracene	2013/09/28	NC		%	40
			Benzo(a)anthracene	2013/09/28	NC		%	40
			Benzo(a)pyrene	2013/09/28	NC		%	40
			Benzo(b/j)fluoranthene	2013/09/28	NC		%	40
			Benzo(g,h,i)perylene	2013/09/28	NC		%	40
			Benzo(k)fluoranthene	2013/09/28	NC		%	40
			Chrysene	2013/09/28	NC		%	40
			Dibenz(a,h)anthracene	2013/09/28	NC		%	40
			Fluoranthene	2013/09/28	NC		%	40
			Fluorene	2013/09/28	NC		%	40
			Indeno(1,2,3-cd)pyrene	2013/09/28	NC		%	40
			1-Methylnaphthalene	2013/09/28	NC		%	40
			2-Methylnaphthalene	2013/09/28	NC		%	40
			Naphthalene	2013/09/28	NC		%	40
			Phenanthrene	2013/09/28	NC		%	40
			Pyrene	2013/09/28	NC		%	40
3367848	HES	Matrix Spike	o-Terphenyl	2013/09/30		86	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/30		107	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2013/09/30		107	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2013/09/30		107	%	50 - 130
		Spiked Blank	o-Terphenyl	2013/09/30		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/30		98	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2013/09/30		98	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2013/09/30		98	%	80 - 120
		Method Blank	o-Terphenyl	2013/09/30		98	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/30	ND, RDL=10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2013/09/30	ND, RDL=10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2013/09/30	ND, RDL=10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2013/09/30	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2013/09/30	NC		%	50

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060.400.103
P.O. #: 16300R-20
Site Location: CSST CUMBERLAND MURRAY ST

Quality Assurance Report (Continued)

Maxxam Job Number: TB3G1923

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3367848	HES	RPD	F4 (C34-C50 Hydrocarbons)	2013/09/30	NC		%	50
3367853	LHR	RPD	Moisture	2013/10/01	5.3		%	50

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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Validation Signature Page

Maxxam Job #: B3G1923

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

Cristina Carriere, Scientific Services

Floyd Mayede, Senior Analyst

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

==========

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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Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Site Location: ROSE @ CATHCART RIDEAU RIVER
Your C.O.C. #: 43681408, 436814-08-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/10/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3G2874
Received: 2013/09/26, 08:40

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	1	N/A	2013/10/02	CAM SOP - 00301	EPA 8270
1,3-Dichloropropene Sum	1	N/A	2013/10/01	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2013/09/26	2013/09/26	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/09/30	2013/10/01	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	1	2013/10/01	2013/10/01	CAM SOP-00447	EPA 6020
MOISTURE	1	N/A	2013/10/01	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2013/09/27	2013/09/28	CAM SOP - 00318	EPA 8270
pH CaCl2 EXTRACT (1)	1	2013/09/30	2013/09/30	CAM SOP-00413	SM 4500H+ B
Volatile Organic Compounds in Soil	1	2013/09/27	2013/09/27	OTT SOP-00005	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed

Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Site Location: ROSE @ CATHCART RIDEAU RIVER
Your C.O.C. #: 43681408, 436814-08-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/10/02

CERTIFICATE OF ANALYSIS

or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* 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.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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.

Total cover pages: 2

Maxxam Job #: B3G2874
Report Date: 2013/10/02

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: ROSE @ CATHCART RIDEAU RIVER
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 PAHS (SOIL)

Maxxam ID		TF3586		
Sampling Date		2013/09/25 15:00		
COC Number		436814-08-01		
	Units	**BH13-107**	**RDL**	**QC Batch**
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	1.4	0.071	3363841
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	1.5	0.050	3366674
Acenaphthylene	ug/g	1.4	0.050	3366674
Anthracene	ug/g	5.4	0.050	3366674
Benzo(a)anthracene	ug/g	12	0.050	3366674
Benzo(a)pyrene	ug/g	10	0.050	3366674
Benzo(b/j)fluoranthene	ug/g	12	0.050	3366674
Benzo(g,h,i)perylene	ug/g	5.1	0.050	3366674
Benzo(k)fluoranthene	ug/g	5.1	0.050	3366674
Chrysene	ug/g	9.5	0.050	3366674
Dibenz(a,h)anthracene	ug/g	1.5	0.050	3366674
Fluoranthene	ug/g	28	0.050	3366674
Fluorene	ug/g	2.5	0.050	3366674
Indeno(1,2,3-cd)pyrene	ug/g	5.8	0.050	3366674
1-Methylnaphthalene	ug/g	0.56	0.050	3366674
2-Methylnaphthalene	ug/g	0.80	0.050	3366674
Naphthalene	ug/g	2.0	0.050	3366674
Phenanthrene	ug/g	18	0.050	3366674
Pyrene	ug/g	19	0.050	3366674
Surrogate Recovery (%)				
D10-Anthracene	%	84		3366674
D14-Terphenyl (FS)	%	94		3366674
D8-Acenaphthylene	%	61		3366674

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3G2874
Report Date: 2013/10/02

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: ROSE @ CATHCART RIDEAU RIVER
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		TF3586		
Sampling Date		2013/09/25 15:00		
COC Number		436814-08-01		
	Units	**BH13-107**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/g	ND	10	3362267
F1 (C6-C10) - BTEX	ug/g	ND	10	3362267
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	62	10	3367848
F3 (C16-C34 Hydrocarbons)	ug/g	320	10	3367848
F4 (C34-C50 Hydrocarbons)	ug/g	150	10	3367848
Reached Baseline at C50	ug/g	Yes		3367848
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	106		3362267
4-Bromofluorobenzene	%	88		3362267
D10-Ethylbenzene	%	85		3362267
D4-1,2-Dichloroethane	%	107		3362267
o-Terphenyl	%	92		3367848

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

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Maxxam Job #: B3G2874
Report Date: 2013/10/02

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: ROSE @ CATHCART RIDEAU RIVER
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		TF3586		
Sampling Date		2013/09/25 15:00		
COC Number		436814-08-01		
	Units	**BH13-107**	**RDL**	**QC Batch**
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.071	3363883
Volatile Organics				
Acetone (2-Propanone)	ug/g	ND	0.50	3360566
Benzene	ug/g	0.020	0.020	3360566
Bromodichloromethane	ug/g	ND	0.050	3360566
Bromoform	ug/g	ND	0.050	3360566
Bromomethane	ug/g	ND	0.050	3360566
Carbon Tetrachloride	ug/g	ND	0.050	3360566
Chlorobenzene	ug/g	ND	0.050	3360566
Chloroform	ug/g	ND	0.050	3360566
Dibromochloromethane	ug/g	ND	0.050	3360566
1,2-Dichlorobenzene	ug/g	ND	0.050	3360566
1,3-Dichlorobenzene	ug/g	ND	0.050	3360566
1,4-Dichlorobenzene	ug/g	ND	0.050	3360566
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	3360566
1,1-Dichloroethane	ug/g	ND	0.050	3360566
1,2-Dichloroethane	ug/g	ND	0.050	3360566
1,1-Dichloroethylene	ug/g	ND	0.050	3360566
cis-1,2-Dichloroethylene	ug/g	ND	0.050	3360566
trans-1,2-Dichloroethylene	ug/g	ND	0.050	3360566
1,2-Dichloropropane	ug/g	ND	0.050	3360566
cis-1,3-Dichloropropene	ug/g	ND	0.050	3360566
trans-1,3-Dichloropropene	ug/g	ND	0.050	3360566
Ethylbenzene	ug/g	ND	0.020	3360566
Ethylene Dibromide	ug/g	ND	0.050	3360566
Hexane	ug/g	ND	0.050	3360566
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	3360566
Methyl Isobutyl Ketone	ug/g	ND	0.50	3360566
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	3360566
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	3360566
Styrene	ug/g	ND	0.050	3360566

ND = Not detected
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QC Batch = Quality Control Batch

Maxxam Job #: B3G2874
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Stantec Consulting Ltd
Client Project #: 163401060.400.103
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O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		TF3586		
Sampling Date		2013/09/25 15:00		
COC Number		436814-08-01		
	Units	**BH13-107**	**RDL**	**QC Batch**
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	3360566
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	3360566
Tetrachloroethylene	ug/g	ND	0.050	3360566
Toluene	ug/g	0.028	0.020	3360566
1,1,1-Trichloroethane	ug/g	ND	0.050	3360566
1,1,2-Trichloroethane	ug/g	ND	0.050	3360566
Trichloroethylene	ug/g	ND	0.050	3360566
Vinyl Chloride	ug/g	ND	0.020	3360566
p+m-Xylene	ug/g	0.038	0.020	3360566
o-Xylene	ug/g	ND	0.020	3360566
Xylene (Total)	ug/g	0.038	0.020	3360566
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	3360566
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	95		3360566
D4-1,2-Dichloroethane	%	122		3360566
D8-Toluene	%	87		3360566

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RESULTS OF ANALYSES OF SOIL

Maxxam ID		TF3586		
Sampling Date		2013/09/25 15:00		
COC Number		436814-08-01		
	Units	**BH13-107**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	18	0.2	3367853
Available (CaCl2) pH	pH	7.45		3367680

RDL = Reportable Detection Limit
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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TF3586		
Sampling Date		2013/09/25 15:00		
COC Number		436814-08-01		
	Units	**BH13-107**	**RDL**	**QC Batch**
Metals				
Acid Extractable Aluminum (Al)	ug/g	11000	50	3369674
Acid Extractable Antimony (Sb)	ug/g	0.80	0.20	3369674
Acid Extractable Arsenic (As)	ug/g	4.2	1.0	3369674
Acid Extractable Barium (Ba)	ug/g	160	0.50	3369674
Acid Extractable Beryllium (Be)	ug/g	0.45	0.20	3369674
Acid Extractable Cadmium (Cd)	ug/g	0.19	0.10	3369674
Acid Extractable Calcium (Ca)	ug/g	68000	50	3369674
Acid Extractable Chromium (Cr)	ug/g	29	1.0	3369674
Acid Extractable Cobalt (Co)	ug/g	8.5	0.10	3369674
Acid Extractable Copper (Cu)	ug/g	29	0.50	3369674
Acid Extractable Iron (Fe)	ug/g	22000	50	3369674
Acid Extractable Lead (Pb)	ug/g	75	1.0	3369674
Acid Extractable Magnesium (Mg)	ug/g	8700	50	3369674
Acid Extractable Manganese (Mn)	ug/g	410	1.0	3369674
Acid Extractable Molybdenum (Mo)	ug/g	0.88	0.50	3369674
Acid Extractable Nickel (Ni)	ug/g	19	0.50	3369674
Acid Extractable Phosphorus (P)	ug/g	1100	50	3369674
Acid Extractable Potassium (K)	ug/g	2700	200	3369674
Acid Extractable Selenium (Se)	ug/g	ND	0.50	3369674
Acid Extractable Silver (Ag)	ug/g	ND	0.20	3369674
Acid Extractable Sodium (Na)	ug/g	330	100	3369674
Acid Extractable Strontium (Sr)	ug/g	110	1.0	3369674
Acid Extractable Thallium (Tl)	ug/g	0.18	0.050	3369674
Acid Extractable Vanadium (V)	ug/g	36	5.0	3369674
Acid Extractable Zinc (Zn)	ug/g	110	5.0	3369674

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Report Date: 2013/10/02

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Site Location: ROSE @ CATHCART RIDEAU RIVER
Your P.O. #: 16300R-20
Sampler Initials: AW

Test Summary

Maxxam ID TF3586
Sample ID BH13-107
Matrix Soil

Collected 2013/09/25
Shipped
Received 2013/09/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3363841	N/A	2013/10/02	Automated Statchk
1,3-Dichloropropene Sum	CALC	3363883	N/A	2013/10/01	Paul Rubinato
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3362267	2013/09/26	2013/09/26	Paul Rubinato
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3367848	2013/09/30	2013/10/01	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3369674	2013/10/01	2013/10/01	Viviana Canzonieri
MOISTURE	BAL	3367853	N/A	2013/10/01	Lyndsey Hart
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3366674	2013/09/27	2013/09/28	Lingyun Feng
pH CaCl2 EXTRACT		3367680	2013/09/30	2013/09/30	Yogesh Patel
Volatile Organic Compounds in Soil	P&T/MS	3360566	2013/09/27	2013/09/27	Paul Rubinato

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Package 1	3.0°C

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

GENERAL COMMENTS

Sample TF3586-01: PAH 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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Attention: Jill Peters-Dechman
Client Project #: 163401060.400.103
P.O. #: 16300R-20
Site Location: ROSE @ CATHCART RIDEAU RIVER

Quality Assurance Report

Maxxam Job Number: TB3G2874

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	Spiked Blank	4-Bromofluorobenzene	2013/09/24		113	%	60 - 140
			D4-1,2-Dichloroethane	2013/09/24		117	%	60 - 140
			D8-Toluene	2013/09/24		96	%	60 - 140
			Acetone (2-Propanone)	2013/09/24		114	%	60 - 140
		RPD	Acetone (2-Propanone)	2013/09/24	3.8		%	50
		Spiked Blank	Benzene	2013/09/24		99	%	60 - 140
		RPD	Benzene	2013/09/24	1.0		%	50
		Spiked Blank	Bromodichloromethane	2013/09/24		111	%	60 - 140
		RPD	Bromodichloromethane	2013/09/24	1.8		%	50
		Spiked Blank	Bromoform	2013/09/24		115	%	60 - 140
		RPD	Bromoform	2013/09/24	5.2		%	50
		Spiked Blank	Bromomethane	2013/09/24		89	%	60 - 140
		RPD	Bromomethane	2013/09/24	12.6		%	50
		Spiked Blank	Carbon Tetrachloride	2013/09/24		111	%	60 - 140
		RPD	Carbon Tetrachloride	2013/09/24	1.3		%	50
		Spiked Blank	Chlorobenzene	2013/09/24		97	%	60 - 140
		RPD	Chlorobenzene	2013/09/24	2.7		%	50
		Spiked Blank	Chloroform	2013/09/24		108	%	60 - 140
		RPD	Chloroform	2013/09/24	2.1		%	50
		Spiked Blank	Dibromochloromethane	2013/09/24		109	%	60 - 140
		RPD	Dibromochloromethane	2013/09/24	6.5		%	50
		Spiked Blank	1,2-Dichlorobenzene	2013/09/24		95	%	60 - 140
		RPD	1,2-Dichlorobenzene	2013/09/24	7.6		%	50
		Spiked Blank	1,3-Dichlorobenzene	2013/09/24		90	%	60 - 140
		RPD	1,3-Dichlorobenzene	2013/09/24	6.7		%	50
		Spiked Blank	1,4-Dichlorobenzene	2013/09/24		96	%	60 - 140
		RPD	1,4-Dichlorobenzene	2013/09/24	6.2		%	50
		Spiked Blank	Dichlorodifluoromethane (FREON 12)	2013/09/24		102	%	60 - 140
		RPD	Dichlorodifluoromethane (FREON 12)	2013/09/24	2.4		%	50
		Spiked Blank	1,1-Dichloroethane	2013/09/24		100	%	60 - 140
		RPD	1,1-Dichloroethane	2013/09/24	1.3		%	50
		Spiked Blank	1,2-Dichloroethane	2013/09/24		115	%	60 - 140
		RPD	1,2-Dichloroethane	2013/09/24	0.8		%	50
		Spiked Blank	1,1-Dichloroethylene	2013/09/24		106	%	60 - 140
		RPD	1,1-Dichloroethylene	2013/09/24	3.3		%	50
		Spiked Blank	cis-1,2-Dichloroethylene	2013/09/24		101	%	60 - 140
		RPD	cis-1,2-Dichloroethylene	2013/09/24	0.2		%	50
		Spiked Blank	trans-1,2-Dichloroethylene	2013/09/24		96	%	60 - 140
		RPD	trans-1,2-Dichloroethylene	2013/09/24	2.3		%	50
		Spiked Blank	1,2-Dichloropropane	2013/09/24		105	%	60 - 140
		RPD	1,2-Dichloropropane	2013/09/24	4.4		%	50
		Spiked Blank	cis-1,3-Dichloropropene	2013/09/24		104	%	60 - 140
		RPD	cis-1,3-Dichloropropene	2013/09/24	1.4		%	50
		Spiked Blank	trans-1,3-Dichloropropene	2013/09/24		96	%	60 - 140
		RPD	trans-1,3-Dichloropropene	2013/09/24	0.2		%	50
		Spiked Blank	Ethylbenzene	2013/09/24		88	%	60 - 140
		RPD	Ethylbenzene	2013/09/24	6.6		%	50
		Spiked Blank	Ethylene Dibromide	2013/09/24		106	%	60 - 140
		RPD	Ethylene Dibromide	2013/09/24	5.5		%	50
		Spiked Blank	Hexane	2013/09/24		83	%	60 - 140
		RPD	Hexane	2013/09/24	1.2		%	50
		Spiked Blank	Methylene Chloride(Dichloromethane)	2013/09/24		110	%	60 - 140
		RPD	Methylene Chloride(Dichloromethane)	2013/09/24	0.06		%	50
		Spiked Blank	Methyl Isobutyl Ketone	2013/09/24		117	%	60 - 140
		RPD	Methyl Isobutyl Ketone	2013/09/24	2.7		%	50

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P.O. #: 16300R-20
Site Location: ROSE @ CATHCART RIDEAU RIVER

Quality Assurance Report (Continued)

Maxxam Job Number: TB3G2874

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	Spiked Blank	Methyl Ethyl Ketone (2-Butanone)	2013/09/24		121	%	60 - 140
		RPD	Methyl Ethyl Ketone (2-Butanone)	2013/09/24	3.4		%	50
		Spiked Blank	Methyl t-butyl ether (MTBE)	2013/09/24		102	%	60 - 140
		RPD	Methyl t-butyl ether (MTBE)	2013/09/24	1.7		%	50
		Spiked Blank	Styrene	2013/09/24		100	%	60 - 140
		RPD	Styrene	2013/09/24	7.6		%	50
		Spiked Blank	1,1,1,2-Tetrachloroethane	2013/09/24		103	%	60 - 140
		RPD	1,1,1,2-Tetrachloroethane	2013/09/24	6.7		%	50
		Spiked Blank	1,1,2,2-Tetrachloroethane	2013/09/24		108	%	60 - 140
		RPD	1,1,2,2-Tetrachloroethane	2013/09/24	0.04		%	50
		Spiked Blank	Tetrachloroethylene	2013/09/24		93	%	60 - 140
		RPD	Tetrachloroethylene	2013/09/24	8.1		%	50
		Spiked Blank	Toluene	2013/09/24		93	%	60 - 140
		RPD	Toluene	2013/09/24	7.6		%	50
		Spiked Blank	1,1,1-Trichloroethane	2013/09/24		105	%	60 - 140
		RPD	1,1,1-Trichloroethane	2013/09/24	1.2		%	50
		Spiked Blank	1,1,2-Trichloroethane	2013/09/24		104	%	60 - 140
		RPD	1,1,2-Trichloroethane	2013/09/24	6.3		%	50
		Spiked Blank	Trichloroethylene	2013/09/24		101	%	60 - 140
		RPD	Trichloroethylene	2013/09/24	4.9		%	50
		Spiked Blank	Vinyl Chloride	2013/09/24		99	%	60 - 140
		RPD	Vinyl Chloride	2013/09/24	4.2		%	50
		Spiked Blank	p+m-Xylene	2013/09/24		99	%	60 - 140
		RPD	p+m-Xylene	2013/09/24	6.4		%	50
		Spiked Blank	o-Xylene	2013/09/24		80	%	60 - 140
		RPD	o-Xylene	2013/09/24	7.8		%	50
		Spiked Blank	Trichlorofluoromethane (FREON 11)	2013/09/24		109	%	60 - 140
		RPD	Trichlorofluoromethane (FREON 11)	2013/09/24	0.5		%	50
		Method Blank	4-Bromofluorobenzene	2013/09/24		100	%	60 - 140
			D4-1,2-Dichloroethane	2013/09/24		117	%	60 - 140
			D8-Toluene	2013/09/24		85	%	60 - 140
			Acetone (2-Propanone)	2013/09/24	ND, RDL=0.50		ug/g	
			Benzene	2013/09/24	ND, RDL=0.020		ug/g	
			Bromodichloromethane	2013/09/24	ND, RDL=0.050		ug/g	
			Bromoform	2013/09/24	ND, RDL=0.050		ug/g	
			Bromomethane	2013/09/24	ND, RDL=0.050		ug/g	
			Carbon Tetrachloride	2013/09/24	ND, RDL=0.050		ug/g	
			Chlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			Chloroform	2013/09/24	ND, RDL=0.050		ug/g	
			Dibromochloromethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			1,3-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			1,4-Dichlorobenzene	2013/09/24	ND, RDL=0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2013/09/24	ND, RDL=0.050		ug/g	
			1,1-Dichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			cis-1,2-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			trans-1,2-Dichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			1,2-Dichloropropane	2013/09/24	ND, RDL=0.050		ug/g	
			cis-1,3-Dichloropropene	2013/09/24	ND, RDL=0.050		ug/g	
			trans-1,3-Dichloropropene	2013/09/24	ND, RDL=0.050		ug/g	
			Ethylbenzene	2013/09/24	ND, RDL=0.020		ug/g	
			Ethylene Dibromide	2013/09/24	ND, RDL=0.050		ug/g	
			Hexane	2013/09/24	ND, RDL=0.050		ug/g	

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Quality Assurance Report (Continued)

Maxxam Job Number: TB3G2874

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360566	PRB	Method Blank	Methylene Chloride(Dichloromethane)	2013/09/24	ND, RDL=0.050		ug/g	
			Methyl Isobutyl Ketone	2013/09/24	ND, RDL=0.50		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2013/09/24	ND, RDL=0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2013/09/24	ND, RDL=0.050		ug/g	
			Styrene	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			Tetrachloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			Toluene	2013/09/24	ND, RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			1,1,2-Trichloroethane	2013/09/24	ND, RDL=0.050		ug/g	
			Trichloroethylene	2013/09/24	ND, RDL=0.050		ug/g	
			Vinyl Chloride	2013/09/24	ND, RDL=0.020		ug/g	
			p+m-Xylene	2013/09/24	ND, RDL=0.020		ug/g	
			o-Xylene	2013/09/24	ND, RDL=0.020		ug/g	
			Trichlorofluoromethane (FREON 11)	2013/09/24	ND, RDL=0.050		ug/g	
3362267	PRB	Matrix Spike	1,4-Difluorobenzene	2013/09/26		106	%	60 - 140
			4-Bromofluorobenzene	2013/09/26		101	%	60 - 140
			D10-Ethylbenzene	2013/09/26		88	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/26		110	%	60 - 140
			F1 (C6-C10)	2013/09/26		108	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2013/09/26		106	%	60 - 140
			4-Bromofluorobenzene	2013/09/26		101	%	60 - 140
			D10-Ethylbenzene	2013/09/26		95	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/26		109	%	60 - 140
			F1 (C6-C10)	2013/09/26		99	%	80 - 120
		Method Blank	1,4-Difluorobenzene	2013/09/26		106	%	60 - 140
			4-Bromofluorobenzene	2013/09/26		100	%	60 - 140
			D10-Ethylbenzene	2013/09/26		88	%	30 - 130
			D4-1,2-Dichloroethane	2013/09/26		110	%	60 - 140
			F1 (C6-C10)	2013/09/26	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2013/09/26	ND, RDL=10		ug/g	
		RPD	F1 (C6-C10)	2013/09/26	NC		%	50
			F1 (C6-C10) - BTEX	2013/09/26	NC		%	50
3366674	LFE	Matrix Spike	D10-Anthracene	2013/09/28		74	%	50 - 130
			D14-Terphenyl (FS)	2013/09/28		71	%	50 - 130
			D8-Acenaphthylene	2013/09/28		57	%	50 - 130
			Acenaphthene	2013/09/28		68	%	50 - 130
			Acenaphthylene	2013/09/28		67	%	50 - 130
			Anthracene	2013/09/28		73	%	50 - 130
			Benzo(a)anthracene	2013/09/28		74	%	50 - 130
			Benzo(a)pyrene	2013/09/28		71	%	50 - 130
			Benzo(b/j)fluoranthene	2013/09/28		70	%	50 - 130
			Benzo(g,h,i)perylene	2013/09/28		66	%	50 - 130
			Benzo(k)fluoranthene	2013/09/28		61	%	50 - 130
			Chrysene	2013/09/28		73	%	50 - 130
			Dibenz(a,h)anthracene	2013/09/28		73	%	50 - 130
			Fluoranthene	2013/09/28		70	%	50 - 130
			Fluorene	2013/09/28		71	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/09/28		68	%	50 - 130
			1-Methylnaphthalene	2013/09/28		67	%	50 - 130
			2-Methylnaphthalene	2013/09/28		66	%	50 - 130
			Naphthalene	2013/09/28		60	%	50 - 130
			Phenanthrene	2013/09/28		70	%	50 - 130
			Pyrene	2013/09/28		69	%	50 - 130

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060.400.103
P.O. #: 16300R-20
Site Location: ROSE @ CATHCART RIDEAU RIVER

Quality Assurance Report (Continued)

Maxxam Job Number: TB3G2874

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3366674	LFE	Spiked Blank	D10-Anthracene	2013/09/28		88	%	50 - 130
			D14-Terphenyl (FS)	2013/09/28		87	%	50 - 130
			D8-Acenaphthylene	2013/09/28		60	%	50 - 130
			Acenaphthene	2013/09/28		93	%	50 - 130
			Acenaphthylene	2013/09/28		72	%	50 - 130
			Anthracene	2013/09/28		90	%	50 - 130
			Benzo(a)anthracene	2013/09/28		93	%	50 - 130
			Benzo(a)pyrene	2013/09/28		97	%	50 - 130
			Benzo(b/j)fluoranthene	2013/09/28		109	%	50 - 130
			Benzo(g,h,i)perylene	2013/09/28		108	%	50 - 130
			Benzo(k)fluoranthene	2013/09/28		115	%	50 - 130
			Chrysene	2013/09/28		98	%	50 - 130
			Dibenz(a,h)anthracene	2013/09/28		107	%	50 - 130
			Fluoranthene	2013/09/28		96	%	50 - 130
			Fluorene	2013/09/28		81	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/09/28		106	%	50 - 130
			1-Methylnaphthalene	2013/09/28		84	%	50 - 130
			2-Methylnaphthalene	2013/09/28		81	%	50 - 130
			Naphthalene	2013/09/28		78	%	50 - 130
			Phenanthrene	2013/09/28		93	%	50 - 130
			Pyrene	2013/09/28		98	%	50 - 130
		Method Blank	D10-Anthracene	2013/09/28		100	%	50 - 130
			D14-Terphenyl (FS)	2013/09/28		81	%	50 - 130
			D8-Acenaphthylene	2013/09/28		50	%	50 - 130
			Acenaphthene	2013/09/28	ND, RDL=0.0050		ug/g	
			Acenaphthylene	2013/09/28	ND, RDL=0.0050		ug/g	
			Anthracene	2013/09/28	ND, RDL=0.0050		ug/g	
			Benzo(a)anthracene	2013/09/28	ND, RDL=0.0050		ug/g	
			Benzo(a)pyrene	2013/09/28	ND, RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2013/09/28	ND, RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2013/09/28	ND, RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2013/09/28	ND, RDL=0.0050		ug/g	
			Chrysene	2013/09/28	ND, RDL=0.0050		ug/g	
			Dibenz(a,h)anthracene	2013/09/28	ND, RDL=0.0050		ug/g	
			Fluoranthene	2013/09/28	ND, RDL=0.0050		ug/g	
			Fluorene	2013/09/28	ND, RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2013/09/28	ND, RDL=0.0050		ug/g	
			1-Methylnaphthalene	2013/09/28	ND, RDL=0.0050		ug/g	
			2-Methylnaphthalene	2013/09/28	ND, RDL=0.0050		ug/g	
			Naphthalene	2013/09/28	ND, RDL=0.0050		ug/g	
			Phenanthrene	2013/09/28	ND, RDL=0.0050		ug/g	
			Pyrene	2013/09/28	ND, RDL=0.0050		ug/g	
		RPD	Acenaphthene	2013/09/28	NC		%	40
			Acenaphthylene	2013/09/28	15.6		%	40
			Anthracene	2013/09/28	5.4		%	40
			Benzo(a)anthracene	2013/09/28	1.6		%	40
			Benzo(a)pyrene	2013/09/28	0.6		%	40
			Benzo(b/j)fluoranthene	2013/09/28	5.4		%	40
			Benzo(g,h,i)perylene	2013/09/28	5.1		%	40
			Benzo(k)fluoranthene	2013/09/28	20.7		%	40
			Chrysene	2013/09/28	20.8		%	40
			Dibenz(a,h)anthracene	2013/09/28	0.8		%	40
			Fluoranthene	2013/09/28	1.5		%	40
			Fluorene	2013/09/28	NC		%	40
			Indeno(1,2,3-cd)pyrene	2013/09/28	1.7		%	40

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Quality Assurance Report (Continued)

Maxxam Job Number: TB3G2874

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3366674	LFE	RPD	1-Methylnaphthalene	2013/09/28	NC		%	40
			2-Methylnaphthalene	2013/09/28	NC		%	40
			Naphthalene	2013/09/28	NC		%	40
			Phenanthrene	2013/09/28	1.5		%	40
			Pyrene	2013/09/28	4.0		%	40
3367848	HES	Matrix Spike	o-Terphenyl	2013/09/30		86	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/30		107	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2013/09/30		107	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2013/09/30		107	%	50 - 130
		Spiked Blank	o-Terphenyl	2013/09/30		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/30		98	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2013/09/30		98	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2013/09/30		98	%	80 - 120
		Method Blank	o-Terphenyl	2013/09/30		98	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/09/30	ND, RDL=10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2013/09/30	ND, RDL=10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2013/09/30	ND, RDL=10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2013/09/30	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2013/09/30	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2013/09/30	NC		%	50
3367853	LHR	RPD	Moisture	2013/10/01	5.3		%	50
3369674	VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2013/10/01		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2013/10/01		101	%	75 - 125
			Acid Extractable Arsenic (As)	2013/10/01		99	%	75 - 125
			Acid Extractable Barium (Ba)	2013/10/01		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2013/10/01		105	%	75 - 125
			Acid Extractable Cadmium (Cd)	2013/10/01		102	%	75 - 125
			Acid Extractable Calcium (Ca)	2013/10/01		NC	%	75 - 125
			Acid Extractable Chromium (Cr)	2013/10/01		106	%	75 - 125
			Acid Extractable Cobalt (Co)	2013/10/01		106	%	75 - 125
			Acid Extractable Copper (Cu)	2013/10/01		106	%	75 - 125
			Acid Extractable Iron (Fe)	2013/10/01		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2013/10/01		102	%	75 - 125
			Acid Extractable Magnesium (Mg)	2013/10/01		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2013/10/01		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2013/10/01		107	%	75 - 125
			Acid Extractable Nickel (Ni)	2013/10/01		105	%	75 - 125
			Acid Extractable Phosphorus (P)	2013/10/01		NC	%	75 - 125
			Acid Extractable Potassium (K)	2013/10/01		NC	%	75 - 125
			Acid Extractable Selenium (Se)	2013/10/01		105	%	75 - 125
			Acid Extractable Silver (Ag)	2013/10/01		105	%	75 - 125
			Acid Extractable Sodium (Na)	2013/10/01		107	%	75 - 125
			Acid Extractable Strontium (Sr)	2013/10/01		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2013/10/01		96	%	75 - 125
			Acid Extractable Vanadium (V)	2013/10/01		107	%	75 - 125
			Acid Extractable Zinc (Zn)	2013/10/01		NC	%	75 - 125
		Spiked Blank	Acid Extractable Aluminum (Al)	2013/10/01		101	%	80 - 120
			Acid Extractable Antimony (Sb)	2013/10/01		97	%	80 - 120
			Acid Extractable Arsenic (As)	2013/10/01		97	%	80 - 120
			Acid Extractable Barium (Ba)	2013/10/01		98	%	80 - 120
			Acid Extractable Beryllium (Be)	2013/10/01		97	%	80 - 120
			Acid Extractable Cadmium (Cd)	2013/10/01		98	%	80 - 120
			Acid Extractable Calcium (Ca)	2013/10/01		97	%	80 - 120
			Acid Extractable Chromium (Cr)	2013/10/01		102	%	80 - 120
			Acid Extractable Cobalt (Co)	2013/10/01		106	%	80 - 120

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P.O. #: 16300R-20
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Quality Assurance Report (Continued)

Maxxam Job Number: TB3G2874

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3369674	VIV	Spiked Blank	Acid Extractable Copper (Cu)	2013/10/01		103	%	80 - 120
			Acid Extractable Iron (Fe)	2013/10/01		106	%	80 - 120
			Acid Extractable Lead (Pb)	2013/10/01		100	%	80 - 120
			Acid Extractable Magnesium (Mg)	2013/10/01		101	%	80 - 120
			Acid Extractable Manganese (Mn)	2013/10/01		100	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2013/10/01		100	%	80 - 120
			Acid Extractable Nickel (Ni)	2013/10/01		106	%	80 - 120
			Acid Extractable Phosphorus (P)	2013/10/01		92	%	80 - 120
			Acid Extractable Potassium (K)	2013/10/01		96	%	80 - 120
			Acid Extractable Selenium (Se)	2013/10/01		101	%	80 - 120
			Acid Extractable Silver (Ag)	2013/10/01		99	%	80 - 120
			Acid Extractable Sodium (Na)	2013/10/01		101	%	80 - 120
			Acid Extractable Strontium (Sr)	2013/10/01		101	%	80 - 120
			Acid Extractable Thallium (Tl)	2013/10/01		96	%	80 - 120
			Acid Extractable Vanadium (V)	2013/10/01		101	%	80 - 120
			Acid Extractable Zinc (Zn)	2013/10/01		101	%	80 - 120
		Method Blank	Acid Extractable Aluminum (Al)	2013/10/01	ND, RDL=50		ug/g	
			Acid Extractable Antimony (Sb)	2013/10/01	ND, RDL=0.20		ug/g	
			Acid Extractable Arsenic (As)	2013/10/01	ND, RDL=1.0		ug/g	
			Acid Extractable Barium (Ba)	2013/10/01	ND, RDL=0.50		ug/g	
			Acid Extractable Beryllium (Be)	2013/10/01	ND, RDL=0.20		ug/g	
			Acid Extractable Cadmium (Cd)	2013/10/01	ND, RDL=0.10		ug/g	
			Acid Extractable Calcium (Ca)	2013/10/01	ND, RDL=50		ug/g	
			Acid Extractable Chromium (Cr)	2013/10/01	ND, RDL=1.0		ug/g	
			Acid Extractable Cobalt (Co)	2013/10/01	ND, RDL=0.10		ug/g	
			Acid Extractable Copper (Cu)	2013/10/01	ND, RDL=0.50		ug/g	
			Acid Extractable Iron (Fe)	2013/10/01	ND, RDL=50		ug/g	
			Acid Extractable Lead (Pb)	2013/10/01	ND, RDL=1.0		ug/g	
			Acid Extractable Magnesium (Mg)	2013/10/01	ND, RDL=50		ug/g	
			Acid Extractable Manganese (Mn)	2013/10/01	ND, RDL=1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2013/10/01	ND, RDL=0.50		ug/g	
			Acid Extractable Nickel (Ni)	2013/10/01	ND, RDL=0.50		ug/g	
			Acid Extractable Phosphorus (P)	2013/10/01	ND, RDL=50		ug/g	
			Acid Extractable Potassium (K)	2013/10/01	ND, RDL=200		ug/g	
			Acid Extractable Selenium (Se)	2013/10/01	ND, RDL=0.50		ug/g	
			Acid Extractable Silver (Ag)	2013/10/01	ND, RDL=0.20		ug/g	
			Acid Extractable Sodium (Na)	2013/10/01	ND, RDL=100		ug/g	
			Acid Extractable Strontium (Sr)	2013/10/01	ND, RDL=1.0		ug/g	
			Acid Extractable Thallium (Tl)	2013/10/01	ND, RDL=0.050		ug/g	
			Acid Extractable Vanadium (V)	2013/10/01	ND, RDL=5.0		ug/g	
			Acid Extractable Zinc (Zn)	2013/10/01	ND, RDL=5.0		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2013/10/01	NC		%	30
			Acid Extractable Arsenic (As)	2013/10/01	NC		%	30
			Acid Extractable Barium (Ba)	2013/10/01	0.1		%	30
			Acid Extractable Beryllium (Be)	2013/10/01	NC		%	30
			Acid Extractable Cadmium (Cd)	2013/10/01	NC		%	30
			Acid Extractable Chromium (Cr)	2013/10/01	0.8		%	30
			Acid Extractable Cobalt (Co)	2013/10/01	0.1		%	30
			Acid Extractable Copper (Cu)	2013/10/01	0.8		%	30
			Acid Extractable Lead (Pb)	2013/10/01	0.5		%	30
			Acid Extractable Molybdenum (Mo)	2013/10/01	NC		%	30
			Acid Extractable Nickel (Ni)	2013/10/01	1.6		%	30
			Acid Extractable Selenium (Se)	2013/10/01	NC		%	30
			Acid Extractable Silver (Ag)	2013/10/01	NC		%	30
			Acid Extractable Thallium (Tl)	2013/10/01	NC		%	30

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Quality Assurance Report (Continued)

Maxxam Job Number: TB3G2874

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3369674	VIV	RPD	Acid Extractable Vanadium (V)	2013/10/01	NC		%	30
			Acid Extractable Zinc (Zn)	2013/10/01	4.8		%	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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B3G2874

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

Cristina Carriere, Scientific Services

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

Michael Wang, Senior Analyst

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

==========

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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Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: CATHERINE ST. AND KENT ST.
Your C.O.C. #: 43681403, 436814-03-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/10/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3H9711
Received: 2013/10/21, 18:45

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	2	N/A	2013/10/28	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum (1)	2	N/A	2013/10/25	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	2	2013/10/22	2013/10/23	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/10/23	2013/10/25	OTT SOP-00001	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/10/23	2013/10/26	OTT SOP-00001	CCME CWS
F4G (CCME Hydrocarbons Gravimetric)	1	2013/10/29	2013/10/29	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	2	2013/10/25	2013/10/28	CAM SOP-00447	EPA 6020
MOISTURE	2	N/A	2013/10/24	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	2	2013/10/24	2013/10/25	CAM SOP - 00318	EPA 8270
pH CaCl2 EXTRACT (1)	2	2013/10/28	2013/10/28	CAM SOP-00413	SM 4500H+ B
Volatile Organic Compounds in Soil (1)	2	2013/10/23	2013/10/24	CAM SOP-00226	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

Maxxam Job #: B3H9711
Report Date: 2013/10/29

Stantec Consulting Ltd
Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: JU

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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.

Total cover pages: 2

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RESULTS OF ANALYSES OF SOIL

Maxxam ID		TO2115	TO2116		
Sampling Date		2013/10/21 10:30	2013/10/21 11:30		
	Units	**BH13-234 SS2**	**BH13-234 SS6**	**RDL**	**QC Batch**
Inorganics					
Moisture	%	42	11	0.2	3394259
Available (CaCl2) pH	pH	7.80	8.10		3400894

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Sampler Initials: JU

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TO2115	TO2116		
Sampling Date		2013/10/21 10:30	2013/10/21 11:30		
	Units	**BH13-234 SS2**	**BH13-234 SS6**	**RDL**	**QC Batch**
Metals					
Acid Extractable Aluminum (Al)	ug/g	3700	33000	50	3398898
Acid Extractable Antimony (Sb)	ug/g	ND	ND	0.20	3398898
Acid Extractable Arsenic (As)	ug/g	ND	2.4	1.0	3398898
Acid Extractable Barium (Ba)	ug/g	30	430	0.50	3398898
Acid Extractable Beryllium (Be)	ug/g	ND	0.73	0.20	3398898
Acid Extractable Cadmium (Cd)	ug/g	ND	0.10	0.10	3398898
Acid Extractable Calcium (Ca)	ug/g	4200	13000	50	3398898
Acid Extractable Chromium (Cr)	ug/g	12	110	1.0	3398898
Acid Extractable Cobalt (Co)	ug/g	2.8	26	0.10	3398898
Acid Extractable Copper (Cu)	ug/g	6.4	57	0.50	3398898
Acid Extractable Iron (Fe)	ug/g	7300	50000	50	3398898
Acid Extractable Lead (Pb)	ug/g	1.3	6.2	1.0	3398898
Acid Extractable Magnesium (Mg)	ug/g	2100	24000	50	3398898
Acid Extractable Manganese (Mn)	ug/g	89	730	1.0	3398898
Acid Extractable Molybdenum (Mo)	ug/g	ND	1.1	0.50	3398898
Acid Extractable Nickel (Ni)	ug/g	7.1	69	0.50	3398898
Acid Extractable Phosphorus (P)	ug/g	590	1100	50	3398898
Acid Extractable Potassium (K)	ug/g	460	15000	200	3398898
Acid Extractable Selenium (Se)	ug/g	ND	ND	0.50	3398898
Acid Extractable Silver (Ag)	ug/g	ND	ND	0.20	3398898
Acid Extractable Sodium (Na)	ug/g	570	1800	100	3398898
Acid Extractable Strontium (Sr)	ug/g	62	75	1.0	3398898
Acid Extractable Thallium (Tl)	ug/g	ND	0.51	0.050	3398898
Acid Extractable Vanadium (V)	ug/g	14	120	5.0	3398898
Acid Extractable Zinc (Zn)	ug/g	14	140	5.0	3398898

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

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SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		TO2115		TO2116		
Sampling Date		2013/10/21 10:30		2013/10/21 11:30		
	Units	**BH13-234 SS2**	**RDL**	**BH13-234 SS6**	**RDL**	**QC Batch**
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/g	0.22	0.028	ND	0.0071	3393709
Polyaromatic Hydrocarbons						
Acenaphthene	ug/g	ND	0.020	ND	0.0050	3396938
Acenaphthylene	ug/g	ND	0.020	ND	0.0050	3396938
Anthracene	ug/g	ND	0.020	ND	0.0050	3396938
Benzo(a)anthracene	ug/g	ND	0.020	ND	0.0050	3396938
Benzo(a)pyrene	ug/g	ND	0.020	ND	0.0050	3396938
Benzo(b/j)fluoranthene	ug/g	ND	0.020	ND	0.0050	3396938
Benzo(g,h,i)perylene	ug/g	ND	0.020	ND	0.0050	3396938
Benzo(k)fluoranthene	ug/g	ND	0.020	ND	0.0050	3396938
Chrysene	ug/g	ND	0.020	ND	0.0050	3396938
Dibenz(a,h)anthracene	ug/g	ND	0.020	ND	0.0050	3396938
Fluoranthene	ug/g	ND	0.020	ND	0.0050	3396938
Fluorene	ug/g	ND	0.020	ND	0.0050	3396938
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.020	ND	0.0050	3396938
1-Methylnaphthalene	ug/g	0.083	0.020	ND	0.0050	3396938
2-Methylnaphthalene	ug/g	0.13	0.020	ND	0.0050	3396938
Naphthalene	ug/g	0.050	0.020	ND	0.0050	3396938
Phenanthrene	ug/g	0.061	0.020	ND	0.0050	3396938
Pyrene	ug/g	ND	0.020	ND	0.0050	3396938
Surrogate Recovery (%)						
D10-Anthracene	%	70		88		3396938
D14-Terphenyl (FS)	%	71		94		3396938
D8-Acenaphthylene	%	63		80		3396938

ND = Not detected
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QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TO2115	TO2116		
Sampling Date		2013/10/21 10:30	2013/10/21 11:30		
	Units	**BH13-234 SS2**	**BH13-234 SS6**	**RDL**	**QC Batch**
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	0.050	3393877
Volatile Organics					
Acetone (2-Propanone)	ug/g	ND	ND	0.50	3380997
Benzene	ug/g	ND	ND	0.020	3380997
Bromodichloromethane	ug/g	ND	ND	0.050	3380997
Bromoform	ug/g	ND	ND	0.050	3380997
Bromomethane	ug/g	ND	ND	0.050	3380997
Carbon Tetrachloride	ug/g	ND	ND	0.050	3380997
Chlorobenzene	ug/g	ND	ND	0.050	3380997
Chloroform	ug/g	ND	ND	0.050	3380997
Dibromochloromethane	ug/g	ND	ND	0.050	3380997
1,2-Dichlorobenzene	ug/g	ND	ND	0.050	3380997
1,3-Dichlorobenzene	ug/g	ND	ND	0.050	3380997
1,4-Dichlorobenzene	ug/g	ND	ND	0.050	3380997
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	0.050	3380997
1,1-Dichloroethane	ug/g	ND	ND	0.050	3380997
1,2-Dichloroethane	ug/g	ND	ND	0.050	3380997
1,1-Dichloroethylene	ug/g	ND	ND	0.050	3380997
cis-1,2-Dichloroethylene	ug/g	ND	ND	0.050	3380997
trans-1,2-Dichloroethylene	ug/g	ND	ND	0.050	3380997
1,2-Dichloropropane	ug/g	ND	ND	0.050	3380997
cis-1,3-Dichloropropene	ug/g	ND	ND	0.030	3380997
trans-1,3-Dichloropropene	ug/g	ND	ND	0.040	3380997
Ethylbenzene	ug/g	ND	ND	0.020	3380997
Ethylene Dibromide	ug/g	ND	ND	0.050	3380997
Hexane	ug/g	ND	ND	0.050	3380997
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	0.050	3380997
Methyl Isobutyl Ketone	ug/g	ND	ND	0.50	3380997
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	0.50	3380997
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	0.050	3380997
Styrene	ug/g	ND	ND	0.050	3380997
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	0.050	3380997
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	0.050	3380997

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

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VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TO2115	TO2116		
Sampling Date		2013/10/21 10:30	2013/10/21 11:30		
	Units	**BH13-234 SS2**	**BH13-234 SS6**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/g	ND	ND	0.050	3380997
Toluene	ug/g	ND	ND	0.020	3380997
1,1,1-Trichloroethane	ug/g	ND	ND	0.050	3380997
1,1,2-Trichloroethane	ug/g	ND	ND	0.050	3380997
Trichloroethylene	ug/g	ND	ND	0.050	3380997
Vinyl Chloride	ug/g	ND	ND	0.020	3380997
p+m-Xylene	ug/g	ND	ND	0.020	3380997
o-Xylene	ug/g	ND	ND	0.020	3380997
Xylene (Total)	ug/g	ND	ND	0.020	3380997
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	0.050	3380997
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	95	95		3380997
D10-o-Xylene	%	121	89		3380997
D4-1,2-Dichloroethane	%	99	99		3380997
D8-Toluene	%	101	102		3380997

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		TO2115	TO2116		
Sampling Date		2013/10/21 10:30	2013/10/21 11:30		
	Units	**BH13-234 SS2**	**BH13-234 SS6**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons					
F1 (C6-C10)	ug/g	ND	ND	10	3394066
F1 (C6-C10) - BTEX	ug/g	ND	ND	10	3394066
F2-F4 Hydrocarbons					
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g		1300	100	3402304
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	10	3398670
F3 (C16-C34 Hydrocarbons)	ug/g	ND	78	10	3398670
F4 (C34-C50 Hydrocarbons)	ug/g	ND	340	10	3398670
Reached Baseline at C50	ug/g	YES	NO		3398670
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	107	106		3394066
4-Bromofluorobenzene	%	105	91		3394066
D10-Ethylbenzene	%	81	90		3394066
D4-1,2-Dichloroethane	%	105	107		3394066
o-Terphenyl	%	83	82		3398670

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

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Test Summary

Maxxam ID TO2115 **Collected** 2013/10/21
Sample ID BH13-234 SS2 **Shipped**
Matrix Soil **Received** 2013/10/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3393709	N/A	2013/10/28	Automated Statchk
1,3-Dichloropropene Sum	CALC	3393877	N/A	2013/10/25	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3394066	2013/10/22	2013/10/23	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3398670	2013/10/23	2013/10/25	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3398898	2013/10/25	2013/10/28	John Bowman
MOISTURE	BAL	3394259	N/A	2013/10/24	Raigamage Perera
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3396938	2013/10/24	2013/10/25	Darryl Tiller
pH CaCl2 EXTRACT		3400894	2013/10/28	2013/10/28	Yogesh Patel
Volatile Organic Compounds in Soil	P&T/MS	3380997	2013/10/23	2013/10/24	Xueming Jiang

Maxxam ID TO2116 **Collected** 2013/10/21
Sample ID BH13-234 SS6 **Shipped**
Matrix Soil **Received** 2013/10/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3393709	N/A	2013/10/28	Automated Statchk
1,3-Dichloropropene Sum	CALC	3393877	N/A	2013/10/25	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3394066	2013/10/22	2013/10/23	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3398670	2013/10/23	2013/10/26	Habiba Essak
F4G (CCME Hydrocarbons Gravimetric)	BAL	3402304	2013/10/29	2013/10/29	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3398898	2013/10/25	2013/10/28	John Bowman
MOISTURE	BAL	3394259	N/A	2013/10/24	Raigamage Perera
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3396938	2013/10/24	2013/10/25	Darryl Tiller
pH CaCl2 EXTRACT		3400894	2013/10/28	2013/10/28	Yogesh Patel
Volatile Organic Compounds in Soil	P&T/MS	3380997	2013/10/23	2013/10/24	Xueming Jiang

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Stantec Consulting Ltd
Client Project #: 163401060

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Test Summary

Maxxam ID TO2116 Dup
Sample ID BH13-234 SS6
Matrix Soil

Collected 2013/10/21
Shipped
Received 2013/10/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Soil	P&T/MS	3380997	2013/10/23	2013/10/24	Xueming Jiang

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Package 1	8.3°C

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

GENERAL COMMENTS

Sample TO2115-01: PAH Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly. Detection limits were also adjusted for high moisture content.

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Report Date: 2013/10/29

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Your P.O. #: 16300R-20
Sampler Initials: JU

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3380997	4-Bromofluorobenzene	2013/10/24	100	60 - 140	99	60 - 140	93	%		
3380997	D10-o-Xylene	2013/10/24	90	60 - 130	97	60 - 130	104	%		
3380997	D4-1,2-Dichloroethane	2013/10/24	97	60 - 140	98	60 - 140	95	%		
3380997	D8-Toluene	2013/10/24	101	60 - 140	100	60 - 140	104	%		
3380997	Acetone (2-Propanone)	2013/10/24	97	60 - 140	97	60 - 140	ND, RDL=0.50	ug/g	NC	50
3380997	Benzene	2013/10/24	100	60 - 140	99	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	Bromodichloromethane	2013/10/24	103	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Bromoform	2013/10/24	100	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Bromomethane	2013/10/24	99	60 - 140	96	60 - 140	ND, RDL=0.050	ug/g	NC	50
3380997	Carbon Tetrachloride	2013/10/24	104	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Chlorobenzene	2013/10/24	102	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Chloroform	2013/10/24	99	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Dibromochloromethane	2013/10/24	103	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,2-Dichlorobenzene	2013/10/24	99	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,3-Dichlorobenzene	2013/10/24	100	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,4-Dichlorobenzene	2013/10/24	97	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Dichlorodifluoromethane (FREON 12)	2013/10/24	98	60 - 140	97	60 - 140	ND, RDL=0.050	ug/g	NC	50
3380997	1,1-Dichloroethane	2013/10/24	102	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,2-Dichloroethane	2013/10/24	99	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,1-Dichloroethylene	2013/10/24	112	60 - 140	110	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	cis-1,2-Dichloroethylene	2013/10/24	98	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	trans-1,2-Dichloroethylene	2013/10/24	100	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,2-Dichloropropane	2013/10/24	102	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	cis-1,3-Dichloropropene	2013/10/24	98	60 - 140	98	60 - 130	ND, RDL=0.030	ug/g	NC	50
3380997	trans-1,3-Dichloropropene	2013/10/24	106	60 - 140	105	60 - 130	ND, RDL=0.040	ug/g	NC	50
3380997	Ethylbenzene	2013/10/24	99	60 - 140	97	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	Ethylene Dibromide	2013/10/24	99	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Hexane	2013/10/24	100	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Methylene Chloride(Dichloromethane)	2013/10/24	98	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Methyl Isobutyl Ketone	2013/10/24	99	60 - 140	101	60 - 130	ND, RDL=0.50	ug/g	NC	50
3380997	Methyl Ethyl Ketone (2-Butanone)	2013/10/24	96	60 - 140	97	60 - 140	ND, RDL=0.50	ug/g	NC	50
3380997	Methyl t-butyl ether (MTBE)	2013/10/24	98	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Styrene	2013/10/24	104	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,1,1,2-Tetrachloroethane	2013/10/24	101	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,1,2,2-Tetrachloroethane	2013/10/24	101	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Tetrachloroethylene	2013/10/24	104	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Toluene	2013/10/24	98	60 - 140	97	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	1,1,1-Trichloroethane	2013/10/24	102	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,1,2-Trichloroethane	2013/10/24	97	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50

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Maxxam Job #: B3H9711
Report Date: 2013/10/29

Stantec Consulting Ltd
Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: JU

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3380997	Trichloroethylene	2013/10/24	100	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Vinyl Chloride	2013/10/24	92	60 - 140	91	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	p+m-Xylene	2013/10/24	102	60 - 140	100	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	o-Xylene	2013/10/24	98	60 - 140	97	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	Trichlorofluoromethane (FREON 11)	2013/10/24	99	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Xylene (Total)	2013/10/24					ND, RDL=0.020	ug/g	NC	50
3394066	1,4-Difluorobenzene	2013/10/23	107	60 - 140	109	60 - 140	107	%		
3394066	4-Bromofluorobenzene	2013/10/23	100	60 - 140	109	60 - 140	101	%		
3394066	D10-Ethylbenzene	2013/10/23	92	30 - 130	100	30 - 130	89	%		
3394066	D4-1,2-Dichloroethane	2013/10/23	104	60 - 140	106	60 - 140	104	%		
3394066	F1 (C6-C10)	2013/10/23	96	60 - 140	104	80 - 120	ND, RDL=10	ug/g	NC	50
3394066	F1 (C6-C10) - BTEX	2013/10/23					ND, RDL=10	ug/g	NC	50
3394259	Moisture	2013/10/24							20.0	50
3396938	D10-Anthracene	2013/10/25	85	50 - 130	87	50 - 130	95	%		
3396938	D14-Terphenyl (FS)	2013/10/25	92	50 - 130	89	50 - 130	97	%		
3396938	D8-Acenaphthylene	2013/10/25	81	50 - 130	85	50 - 130	87	%		
3396938	Acenaphthene	2013/10/25	80	50 - 130	82	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Acenaphthylene	2013/10/25	80	50 - 130	83	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Anthracene	2013/10/25	79	50 - 130	79	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Benzo(a)anthracene	2013/10/25	82	50 - 130	81	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Benzo(a)pyrene	2013/10/25	83	50 - 130	83	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Benzo(b/j)fluoranthene	2013/10/25	91	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Benzo(g,h,i)perylene	2013/10/25	88	50 - 130	92	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Benzo(k)fluoranthene	2013/10/25	91	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Chrysene	2013/10/25	82	50 - 130	81	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Dibenz(a,h)anthracene	2013/10/25	86	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Fluoranthene	2013/10/25	82	50 - 130	81	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Fluorene	2013/10/25	90	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Indeno(1,2,3-cd)pyrene	2013/10/25	83	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	1-Methylnaphthalene	2013/10/25	78	50 - 130	80	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	2-Methylnaphthalene	2013/10/25	78	50 - 130	79	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Naphthalene	2013/10/25	77	50 - 130	77	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Phenanthrene	2013/10/25	78	50 - 130	80	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3396938	Pyrene	2013/10/25	80	50 - 130	80	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3398670	o-Terphenyl	2013/10/25	74	30 - 130	79	30 - 130	76	%		
3398670	F2 (C10-C16 Hydrocarbons)	2013/10/25	102	50 - 130	106	80 - 120	ND, RDL=10	ug/g	NC	50
3398670	F3 (C16-C34 Hydrocarbons)	2013/10/25	102	50 - 130	106	80 - 120	ND, RDL=10	ug/g	36.2	50
3398670	F4 (C34-C50 Hydrocarbons)	2013/10/25	102	50 - 130	106	80 - 120	ND, RDL=10	ug/g	NC	50
3398898	Acid Extractable Aluminum (Al)	2013/10/28	NC	75 - 125	102	80 - 120	ND, RDL=50	ug/g		

Maxxam Job #: B3H9711
Report Date: 2013/10/29

Stantec Consulting Ltd
Client Project #: 163401060

Your P.O. #: 16300R-20
Sampler Initials: JU

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3398898	Acid Extractable Antimony (Sb)	2013/10/28	102	75 - 125	108	80 - 120	ND, RDL=0.20	ug/g	NC	30
3398898	Acid Extractable Arsenic (As)	2013/10/28	99	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	5.1	30
3398898	Acid Extractable Barium (Ba)	2013/10/28	NC	75 - 125	98	80 - 120	ND, RDL=0.50	ug/g	0.2	30
3398898	Acid Extractable Beryllium (Be)	2013/10/28	102	75 - 125	101	80 - 120	ND, RDL=0.20	ug/g	NC	30
3398898	Acid Extractable Cadmium (Cd)	2013/10/28	103	75 - 125	104	80 - 120	ND, RDL=0.10	ug/g	NC	30
3398898	Acid Extractable Calcium (Ca)	2013/10/28	NC	75 - 125	99	80 - 120	ND, RDL=50	ug/g		
3398898	Acid Extractable Chromium (Cr)	2013/10/28	101	75 - 125	98	80 - 120	ND, RDL=1.0	ug/g	4.2	30
3398898	Acid Extractable Cobalt (Co)	2013/10/28	105	75 - 125	102	80 - 120	ND, RDL=0.10	ug/g	7.8	30
3398898	Acid Extractable Copper (Cu)	2013/10/28	NC	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	2.6	30
3398898	Acid Extractable Iron (Fe)	2013/10/28	NC	75 - 125	102	80 - 120	ND, RDL=50	ug/g		
3398898	Acid Extractable Lead (Pb)	2013/10/28	103	75 - 125	104	80 - 120	ND, RDL=1.0	ug/g	1.7	30
3398898	Acid Extractable Magnesium (Mg)	2013/10/28	NC	75 - 125	99	80 - 120	ND, RDL=50	ug/g		
3398898	Acid Extractable Manganese (Mn)	2013/10/28	NC	75 - 125	98	80 - 120	ND, RDL=1.0	ug/g		
3398898	Acid Extractable Molybdenum (Mo)	2013/10/28	105	75 - 125	103	80 - 120	ND, RDL=0.50	ug/g	NC	30
3398898	Acid Extractable Nickel (Ni)	2013/10/28	NC	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	4.8	30
3398898	Acid Extractable Phosphorus (P)	2013/10/28	NC	75 - 125	111	80 - 120	ND, RDL=50	ug/g		
3398898	Acid Extractable Potassium (K)	2013/10/28	NC	75 - 125	94	80 - 120	ND, RDL=200	ug/g		
3398898	Acid Extractable Selenium (Se)	2013/10/28	100	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	NC	30
3398898	Acid Extractable Silver (Ag)	2013/10/28	104	75 - 125	104	80 - 120	ND, RDL=0.20	ug/g	NC	30
3398898	Acid Extractable Sodium (Na)	2013/10/28	98	75 - 125	93	80 - 120	ND, RDL=100	ug/g		
3398898	Acid Extractable Strontium (Sr)	2013/10/28	NC	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g		
3398898	Acid Extractable Thallium (Tl)	2013/10/28	92	75 - 125	93	80 - 120	ND, RDL=0.050	ug/g	NC	30
3398898	Acid Extractable Vanadium (V)	2013/10/28	103	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	NC	30
3398898	Acid Extractable Zinc (Zn)	2013/10/28	NC	75 - 125	102	80 - 120	ND, RDL=5.0	ug/g	1.3	30
3402304	F4G-sg (Grav. Heavy Hydrocarbons)	2013/10/29			84%	65 - 135	ND, RDL=100	ug/g	0	50

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B3H9711

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

Cristina Carriere, Scientific Services

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

Yuan Zhou, Analyst II

==========

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

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Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-653-6266 Fax:(905) 817-5779 www.maxxam.ca

STANTEC CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#2267 Stantec Consulting Ltd	Company Name:	Stantec Consulting Ltd.	Quotation #:	B31780	MAXXAM JOB #:	BOTTLE ORDER #: 436814
Contact Name:	Accounts Payable	Contact Name:	Jill Peters-Dechman	Task #:	400.103		
Address:	1331 Clyde Avenue Suite 400	Address:	Suite 400, 1331 Clyde Avenue Ottawa, ON	Project #:	163401060.400.103		
	Ottawa ON K2C 3G4			Profit Centre:	1225	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(613)722-4420 Fax: (613)738-0721	Phone:	613-722-4420 Fax: 613-722-2799	Site #:	Catherine St. and Kent St.	C#436814-03-01	Parnian Baber
Email:	Stantec.Accounts.Payable.Invoices@Stantec.com	Email:	jill.peters-dechman@stantec.com, edd@stantec.c	Sampled By:	J.U.		

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

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

SPECIAL INSTRUCTIONS

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

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

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

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	O'Reg 153 Petroleum Hydrocarbons (Soil)	O'Reg 153 Volatile Organics (Soil)	O'Reg 153 PAHs (Soil)	Acid Extr. Metals (aqua regia) by ICPMS	pH CaCl2 EXTRACT	# of Bottles	Comments
1		BH13-234 SS2	2013/10/21	10:30	Soil	N	N	✓	✓	✓	✓	✓	4	
2		BH13-234 SS6	2013/10/21	11:30	Soil	N	N	✓	✓	✓	✓	✓	4	
3														
4														
5														
6														
7														
8														
9														
10														

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 #)*

21-Oct-13 18:45
Parnian Baber
B3H9711
S_0 OTT-002

REC'D IN OTTAWA

on ice

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
J. Urban	2013/10/21	18:45	C. Bergeron	2013/10/21	18:45	28

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	8/10/17	Present	X	
		Intact	X	

* 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.

White: Maxxam Yellow: Client

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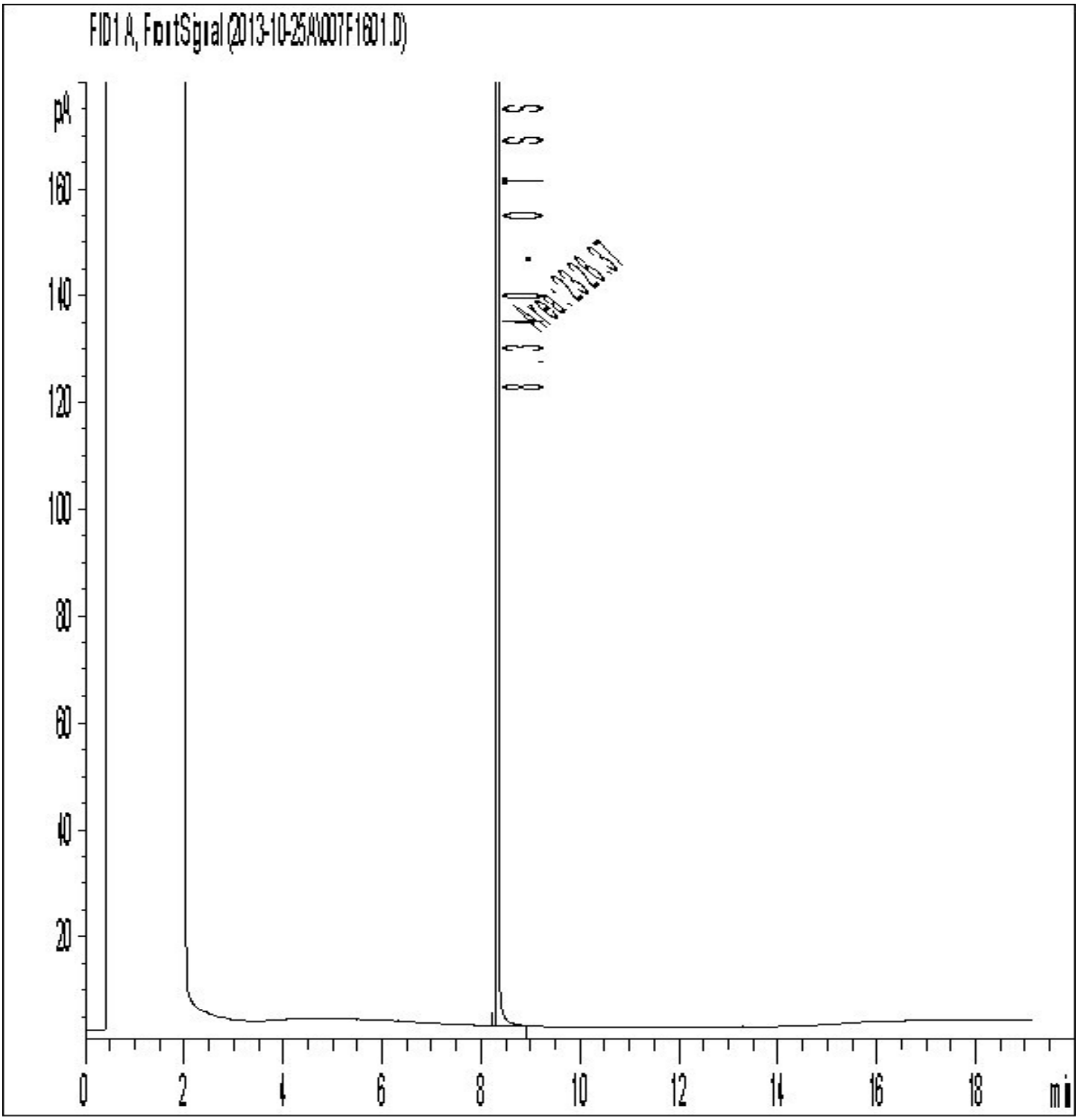
Report Date: 2013/10/29
Maxxam Job #: B3H9711
Maxxam Sample: TO2115

Stantec Consulting Ltd
Client Project #: 163401060

Client ID: BH13-234 SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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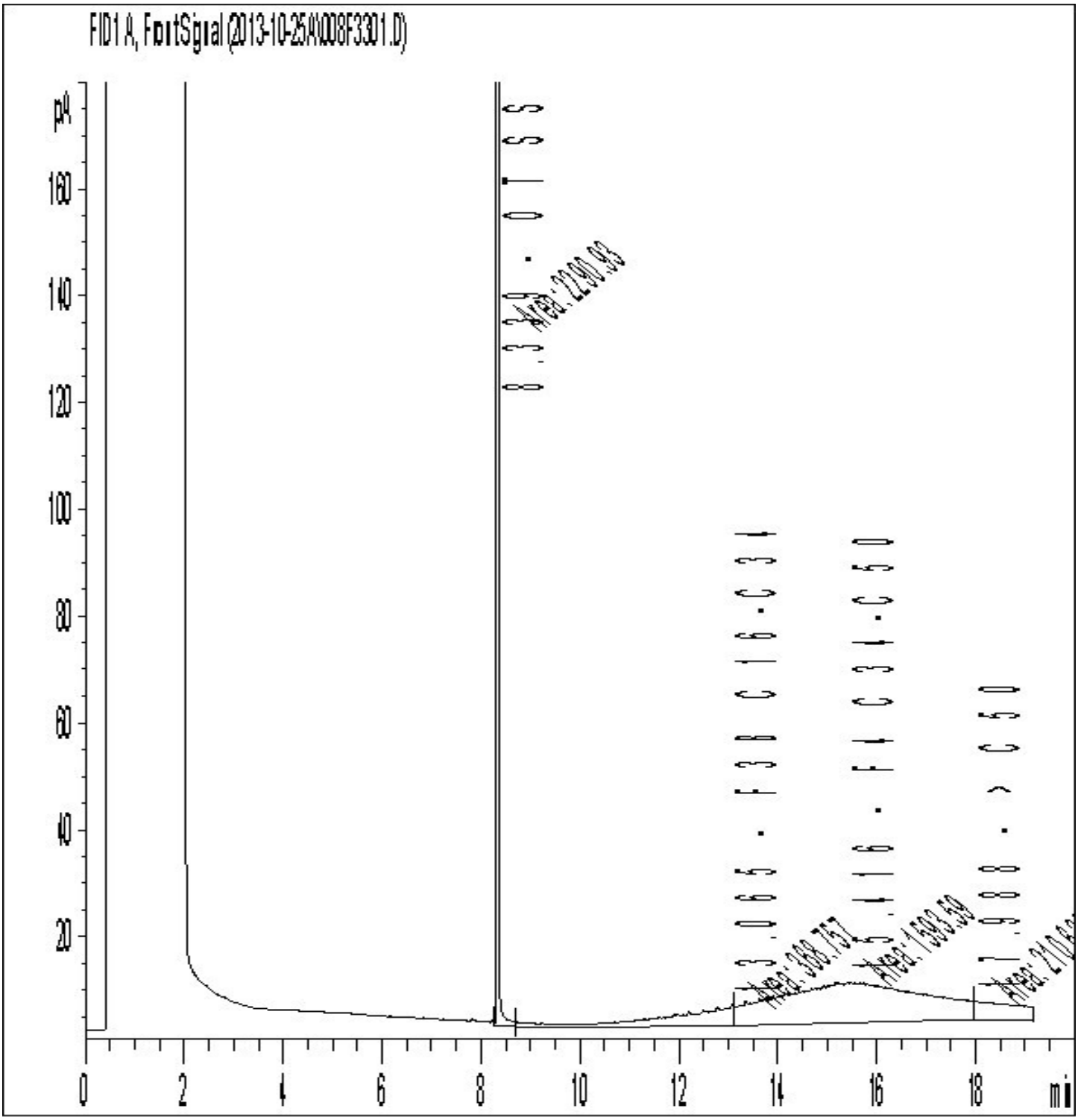
Report Date: 2013/10/29
Maxxam Job #: B3H9711
Maxxam Sample: TO2116

Stantec Consulting Ltd
Client Project #: 163401060

Client ID: BH13-234 SS6

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Your C.O.C. #: 44042501, 440425-01-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/10/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3I0961
Received: 2013/10/23, 11:05

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	1	N/A	2013/10/29	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum (1)	1	N/A	2013/10/29	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2013/10/25	2013/10/28	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/10/25	2013/10/26	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	1	2013/10/28	2013/10/29	CAM SOP-00447	EPA 6020
MOISTURE	1	N/A	2013/10/28	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2013/10/26	2013/10/26	CAM SOP - 00318	EPA 8270
Volatile Organic Compounds in Soil (1)	1	2013/10/25	2013/10/26	CAM SOP-00226	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

Maxxam Job #: B3I0961
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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.

Total cover pages: 2

Maxxam Job #: B3I0961
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

RESULTS OF ANALYSES OF SOIL

Maxxam ID		TO7523		
Sampling Date		2013/10/22 17:00		
	Units	**BH13-213 SS1**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	8.6	0.2	3398732

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3I0961
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TO7523		
Sampling Date		2013/10/22 17:00		
	Units	**BH13-213 SS1**	**RDL**	**QC Batch**
Metals				
Acid Extractable Aluminum (Al)	ug/g	2300	50	3400920
Acid Extractable Antimony (Sb)	ug/g	ND	0.20	3400920
Acid Extractable Arsenic (As)	ug/g	1.1	1.0	3400920
Acid Extractable Barium (Ba)	ug/g	43	0.50	3400920
Acid Extractable Beryllium (Be)	ug/g	ND	0.20	3400920
Acid Extractable Cadmium (Cd)	ug/g	ND	0.10	3400920
Acid Extractable Calcium (Ca)	ug/g	180000	50	3400920
Acid Extractable Chromium (Cr)	ug/g	6.3	1.0	3400920
Acid Extractable Cobalt (Co)	ug/g	2.6	0.10	3400920
Acid Extractable Copper (Cu)	ug/g	9.2	0.50	3400920
Acid Extractable Iron (Fe)	ug/g	6800	50	3400920
Acid Extractable Lead (Pb)	ug/g	3.2	1.0	3400920
Acid Extractable Magnesium (Mg)	ug/g	7200	50	3400920
Acid Extractable Manganese (Mn)	ug/g	230	1.0	3400920
Acid Extractable Molybdenum (Mo)	ug/g	ND	0.50	3400920
Acid Extractable Nickel (Ni)	ug/g	5.1	0.50	3400920
Acid Extractable Phosphorus (P)	ug/g	890	50	3400920
Acid Extractable Potassium (K)	ug/g	650	200	3400920
Acid Extractable Selenium (Se)	ug/g	ND	0.50	3400920
Acid Extractable Silver (Ag)	ug/g	ND	0.20	3400920
Acid Extractable Sodium (Na)	ug/g	710	100	3400920
Acid Extractable Strontium (Sr)	ug/g	260	1.0	3400920
Acid Extractable Thallium (Tl)	ug/g	0.052	0.050	3400920
Acid Extractable Vanadium (V)	ug/g	10	5.0	3400920
Acid Extractable Zinc (Zn)	ug/g	11	5.0	3400920

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

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Maxxam Job #: B3I0961
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		TO7523		
Sampling Date		2013/10/22 17:00		
	Units	**BH13-213 SS1**	**RDL**	**QC Batch**
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	3395497
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	ND	0.0050	3400098
Acenaphthylene	ug/g	ND	0.0050	3400098
Anthracene	ug/g	ND	0.0050	3400098
Benzo(a)anthracene	ug/g	ND	0.0050	3400098
Benzo(a)pyrene	ug/g	ND	0.0050	3400098
Benzo(b/j)fluoranthene	ug/g	ND	0.0050	3400098
Benzo(g,h,i)perylene	ug/g	ND	0.0050	3400098
Benzo(k)fluoranthene	ug/g	ND	0.0050	3400098
Chrysene	ug/g	ND	0.0050	3400098
Dibenz(a,h)anthracene	ug/g	ND	0.0050	3400098
Fluoranthene	ug/g	ND	0.0050	3400098
Fluorene	ug/g	ND	0.0050	3400098
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.0050	3400098
1-Methylnaphthalene	ug/g	ND	0.0050	3400098
2-Methylnaphthalene	ug/g	0.0055	0.0050	3400098
Naphthalene	ug/g	ND	0.0050	3400098
Phenanthrene	ug/g	0.0061	0.0050	3400098
Pyrene	ug/g	ND	0.0050	3400098
Surrogate Recovery (%)				
D10-Anthracene	%	95		3400098
D14-Terphenyl (FS)	%	84		3400098
D8-Acenaphthylene	%	75		3400098

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

Maxxam Job #: B3I0961
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TO7523		
Sampling Date		2013/10/22 17:00		
	Units	**BH13-213 SS1**	**RDL**	**QC Batch**
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.050	3395498
Volatile Organics				
Acetone (2-Propanone)	ug/g	ND	0.50	3396581
Benzene	ug/g	ND	0.020	3396581
Bromodichloromethane	ug/g	ND	0.050	3396581
Bromoform	ug/g	ND	0.050	3396581
Bromomethane	ug/g	ND	0.050	3396581
Carbon Tetrachloride	ug/g	ND	0.050	3396581
Chlorobenzene	ug/g	ND	0.050	3396581
Chloroform	ug/g	ND	0.050	3396581
Dibromochloromethane	ug/g	ND	0.050	3396581
1,2-Dichlorobenzene	ug/g	ND	0.050	3396581
1,3-Dichlorobenzene	ug/g	ND	0.050	3396581
1,4-Dichlorobenzene	ug/g	ND	0.050	3396581
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	3396581
1,1-Dichloroethane	ug/g	ND	0.050	3396581
1,2-Dichloroethane	ug/g	ND	0.050	3396581
1,1-Dichloroethylene	ug/g	ND	0.050	3396581
cis-1,2-Dichloroethylene	ug/g	ND	0.050	3396581
trans-1,2-Dichloroethylene	ug/g	ND	0.050	3396581
1,2-Dichloropropane	ug/g	ND	0.050	3396581
cis-1,3-Dichloropropene	ug/g	ND	0.030	3396581
trans-1,3-Dichloropropene	ug/g	ND	0.040	3396581
Ethylbenzene	ug/g	ND	0.020	3396581
Ethylene Dibromide	ug/g	ND	0.050	3396581
Hexane	ug/g	ND	0.050	3396581
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	3396581
Methyl Isobutyl Ketone	ug/g	ND	0.50	3396581
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	3396581
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	3396581
Styrene	ug/g	ND	0.050	3396581
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	3396581
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	3396581

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

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.maxxamanalytics.com

Maxxam Job #: B3I0961
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TO7523		
Sampling Date		2013/10/22 17:00		
	Units	**BH13-213 SS1**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/g	ND	0.050	3396581
Toluene	ug/g	ND	0.020	3396581
1,1,1-Trichloroethane	ug/g	ND	0.050	3396581
1,1,2-Trichloroethane	ug/g	ND	0.050	3396581
Trichloroethylene	ug/g	ND	0.050	3396581
Vinyl Chloride	ug/g	ND	0.020	3396581
p+m-Xylene	ug/g	ND	0.020	3396581
o-Xylene	ug/g	ND	0.020	3396581
Xylene (Total)	ug/g	ND	0.020	3396581
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	3396581
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	97		3396581
D10-o-Xylene	%	104		3396581
D4-1,2-Dichloroethane	%	100		3396581
D8-Toluene	%	101		3396581

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

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Your P.O. #: 16300R-20
Sampler Initials: AW

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		TO7523		
Sampling Date		2013/10/22 17:00		
	Units	**BH13-213 SS1**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/g	ND	10	3399346
F1 (C6-C10) - BTEX	ug/g	ND	10	3399346
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	ND	10	3398670
F3 (C16-C34 Hydrocarbons)	ug/g	ND	10	3398670
F4 (C34-C50 Hydrocarbons)	ug/g	ND	10	3398670
Reached Baseline at C50	ug/g	YES		3398670
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	106		3399346
4-Bromofluorobenzene	%	75		3399346
D10-Ethylbenzene	%	95		3399346
D4-1,2-Dichloroethane	%	102		3399346
o-Terphenyl	%	84		3398670

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

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Maxxam Job #: B3I0961
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

Test Summary

Maxxam ID TO7523
Sample ID BH13-213 SS1
Matrix Soil

Collected 2013/10/22
Shipped
Received 2013/10/23

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3395497	N/A	2013/10/29	Automated Statchk
1,3-Dichloropropene Sum	CALC	3395498	N/A	2013/10/29	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3399346	2013/10/25	2013/10/28	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3398670	2013/10/25	2013/10/26	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3400920	2013/10/28	2013/10/29	John Bowman
MOISTURE	BAL	3398732	N/A	2013/10/28	Habiba Essak
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3400098	2013/10/26	2013/10/26	Darryl Tiller
Volatile Organic Compounds in Soil	P&T/MS	3396581	2013/10/25	2013/10/26	Xueming Jiang

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Sampler Initials: AW

Package 1	6.7°C

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

GENERAL COMMENTS

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.maxxamanalytics.com

Maxxam Job #: B3I0961
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3396581	4-Bromofluorobenzene	2013/10/25	101	60 - 140	100	60 - 140	96	%		
3396581	D10-o-Xylene	2013/10/25	101	60 - 130	101	60 - 130	101	%		
3396581	D4-1,2-Dichloroethane	2013/10/25	99	60 - 140	99	60 - 140	100	%		
3396581	D8-Toluene	2013/10/25	102	60 - 140	101	60 - 140	102	%		
3396581	Acetone (2-Propanone)	2013/10/25	103	60 - 140	97	60 - 140	ND, RDL=0.50	ug/g		
3396581	Benzene	2013/10/25	100	60 - 140	98	60 - 130	ND, RDL=0.020	ug/g		
3396581	Bromodichloromethane	2013/10/25	102	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g		
3396581	Bromoform	2013/10/25	99	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g		
3396581	Bromomethane	2013/10/25	94	60 - 140	93	60 - 140	ND, RDL=0.050	ug/g		
3396581	Carbon Tetrachloride	2013/10/25	102	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g		
3396581	Chlorobenzene	2013/10/25	102	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g		
3396581	Chloroform	2013/10/25	99	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g		
3396581	Dibromochloromethane	2013/10/25	101	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g		
3396581	1,2-Dichlorobenzene	2013/10/25	100	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g		
3396581	1,3-Dichlorobenzene	2013/10/25	100	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g		
3396581	1,4-Dichlorobenzene	2013/10/25	98	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g		
3396581	Dichlorodifluoromethane (FREON 12)	2013/10/25	88	60 - 140	89	60 - 140	ND, RDL=0.050	ug/g		
3396581	1,1-Dichloroethane	2013/10/25	103	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g		
3396581	1,2-Dichloroethane	2013/10/26	100	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3396581	1,1-Dichloroethylene	2013/10/25	112	60 - 140	110	60 - 130	ND, RDL=0.050	ug/g		
3396581	cis-1,2-Dichloroethylene	2013/10/25	97	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g		
3396581	trans-1,2-Dichloroethylene	2013/10/25	99	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g		
3396581	1,2-Dichloropropane	2013/10/25	102	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g		
3396581	cis-1,3-Dichloropropene	2013/10/25	95	60 - 140	94	60 - 130	ND, RDL=0.030	ug/g		
3396581	trans-1,3-Dichloropropene	2013/10/25	103	60 - 140	102	60 - 130	ND, RDL=0.040	ug/g		
3396581	Ethylbenzene	2013/10/25	97	60 - 140	97	60 - 130	ND, RDL=0.020	ug/g		
3396581	Ethylene Dibromide	2013/10/26	99	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3396581	Hexane	2013/10/25	91	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g		
3396581	Methylene Chloride(Dichloromethane)	2013/10/25	98	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g		
3396581	Methyl Isobutyl Ketone	2013/10/25	101	60 - 140	100	60 - 130	ND, RDL=0.50	ug/g		
3396581	Methyl Ethyl Ketone (2-Butanone)	2013/10/25	101	60 - 140	96	60 - 140	ND, RDL=0.50	ug/g		
3396581	Methyl t-butyl ether (MTBE)	2013/10/26	98	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
3396581	Styrene	2013/10/25	105	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g		
3396581	1,1,1,2-Tetrachloroethane	2013/10/25	101	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g		
3396581	1,1,2,2-Tetrachloroethane	2013/10/25	101	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g		
3396581	Tetrachloroethylene	2013/10/25	103	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g		
3396581	Toluene	2013/10/25	98	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g		
3396581	1,1,1-Trichloroethane	2013/10/25	100	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g		
3396581	1,1,2-Trichloroethane	2013/10/25	103	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g		

Maxxam Job #: B3I0961
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Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3396581	Trichloroethylene	2013/10/25	100	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g		
3396581	Vinyl Chloride	2013/10/25	90	60 - 140	89	60 - 130	ND, RDL=0.020	ug/g		
3396581	p+m-Xylene	2013/10/25	NC(1)	60 - 140	100	60 - 130	ND, RDL=0.020	ug/g		
3396581	o-Xylene	2013/10/25	97	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g		
3396581	Trichlorofluoromethane (FREON 11)	2013/10/25	97	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g		
3396581	Xylene (Total)	2013/10/25					ND, RDL=0.020	ug/g		
3398670	o-Terphenyl	2013/10/25	74	30 - 130	79	30 - 130	76	%		
3398670	F2 (C10-C16 Hydrocarbons)	2013/10/25	102	50 - 130	106	80 - 120	ND, RDL=10	ug/g	NC	50
3398670	F3 (C16-C34 Hydrocarbons)	2013/10/25	102	50 - 130	106	80 - 120	ND, RDL=10	ug/g	36.2	50
3398670	F4 (C34-C50 Hydrocarbons)	2013/10/25	102	50 - 130	106	80 - 120	ND, RDL=10	ug/g	NC	50
3398732	Moisture	2013/10/28							3.5	50
3399346	1,4-Difluorobenzene	2013/10/28			104	60 - 140	104	%		
3399346	4-Bromofluorobenzene	2013/10/28			74	60 - 140	80	%		
3399346	D10-Ethylbenzene	2013/10/28			79	30 - 130	96	%		
3399346	D4-1,2-Dichloroethane	2013/10/28			101	60 - 140	97	%		
3399346	F1 (C6-C10)	2013/10/28			88	80 - 120	ND, RDL=10	ug/g	6.5	50
3399346	F1 (C6-C10) - BTEX	2013/10/28					ND, RDL=10	ug/g		
3400098	D10-Anthracene	2013/10/26	79	50 - 130	98	50 - 130	104	%		
3400098	D14-Terphenyl (FS)	2013/10/26	79	50 - 130	89	50 - 130	92	%		
3400098	D8-Acenaphthylene	2013/10/26	73	50 - 130	82	50 - 130	82	%		
3400098	Acenaphthene	2013/10/26	80	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	1.4	40
3400098	Acenaphthylene	2013/10/26	81	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Anthracene	2013/10/26	83	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Benzo(a)anthracene	2013/10/26	87	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Benzo(a)pyrene	2013/10/26	84	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Benzo(b/j)fluoranthene	2013/10/26	83	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Benzo(g,h,i)perylene	2013/10/26	83	50 - 130	101	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Benzo(k)fluoranthene	2013/10/26	78	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Chrysene	2013/10/26	90	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	4.5	40
3400098	Dibenz(a,h)anthracene	2013/10/26	86	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Fluoranthene	2013/10/26	88	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Fluorene	2013/10/26	83	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	1.9	40
3400098	Indeno(1,2,3-cd)pyrene	2013/10/26	85	50 - 130	101	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	1-Methylnaphthalene	2013/10/26	110	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	5.2	40
3400098	2-Methylnaphthalene	2013/10/26	123	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	5.7	40
3400098	Naphthalene	2013/10/26	87	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	10	40
3400098	Phenanthrene	2013/10/26	97	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	1.1	40
3400098	Pyrene	2013/10/26	84	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400920	Acid Extractable Aluminum (Al)	2013/10/29	NC	75 - 125	106	80 - 120	ND, RDL=50	ug/g		

Maxxam Job #: B3I0961
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Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3400920	Acid Extractable Antimony (Sb)	2013/10/29	100	75 - 125	102	80 - 120	ND, RDL=0.20	ug/g	NC	30
3400920	Acid Extractable Arsenic (As)	2013/10/29	95	75 - 125	98	80 - 120	ND, RDL=1.0	ug/g	NC	30
3400920	Acid Extractable Barium (Ba)	2013/10/29	NC	75 - 125	95	80 - 120	ND, RDL=0.50	ug/g	5.3	30
3400920	Acid Extractable Beryllium (Be)	2013/10/29	103	75 - 125	104	80 - 120	ND, RDL=0.20	ug/g	NC	30
3400920	Acid Extractable Cadmium (Cd)	2013/10/29	100	75 - 125	100	80 - 120	ND, RDL=0.10	ug/g	NC	30
3400920	Acid Extractable Calcium (Ca)	2013/10/29	NC	75 - 125	103	80 - 120	ND, RDL=50	ug/g		
3400920	Acid Extractable Chromium (Cr)	2013/10/29	99	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	5.0	30
3400920	Acid Extractable Cobalt (Co)	2013/10/29	98	75 - 125	102	80 - 120	ND, RDL=0.10	ug/g	3.2	30
3400920	Acid Extractable Copper (Cu)	2013/10/29	94	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	8.5	30
3400920	Acid Extractable Iron (Fe)	2013/10/29	NC	75 - 125	105	80 - 120	ND, RDL=50	ug/g		
3400920	Acid Extractable Lead (Pb)	2013/10/29	99	75 - 125	103	80 - 120	ND, RDL=1.0	ug/g	NC	30
3400920	Acid Extractable Magnesium (Mg)	2013/10/29	NC	75 - 125	102	80 - 120	ND, RDL=50	ug/g		
3400920	Acid Extractable Manganese (Mn)	2013/10/29	NC	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g		
3400920	Acid Extractable Molybdenum (Mo)	2013/10/29	100	75 - 125	99	80 - 120	ND, RDL=0.50	ug/g	NC	30
3400920	Acid Extractable Nickel (Ni)	2013/10/29	99	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	4.5	30
3400920	Acid Extractable Phosphorus (P)	2013/10/29	NC	75 - 125	127 (2)	80 - 120	ND, RDL=50	ug/g		
3400920	Acid Extractable Potassium (K)	2013/10/29	NC	75 - 125	97	80 - 120	ND, RDL=200	ug/g		
3400920	Acid Extractable Selenium (Se)	2013/10/29	97	75 - 125	98	80 - 120	ND, RDL=0.50	ug/g	NC	30
3400920	Acid Extractable Silver (Ag)	2013/10/29	100	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g	NC	30
3400920	Acid Extractable Sodium (Na)	2013/10/29	100	75 - 125	101	80 - 120	ND, RDL=100	ug/g		
3400920	Acid Extractable Strontium (Sr)	2013/10/29	NC	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g		
3400920	Acid Extractable Thallium (Tl)	2013/10/29	94	75 - 125	96	80 - 120	ND, RDL=0.050	ug/g	NC	30
3400920	Acid Extractable Vanadium (V)	2013/10/29	100	75 - 125	99	80 - 120	ND, RDL=5.0	ug/g	NC	30
3400920	Acid Extractable Zinc (Zn)	2013/10/29	99	75 - 125	102	80 - 120	ND, RDL=5.0	ug/g	NC	30

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) - The recovery in the matrix spike was not calculated (NC). Spiked concentration was less than 2x the native concentration of the sample.
(2) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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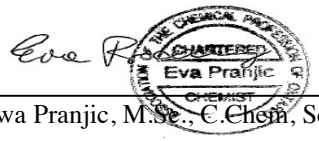
Validation Signature Page

Maxxam Job #: B3I0961

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

Floyd Mayede, Senior Analyst

Steve Roberts, Lab Supervisor, Ottawa

==========

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Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-653-6266 Fax:(905) 817-5779 www.maxxam.ca

STANTEC CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:

Company Name: #2267 Stantec Consulting Ltd
Contact Name: Accounts Payable
Address: 1331 Clyde Avenue Suite 400
Ottawa ON K2C 3G4
Phone: (613)722-4420 Fax: (613)738-0721
Email: Stantec.Accounts.Payable.Invoices@Stantec.com

REPORT INFORMATION (if differs from invoice):

Company Name:
Contact Name: Jill Peters-Dechman
Address:
Phone: Fax:
Email: jill.peters-dechman@stantec.com, edd@stantec.c

PROJECT INFORMATION:

Quotation #: B31780
Task #:
Project #: 163401060.400.103
Profit Centre:
Site #:
Sampled By: A. Waldick

Laboratory Use Only:

MAXXAM JOB #:
BOTTLE ORDER #: 440425
CHAIN OF CUSTODY #: C#440425-01-01
PROJECT MANAGER: Parnian Baber

Regulation 153 (2011)

- [X] Table 1
- [ ] Table 2
- [ ] Table 3
- [ ] Table ___
- [ ] Res/Park
- [ ] Ind/Comm
- [ ] Agri/Other
- [ ] Medium/Fine
- [ ] Coarse
- [ ] For RSC

Other Regulations

- [ ] CCME
- [ ] Reg. 558
- [ ] MISA
- [ ] PWQO
- [ ] Other
- [ ] Sanitary Sewer Bylaw
- [ ] Storm Sewer Bylaw
- Municipality

SPECIAL INSTRUCTIONS

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

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

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

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: [X]
(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	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	ANALYSIS REQUESTED: PHCs F1-F4 BTEX	PAH	metals	VOC's	# of Bottles	Comments
1		BH13-213 SS1	Oct 22 2013	17:00	S	N	N	X	X	X	X	34	
2													
3													
4													
5													
6													
7													
8													
9													
10													

23-Oct-13 11:05
Parnian Baber
B3I0961
CB2 OTT-002

REC'D IN OTTAWA

on ice packs

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
A. Waldick / A. Waldick	13/10/23	11:00	C. Bogeran	2013/10/23	11:05	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	7/7/6	Present	X	
		Intact	X	

* 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.

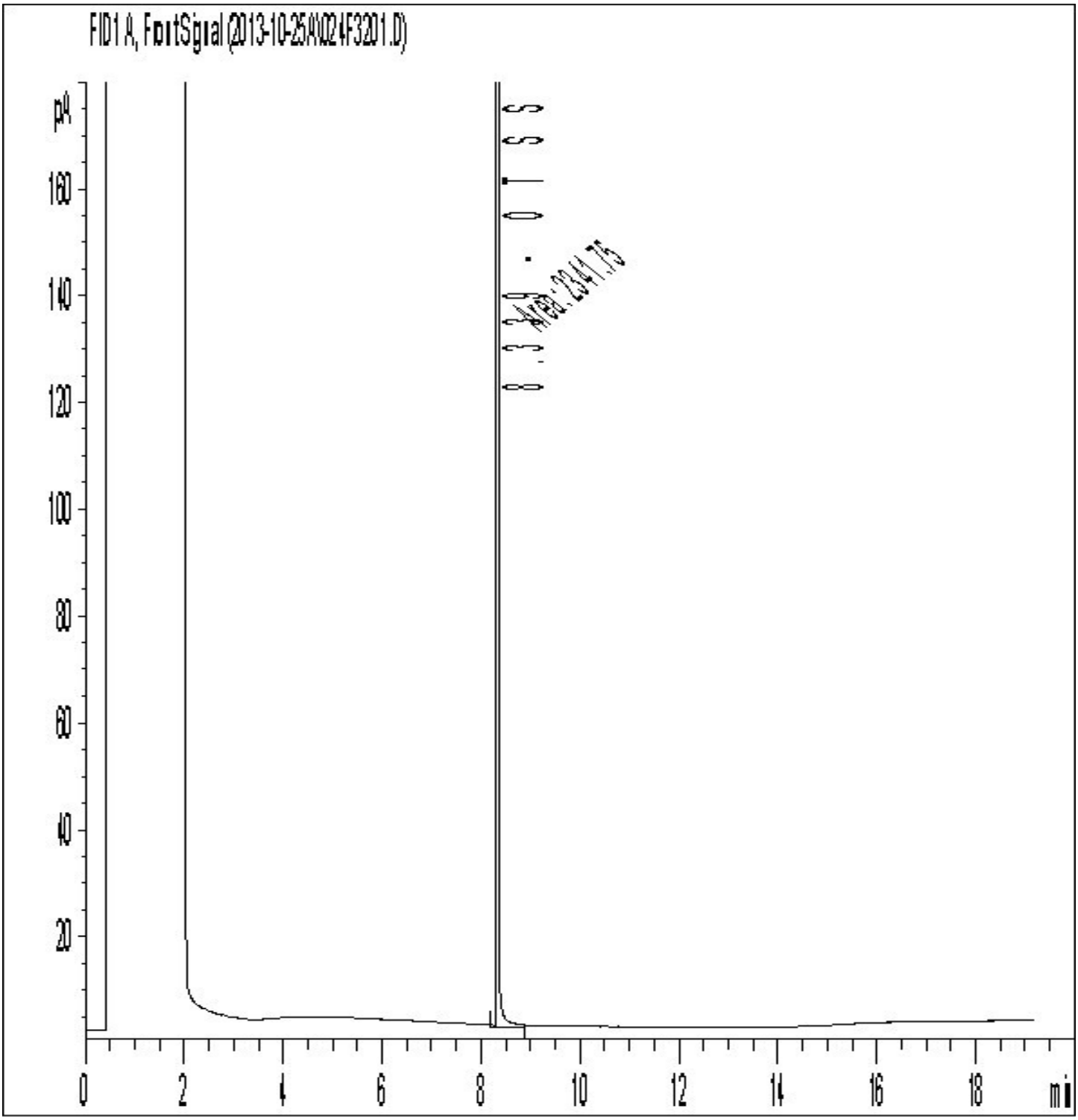
White: Maxxam Yellow: Client

Report Date: 2013/10/30
Maxxam Job #: B3I0961
Maxxam Sample: TO7523

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Client ID: BH13-213 SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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Maxxam

Success Through Science®

Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your C.O.C. #: 0022669

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/10/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3I2136
Received: 2013/10/24, 13:55

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	2	N/A	2013/10/30	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum (1)	2	N/A	2013/10/30	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	2	2013/10/25	2013/10/28	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	2013/10/28	2013/10/29	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	2	2013/10/29	2013/10/29	CAM SOP-00447	EPA 6020
MOISTURE	2	N/A	2013/10/28	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	2	2013/10/28	2013/10/29	CAM SOP - 00318	EPA 8270
Volatile Organic Compounds in Soil (1)	2	2013/10/25	2013/10/28	CAM SOP-00226	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

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Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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Total cover pages: 2

Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

RESULTS OF ANALYSES OF SOIL

Maxxam ID		TP5128		TP5129		
Sampling Date		2013/10/24 11:00		2013/10/24 12:30		
	Units	**BH13-231 SS3**	**QC Batch**	**BH13-231 SS7**	**RDL**	**QC Batch**
Inorganics						
Moisture	%	29	3402533	14	0.2	3398732

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TP5128	TP5129		
Sampling Date		2013/10/24 11:00	2013/10/24 12:30		
	Units	**BH13-231 SS3**	**BH13-231 SS7**	**RDL**	**QC Batch**
Metals					
Acid Extractable Aluminum (Al)	ug/g	14000	4000	50	3402284
Acid Extractable Antimony (Sb)	ug/g	ND	ND	0.20	3402284
Acid Extractable Arsenic (As)	ug/g	1.6	1.2	1.0	3402284
Acid Extractable Barium (Ba)	ug/g	160	100	0.50	3402284
Acid Extractable Beryllium (Be)	ug/g	0.35	0.20	0.20	3402284
Acid Extractable Cadmium (Cd)	ug/g	ND	ND	0.10	3402284
Acid Extractable Calcium (Ca)	ug/g	18000	87000	50	3402284
Acid Extractable Chromium (Cr)	ug/g	48	11	1.0	3402284
Acid Extractable Cobalt (Co)	ug/g	11	4.6	0.10	3402284
Acid Extractable Copper (Cu)	ug/g	26	9.7	0.50	3402284
Acid Extractable Iron (Fe)	ug/g	22000	11000	50	3402284
Acid Extractable Lead (Pb)	ug/g	17	3.2	1.0	3402284
Acid Extractable Magnesium (Mg)	ug/g	11000	8700	50	3402284
Acid Extractable Manganese (Mn)	ug/g	320	240	1.0	3402284
Acid Extractable Molybdenum (Mo)	ug/g	0.55	ND	0.50	3402284
Acid Extractable Nickel (Ni)	ug/g	30	9.1	0.50	3402284
Acid Extractable Phosphorus (P)	ug/g	670	960	50	3402284
Acid Extractable Potassium (K)	ug/g	4700	1500	200	3402284
Acid Extractable Selenium (Se)	ug/g	ND	ND	0.50	3402284
Acid Extractable Silver (Ag)	ug/g	ND	ND	0.20	3402284
Acid Extractable Sodium (Na)	ug/g	2800	300	100	3402284
Acid Extractable Strontium (Sr)	ug/g	110	200	1.0	3402284
Acid Extractable Thallium (Tl)	ug/g	0.18	0.084	0.050	3402284
Acid Extractable Vanadium (V)	ug/g	46	19	5.0	3402284
Acid Extractable Zinc (Zn)	ug/g	62	19	5.0	3402284

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

Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		TP5128	TP5129		
Sampling Date		2013/10/24 11:00	2013/10/24 12:30		
	Units	**BH13-231 SS3**	**BH13-231 SS7**	**RDL**	**QC Batch**
Calculated Parameters					
Methylnaphthalene, 2-(1-)	ug/g	ND	ND	0.0071	3397060
Polyaromatic Hydrocarbons					
Acenaphthene	ug/g	ND	ND	0.0050	3401647
Acenaphthylene	ug/g	ND	ND	0.0050	3401647
Anthracene	ug/g	ND	ND	0.0050	3401647
Benzo(a)anthracene	ug/g	0.012	ND	0.0050	3401647
Benzo(a)pyrene	ug/g	0.012	ND	0.0050	3401647
Benzo(b/j)fluoranthene	ug/g	0.015	ND	0.0050	3401647
Benzo(g,h,i)perylene	ug/g	0.0082	ND	0.0050	3401647
Benzo(k)fluoranthene	ug/g	0.0050	ND	0.0050	3401647
Chrysene	ug/g	0.011	ND	0.0050	3401647
Dibenz(a,h)anthracene	ug/g	ND	ND	0.0050	3401647
Fluoranthene	ug/g	0.021	ND	0.0050	3401647
Fluorene	ug/g	ND	ND	0.0050	3401647
Indeno(1,2,3-cd)pyrene	ug/g	0.0075	ND	0.0050	3401647
1-Methylnaphthalene	ug/g	ND	ND	0.0050	3401647
2-Methylnaphthalene	ug/g	ND	ND	0.0050	3401647
Naphthalene	ug/g	ND	ND	0.0050	3401647
Phenanthrene	ug/g	0.0075	ND	0.0050	3401647
Pyrene	ug/g	0.018	ND	0.0050	3401647
Surrogate Recovery (%)					
D10-Anthracene	%	87	86		3401647
D14-Terphenyl (FS)	%	85	84		3401647
D8-Acenaphthylene	%	94	95		3401647

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

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Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TP5128	TP5129		
Sampling Date		2013/10/24 11:00	2013/10/24 12:30		
	Units	**BH13-231 SS3**	**BH13-231 SS7**	**RDL**	**QC Batch**
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	0.050	3397061
Volatile Organics					
Acetone (2-Propanone)	ug/g	ND	ND	0.50	3398867
Benzene	ug/g	ND	ND	0.020	3398867
Bromodichloromethane	ug/g	ND	ND	0.050	3398867
Bromoform	ug/g	ND	ND	0.050	3398867
Bromomethane	ug/g	ND	ND	0.050	3398867
Carbon Tetrachloride	ug/g	ND	ND	0.050	3398867
Chlorobenzene	ug/g	ND	ND	0.050	3398867
Chloroform	ug/g	ND	ND	0.050	3398867
Dibromochloromethane	ug/g	ND	ND	0.050	3398867
1,2-Dichlorobenzene	ug/g	ND	ND	0.050	3398867
1,3-Dichlorobenzene	ug/g	ND	ND	0.050	3398867
1,4-Dichlorobenzene	ug/g	ND	ND	0.050	3398867
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	0.050	3398867
1,1-Dichloroethane	ug/g	ND	ND	0.050	3398867
1,2-Dichloroethane	ug/g	ND	ND	0.050	3398867
1,1-Dichloroethylene	ug/g	ND	ND	0.050	3398867
cis-1,2-Dichloroethylene	ug/g	ND	ND	0.050	3398867
trans-1,2-Dichloroethylene	ug/g	ND	ND	0.050	3398867
1,2-Dichloropropane	ug/g	ND	ND	0.050	3398867
cis-1,3-Dichloropropene	ug/g	ND	ND	0.030	3398867
trans-1,3-Dichloropropene	ug/g	ND	ND	0.040	3398867
Ethylbenzene	ug/g	ND	ND	0.020	3398867
Ethylene Dibromide	ug/g	ND	ND	0.050	3398867
Hexane	ug/g	ND	ND	0.050	3398867
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	0.050	3398867
Methyl Isobutyl Ketone	ug/g	ND	ND	0.50	3398867
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	0.50	3398867
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	0.050	3398867
Styrene	ug/g	ND	ND	0.050	3398867
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	0.050	3398867
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	0.050	3398867

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

Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TP5128	TP5129		
Sampling Date		2013/10/24 11:00	2013/10/24 12:30		
	Units	**BH13-231 SS3**	**BH13-231 SS7**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/g	ND	ND	0.050	3398867
Toluene	ug/g	ND	ND	0.020	3398867
1,1,1-Trichloroethane	ug/g	ND	ND	0.050	3398867
1,1,2-Trichloroethane	ug/g	ND	ND	0.050	3398867
Trichloroethylene	ug/g	ND	ND	0.050	3398867
Vinyl Chloride	ug/g	ND	ND	0.020	3398867
p+m-Xylene	ug/g	ND	ND	0.020	3398867
o-Xylene	ug/g	ND	ND	0.020	3398867
Xylene (Total)	ug/g	ND	ND	0.020	3398867
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	0.050	3398867
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	96	99		3398867
D10-o-Xylene	%	99	98		3398867
D4-1,2-Dichloroethane	%	98	99		3398867
D8-Toluene	%	99	98		3398867

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

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Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		TP5128	TP5129		
Sampling Date		2013/10/24 11:00	2013/10/24 12:30		
	Units	**BH13-231 SS3**	**BH13-231 SS7**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons					
F1 (C6-C10)	ug/g	ND	ND	10	3399346
F1 (C6-C10) - BTEX	ug/g	ND	ND	10	3399346
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	10	3401648
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	10	3401648
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	10	3401648
Reached Baseline at C50	ug/g	YES	YES		3401648
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	103	105		3399346
4-Bromofluorobenzene	%	81	83		3399346
D10-Ethylbenzene	%	86	81		3399346
D4-1,2-Dichloroethane	%	100	100		3399346
o-Terphenyl	%	82	84		3401648

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

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Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

Test Summary

Maxxam ID TP5128 **Collected** 2013/10/24
Sample ID BH13-231 SS3 **Shipped**
Matrix Soil **Received** 2013/10/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3397060	N/A	2013/10/30	Automated Statchk
1,3-Dichloropropene Sum	CALC	3397061	N/A	2013/10/30	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3399346	2013/10/25	2013/10/28	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3401648	2013/10/28	2013/10/29	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3402284	2013/10/29	2013/10/29	John Bowman
MOISTURE	BAL	3402533	N/A	2013/10/28	Habiba Essak
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3401647	2013/10/28	2013/10/29	Andy Zhao
Volatile Organic Compounds in Soil	P&T/MS	3398867	2013/10/25	2013/10/28	Rebecca Schultz

Maxxam ID TP5128 Dup **Collected** 2013/10/24
Sample ID BH13-231 SS3 **Shipped**
Matrix Soil **Received** 2013/10/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3401648	2013/10/28	2013/10/29	Habiba Essak
MOISTURE	BAL	3402533	N/A	2013/10/30	Habiba Essak

Maxxam ID TP5129 **Collected** 2013/10/24
Sample ID BH13-231 SS7 **Shipped**
Matrix Soil **Received** 2013/10/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3397060	N/A	2013/10/30	Automated Statchk
1,3-Dichloropropene Sum	CALC	3397061	N/A	2013/10/30	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3399346	2013/10/25	2013/10/28	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3401648	2013/10/28	2013/10/29	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3402284	2013/10/29	2013/10/29	John Bowman
MOISTURE	BAL	3398732	N/A	2013/10/28	Habiba Essak
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3401647	2013/10/28	2013/10/29	Andy Zhao
Volatile Organic Compounds in Soil	P&T/MS	3398867	2013/10/25	2013/10/28	Rebecca Schultz

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.maxxamanalytics.com

Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

Test Summary

Maxxam ID TP5129 Dup
Sample ID BH13-231 SS7
Matrix Soil

Collected 2013/10/24
Shipped
Received 2013/10/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
MOISTURE	BAL	3398732	N/A	2013/10/28	Habiba Essak

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Package 1	5.3°C

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

GENERAL COMMENTS

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.maxxamanalytics.com

Maxxam Job #: B3I2136
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Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3398732	Moisture	2013/10/28							3.5	50
3398867	4-Bromofluorobenzene	2013/10/28	103	60 - 140	99	60 - 140	101	%		
3398867	D10-o-Xylene	2013/10/28	106	60 - 130	99	60 - 130	101	%		
3398867	D4-1,2-Dichloroethane	2013/10/28	95	60 - 140	101	60 - 140	94	%		
3398867	D8-Toluene	2013/10/28	98	60 - 140	99	60 - 140	96	%		
3398867	Acetone (2-Propanone)	2013/10/28	86	60 - 140	96	60 - 140	ND, RDL=0.50	ug/g	NC	50
3398867	Benzene	2013/10/28	97	60 - 140	99	60 - 130	ND, RDL=0.020	ug/g	NC	50
3398867	Bromodichloromethane	2013/10/28	97	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Bromoform	2013/10/28	99	60 - 140	87	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Bromomethane	2013/10/28	105	60 - 140	92	60 - 140	ND, RDL=0.050	ug/g	NC	50
3398867	Carbon Tetrachloride	2013/10/28	97	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Chlorobenzene	2013/10/28	97	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Chloroform	2013/10/28	94	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Dibromochloromethane	2013/10/28	99	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	1,2-Dichlorobenzene	2013/10/28	97	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	1,3-Dichlorobenzene	2013/10/28	96	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	1,4-Dichlorobenzene	2013/10/28	94	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Dichlorodifluoromethane (FREON 12)	2013/10/28	103	60 - 140	90	60 - 140	ND, RDL=0.050	ug/g	NC	50
3398867	1,1-Dichloroethane	2013/10/28	95	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	1,2-Dichloroethane	2013/10/28	93	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	1,1-Dichloroethylene	2013/10/28	108	60 - 140	114	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	cis-1,2-Dichloroethylene	2013/10/28	98	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	trans-1,2-Dichloroethylene	2013/10/28	102	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	1,2-Dichloropropane	2013/10/28	94	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	cis-1,3-Dichloropropene	2013/10/28	89	60 - 140	89	60 - 130	ND, RDL=0.030	ug/g	NC	50
3398867	trans-1,3-Dichloropropene	2013/10/28	92	60 - 140	93	60 - 130	ND, RDL=0.040	ug/g	NC	50
3398867	Ethylbenzene	2013/10/28	95	60 - 140	95	60 - 130	ND, RDL=0.020	ug/g	NC	50
3398867	Ethylene Dibromide	2013/10/28	93	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Hexane	2013/10/28	94	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Methylene Chloride(Dichloromethane)	2013/10/28	115	60 - 140	115	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Methyl Isobutyl Ketone	2013/10/28	84	60 - 140	92	60 - 130	ND, RDL=0.50	ug/g	NC	50
3398867	Methyl Ethyl Ketone (2-Butanone)	2013/10/28	79	60 - 140	86	60 - 140	ND, RDL=0.50	ug/g	NC	50
3398867	Methyl t-butyl ether (MTBE)	2013/10/28	91	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Styrene	2013/10/28	100	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	1,1,1,2-Tetrachloroethane	2013/10/28	95	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	1,1,2,2-Tetrachloroethane	2013/10/28	92	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Tetrachloroethylene	2013/10/28	105	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Toluene	2013/10/28	94	60 - 140	93	60 - 130	ND, RDL=0.020	ug/g	NC	50
3398867	1,1,1-Trichloroethane	2013/10/28	96	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50

Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3398867	1,1,2-Trichloroethane	2013/10/28	91	60 - 140	88	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Trichloroethylene	2013/10/28	103	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Vinyl Chloride	2013/10/28	90	60 - 140	84	60 - 130	ND, RDL=0.020	ug/g	NC	50
3398867	p+m-Xylene	2013/10/28	95	60 - 140	95	60 - 130	ND, RDL=0.020	ug/g	NC	50
3398867	o-Xylene	2013/10/28	93	60 - 140	92	60 - 130	ND, RDL=0.020	ug/g	NC	50
3398867	Trichlorofluoromethane (FREON 11)	2013/10/28	100	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC	50
3398867	Xylene (Total)	2013/10/28					ND, RDL=0.020	ug/g	NC	50
3399346	1,4-Difluorobenzene	2013/10/28			104	60 - 140	104	%		
3399346	4-Bromofluorobenzene	2013/10/28			74	60 - 140	80	%		
3399346	D10-Ethylbenzene	2013/10/28			79	30 - 130	96	%		
3399346	D4-1,2-Dichloroethane	2013/10/28			101	60 - 140	97	%		
3399346	F1 (C6-C10)	2013/10/28			88	80 - 120	ND, RDL=10	ug/g	6.5	50
3399346	F1 (C6-C10) - BTEX	2013/10/28					ND, RDL=10	ug/g		
3401647	D10-Anthracene	2013/10/29	79	50 - 130	83	50 - 130	85	%		
3401647	D14-Terphenyl (FS)	2013/10/29	82	50 - 130	85	50 - 130	86	%		
3401647	D8-Acenaphthylene	2013/10/29	83	50 - 130	85	50 - 130	75	%		
3401647	Acenaphthene	2013/10/29	95	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Acenaphthylene	2013/10/29	80	50 - 130	82	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Anthracene	2013/10/29	85	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Benzo(a)anthracene	2013/10/29	89	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Benzo(a)pyrene	2013/10/29	84	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Benzo(b/j)fluoranthene	2013/10/29	90	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Benzo(g,h,i)perylene	2013/10/29	85	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Benzo(k)fluoranthene	2013/10/29	90	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Chrysene	2013/10/29	91	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Dibenz(a,h)anthracene	2013/10/29	84	50 - 130	92	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Fluoranthene	2013/10/29	87	50 - 130	92	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Fluorene	2013/10/29	95	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Indeno(1,2,3-cd)pyrene	2013/10/29	84	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	1-Methylnaphthalene	2013/10/29	81	50 - 130	85	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	2-Methylnaphthalene	2013/10/29	79	50 - 130	83	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Naphthalene	2013/10/29	83	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Phenanthrene	2013/10/29	85	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401647	Pyrene	2013/10/29	86	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3401648	o-Terphenyl	2013/10/29	77	30 - 130	77	30 - 130	80	%		
3401648	F2 (C10-C16 Hydrocarbons)	2013/10/29	77	50 - 130	77	80 - 120	ND, RDL=10	ug/g	NC	50
3401648	F3 (C16-C34 Hydrocarbons)	2013/10/29	77	50 - 130	77	80 - 120	ND, RDL=10	ug/g	NC	50
3401648	F4 (C34-C50 Hydrocarbons)	2013/10/29	77	50 - 130	77	80 - 120	ND, RDL=10	ug/g	NC	50
3402284	Acid Extractable Aluminum (Al)	2013/10/29	NC	75 - 125	107	80 - 120	ND, RDL=50	ug/g		

Maxxam Job #: B3I2136
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: KENT@FLORENCE
Your P.O. #: 16300R-20
Sampler Initials: AW

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3402284	Acid Extractable Antimony (Sb)	2013/10/29	98	75 - 125	102	80 - 120	ND, RDL=0.20	ug/g	NC	30
3402284	Acid Extractable Arsenic (As)	2013/10/29	95	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	7.7	30
3402284	Acid Extractable Barium (Ba)	2013/10/29	NC	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	1.5	30
3402284	Acid Extractable Beryllium (Be)	2013/10/29	98	75 - 125	105	80 - 120	ND, RDL=0.20	ug/g	NC	30
3402284	Acid Extractable Cadmium (Cd)	2013/10/29	96	75 - 125	101	80 - 120	ND, RDL=0.10	ug/g	4.2	30
3402284	Acid Extractable Calcium (Ca)	2013/10/29	NC	75 - 125	104	80 - 120	ND, RDL=50	ug/g		
3402284	Acid Extractable Chromium (Cr)	2013/10/29	98	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g	1.2	30
3402284	Acid Extractable Cobalt (Co)	2013/10/29	99	75 - 125	104	80 - 120	ND, RDL=0.10	ug/g	0.08	30
3402284	Acid Extractable Copper (Cu)	2013/10/29	98	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	5.2	30
3402284	Acid Extractable Iron (Fe)	2013/10/29	NC	75 - 125	107	80 - 120	ND, RDL=50	ug/g		
3402284	Acid Extractable Lead (Pb)	2013/10/29	NC	75 - 125	103	80 - 120	ND, RDL=1.0	ug/g	0.5	30
3402284	Acid Extractable Magnesium (Mg)	2013/10/29	NC	75 - 125	102	80 - 120	ND, RDL=50	ug/g		
3402284	Acid Extractable Manganese (Mn)	2013/10/29	NC	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g		
3402284	Acid Extractable Molybdenum (Mo)	2013/10/29	96	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	NC	30
3402284	Acid Extractable Nickel (Ni)	2013/10/29	100	75 - 125	105	80 - 120	ND, RDL=0.50	ug/g	1.9	30
3402284	Acid Extractable Phosphorus (P)	2013/10/29	NC	75 - 125	112	80 - 120	ND, RDL=50	ug/g		
3402284	Acid Extractable Potassium (K)	2013/10/29	92	75 - 125	100	80 - 120	ND, RDL=200	ug/g		
3402284	Acid Extractable Selenium (Se)	2013/10/29	99	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	NC	30
3402284	Acid Extractable Silver (Ag)	2013/10/29	98	75 - 125	103	80 - 120	ND, RDL=0.20	ug/g	NC	30
3402284	Acid Extractable Sodium (Na)	2013/10/29	96	75 - 125	102	80 - 120	ND, RDL=100	ug/g		
3402284	Acid Extractable Strontium (Sr)	2013/10/29	NC	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g		
3402284	Acid Extractable Thallium (Tl)	2013/10/29	89	75 - 125	93	80 - 120	ND, RDL=0.050	ug/g	NC	30
3402284	Acid Extractable Vanadium (V)	2013/10/29	96	75 - 125	102	80 - 120	ND, RDL=5.0	ug/g	NC	30
3402284	Acid Extractable Zinc (Zn)	2013/10/29	NC	75 - 125	105	80 - 120	ND, RDL=5.0	ug/g	4.2	30
3402533	Moisture	2013/10/30							6.1	50

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B3I2136

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

Cristina Carriere, Scientific Services

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

Yuan Zhou, Analyst II

==========

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 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.maxxamanalytics.com

Maxxam 6740 Campobello Road, Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

22669 Page 1 of 1

INVOICE INFORMATION	REPORT INFORMATION (if differs from invoice)	PROJECT INFORMATION	MAXXAM JOB NUMBER
Company Name: Stantec	Company Name:	Quotation #: B37180	
Contact Name: Jill Peters Dechman	Contact Name:	P.O. #: CSST	CHAIN OF CUSTODY #
Address: 1331 Clyde Ave	Address:	Project #: 160401060.400.103	00
Phone: 613-722-4420 Fax:	Phone: Fax:	Site Location: Kent @ Florence	
Email: jill.peters-dechman@stantec	Email: stantecacctspayable	Site #:	
		Sampled By: A. Waldicle	

Note: For MOE Regulated Drinking Water samples, please use the Drinking Water CofC.

Regulation 153 (2011): [X] Table 1 [ ] Table 2 [ ] Table 3 [ ] Table ____ [ ] Res/Park [ ] Ind/Comm [ ] Agri/Other [ ] Med/Fine [ ] Coarse

Other Regulations: [ ] CCME [ ] Reg. 558 [ ] MISA [ ] PWQO [ ] Other (specify): ____ [ ] Sanitary Sewer Bylaw [ ] Storm Sewer Bylaw

For RSC: [ ] Yes [ ] No

Municipality: ____

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 (Please be specific)

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT: (5-7 working days for most tests) [X]

Rush TAT: ***Samples must be received by 3pm to guarantee your TAT***

Rush Confirmation #: PN ____

[ ] 1 day [ ] 2 days [ ] 3 days

Date Req'd: ____

TATs for certain tests are > 5 days. Please contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	MOE Regulated Drinking Water? (Y/N)	Metals Field Filtered? (Y/N)	PHC's BTEX/F1-F4	PAH's	VOC's	metals	# of Cont.	COMMENTS / TAT COMMENTS
1	BH13-231 SS3	Oct 24	11:00	Soil	N	N	X	X	X	X	4	Kent @ Florence
2	BH13-231 SS7	2013	12:30	Soil	N	N	X	X	X	X	4	
3												
4												
5												
6												
7												
8												
9												
10												

24-Oct-13 13:55
Parnian Baber
B3I2136
CB2 OTT-002

ONICE

*RELINQUISHED BY (Signature/Print)	Date (YYYY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date (YYYY/MM/DD)	Time:	#JARS USED AND NOT SUBMITTED
A Waldicle / A Waldicle	2013/10/24	13:55	Parnian Baber	2013-10-24	13:55	

Laboratory Use Only

Custody Seal	Yes	No
Present	✓	
Intact	✓	

Temperature (°C) on Receipt: 6/6/4 °C

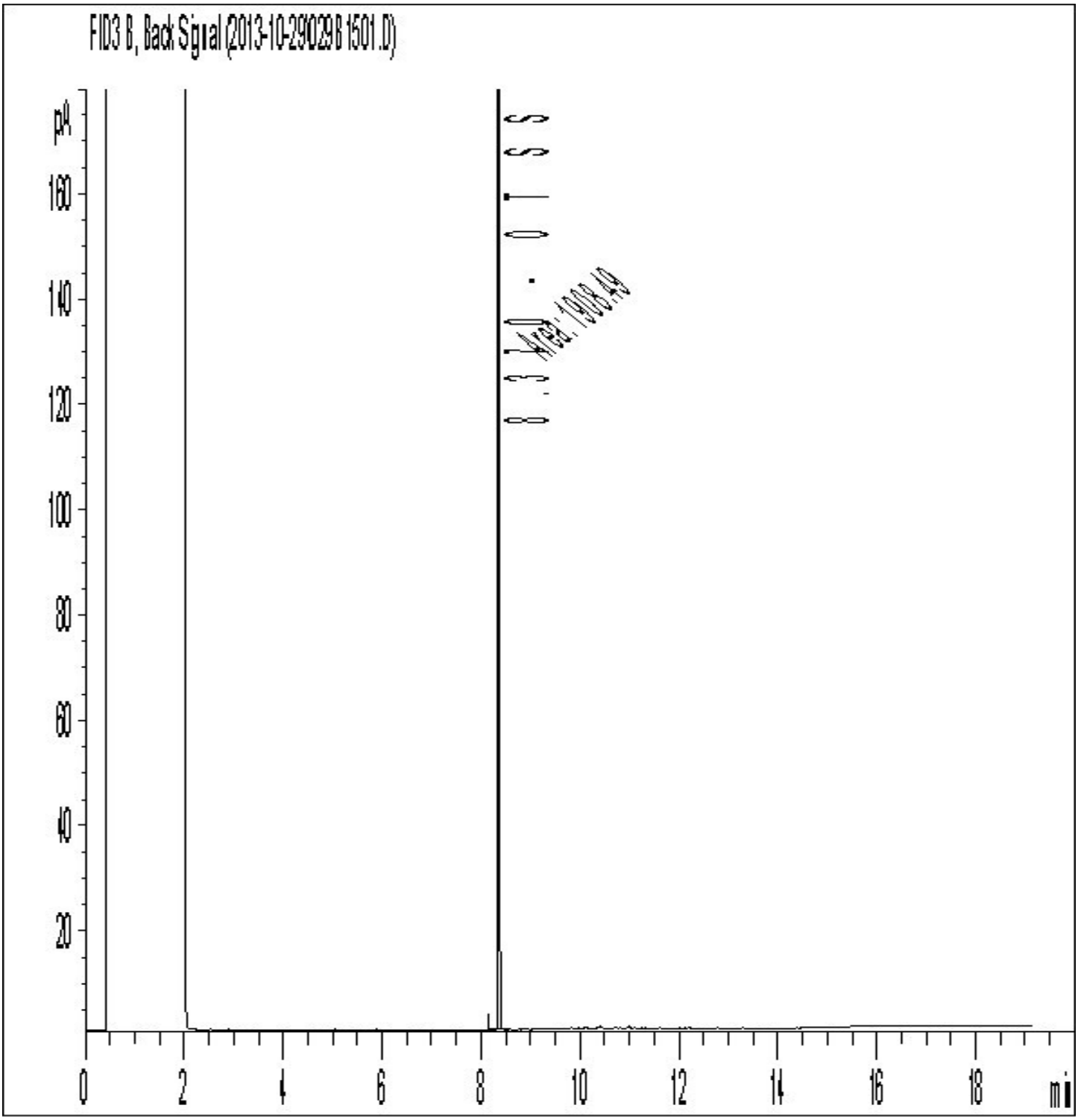
*MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

COC-1004 (06/12) - ENV. ENG. Maxxam Analytics International Corporation o/a Maxxam Analytics White: Maxxam Yellow: Mail Pink: Client

Report Date: 2013/10/30
Maxxam Job #: B3I2136
Maxxam Sample: TP5128

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Project name: KENT@FLORENCE
Client ID: BH13-231 SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



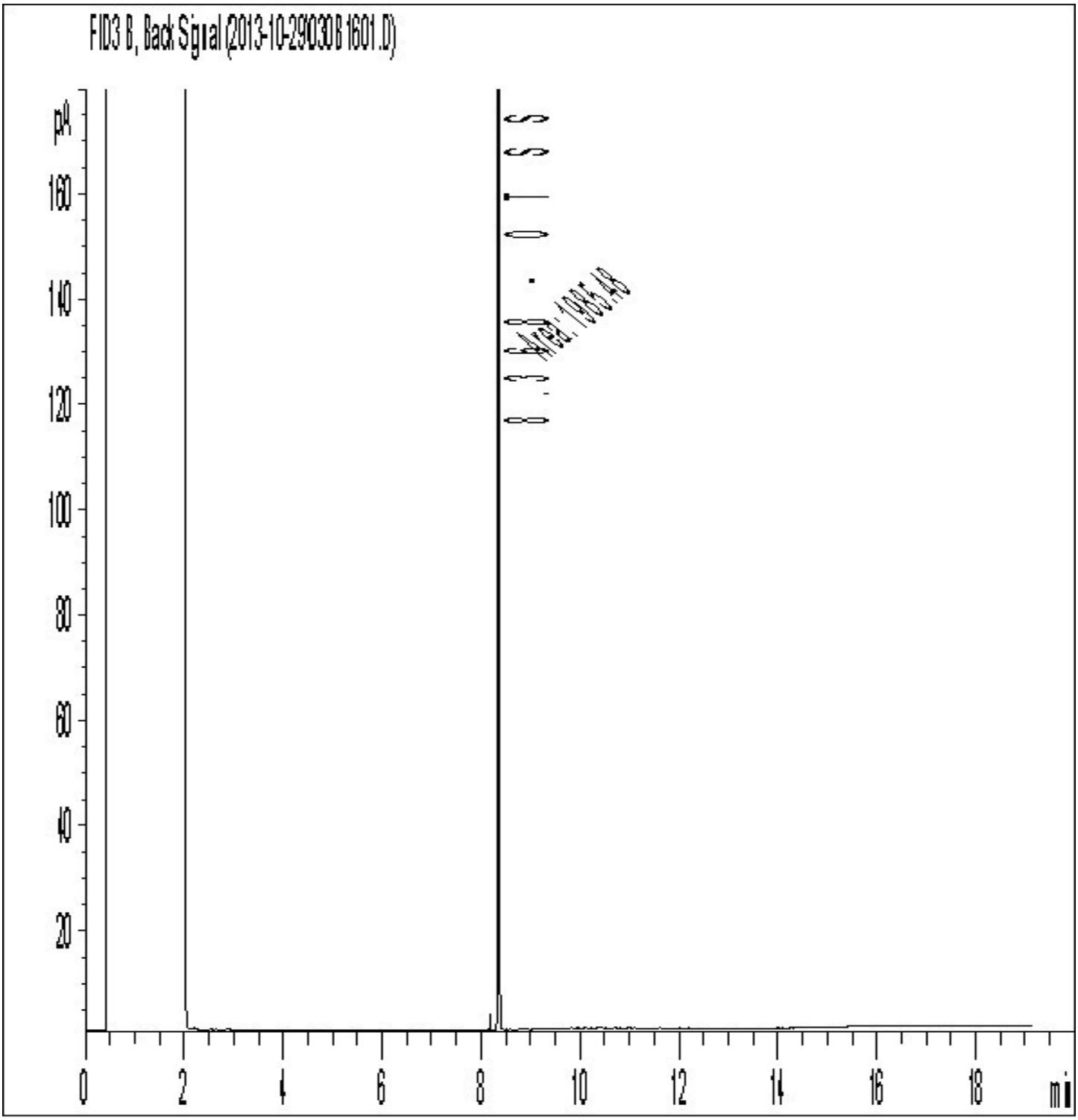
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam 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.maxxamanalytics.com

Report Date: 2013/10/30
Maxxam Job #: B3I2136
Maxxam Sample: TP5128 Lab-Dup

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Project name: KENT@FLORENCE
Client ID: BH13-231 SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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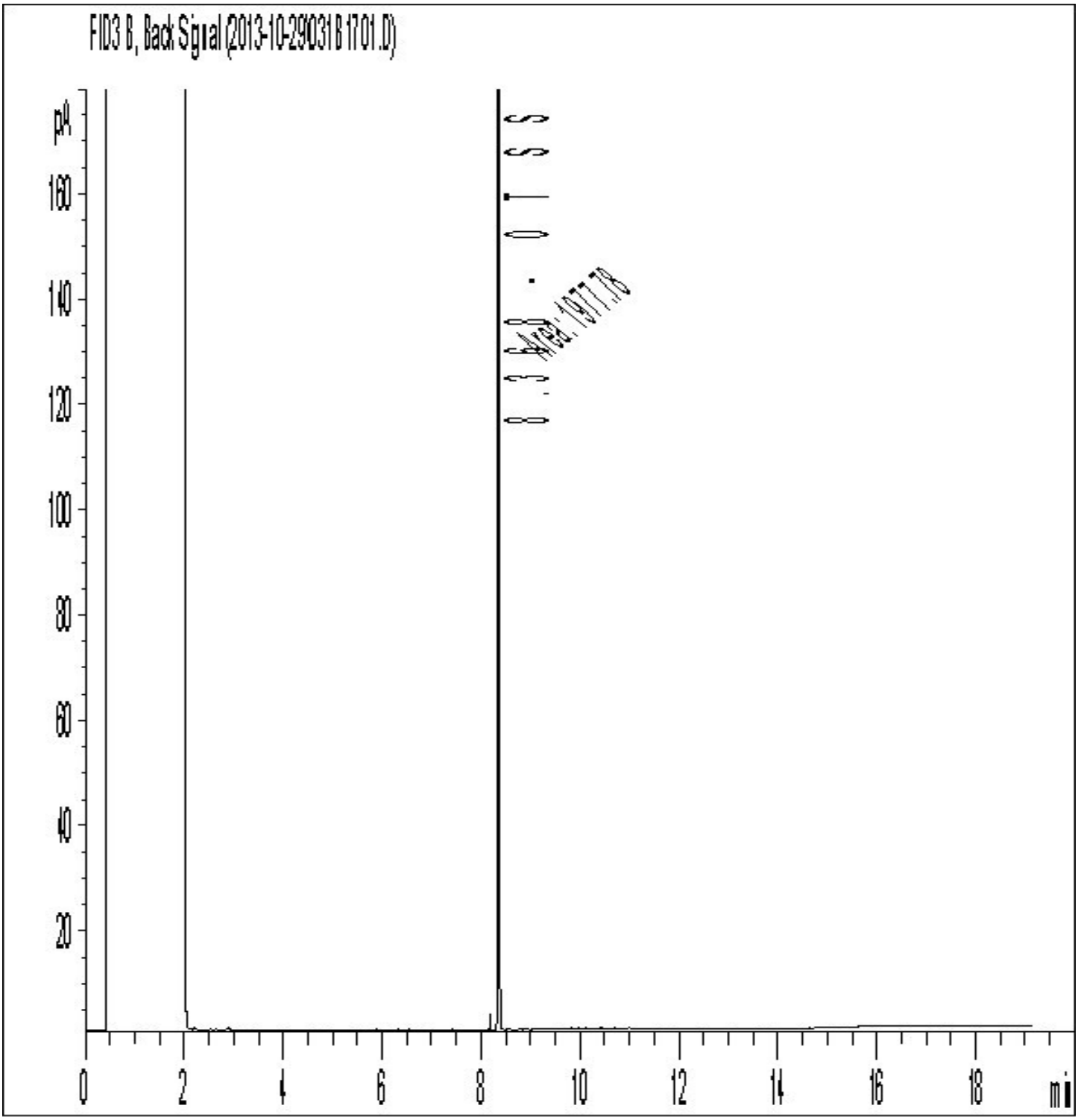
Report Date: 2013/10/30
Maxxam Job #: B3I2136
Maxxam Sample: TP5129

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Project name: KENT@FLORENCE
Client ID: BH13-231 SS7

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your C.O.C. #: 43681406, 436814-06-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/10/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3I0291
Received: 2013/10/22, 16:00

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	1	N/A	2013/10/29	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum (1)	1	N/A	2013/10/29	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2013/10/25	2013/10/28	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/10/25	2013/10/26	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	1	2013/10/28	2013/10/29	CAM SOP-00447	EPA 6020
MOISTURE	1	N/A	2013/10/28	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2013/10/26	2013/10/26	CAM SOP - 00318	EPA 8270
pH CaCl2 EXTRACT (1)	1	2013/10/29	2013/10/29	CAM SOP-00413	SM 4500H+ B
Volatile Organic Compounds in Soil (1)	1	2013/10/23	2013/10/24	CAM SOP-00226	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

Maxxam Job #: B3I0291
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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.

Total cover pages: 2

Maxxam Job #: B3I0291
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

RESULTS OF ANALYSES OF SOIL

Maxxam ID		TO4546		
Sampling Date		2013/10/22 10:30		
	Units	**BH13-201**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	12	0.2	3398732
Available (CaCl2) pH	pH	7.90		3402240

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3I0291
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TO4546		
Sampling Date		2013/10/22 10:30		
	Units	**BH13-201**	**RDL**	**QC Batch**
Metals				
Acid Extractable Aluminum (Al)	ug/g	4300	50	3400920
Acid Extractable Antimony (Sb)	ug/g	0.90	0.20	3400920
Acid Extractable Arsenic (As)	ug/g	3.4	1.0	3400920
Acid Extractable Barium (Ba)	ug/g	93	0.50	3400920
Acid Extractable Beryllium (Be)	ug/g	0.27	0.20	3400920
Acid Extractable Cadmium (Cd)	ug/g	0.52	0.10	3400920
Acid Extractable Calcium (Ca)	ug/g	92000	50	3400920
Acid Extractable Chromium (Cr)	ug/g	12	1.0	3400920
Acid Extractable Cobalt (Co)	ug/g	5.7	0.10	3400920
Acid Extractable Copper (Cu)	ug/g	31	0.50	3400920
Acid Extractable Iron (Fe)	ug/g	13000	50	3400920
Acid Extractable Lead (Pb)	ug/g	210	1.0	3400920
Acid Extractable Magnesium (Mg)	ug/g	8100	50	3400920
Acid Extractable Manganese (Mn)	ug/g	320	1.0	3400920
Acid Extractable Molybdenum (Mo)	ug/g	0.73	0.50	3400920
Acid Extractable Nickel (Ni)	ug/g	12	0.50	3400920
Acid Extractable Phosphorus (P)	ug/g	1200	50	3400920
Acid Extractable Potassium (K)	ug/g	770	200	3400920
Acid Extractable Selenium (Se)	ug/g	ND	0.50	3400920
Acid Extractable Silver (Ag)	ug/g	ND	0.20	3400920
Acid Extractable Sodium (Na)	ug/g	1500	100	3400920
Acid Extractable Strontium (Sr)	ug/g	210	1.0	3400920
Acid Extractable Thallium (Tl)	ug/g	0.12	0.050	3400920
Acid Extractable Vanadium (V)	ug/g	17	5.0	3400920
Acid Extractable Zinc (Zn)	ug/g	120	5.0	3400920

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

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Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		TO4546		
Sampling Date		2013/10/22 10:30		
	Units	**BH13-201**	**RDL**	**QC Batch**
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	3394031
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	ND	0.0050	3400098
Acenaphthylene	ug/g	0.0089	0.0050	3400098
Anthracene	ug/g	0.017	0.0050	3400098
Benzo(a)anthracene	ug/g	0.073	0.0050	3400098
Benzo(a)pyrene	ug/g	0.074	0.0050	3400098
Benzo(b/j)fluoranthene	ug/g	0.099	0.0050	3400098
Benzo(g,h,i)perylene	ug/g	0.054	0.0050	3400098
Benzo(k)fluoranthene	ug/g	0.035	0.0050	3400098
Chrysene	ug/g	0.067	0.0050	3400098
Dibenz(a,h)anthracene	ug/g	0.013	0.0050	3400098
Fluoranthene	ug/g	0.14	0.0050	3400098
Fluorene	ug/g	ND	0.0050	3400098
Indeno(1,2,3-cd)pyrene	ug/g	0.055	0.0050	3400098
1-Methylnaphthalene	ug/g	ND	0.0050	3400098
2-Methylnaphthalene	ug/g	ND	0.0050	3400098
Naphthalene	ug/g	ND	0.0050	3400098
Phenanthrene	ug/g	0.058	0.0050	3400098
Pyrene	ug/g	0.12	0.0050	3400098
Surrogate Recovery (%)				
D10-Anthracene	%	83		3400098
D14-Terphenyl (FS)	%	78		3400098
D8-Acenaphthylene	%	68		3400098

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

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Maxxam Job #: B3I0291
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TO4546		
Sampling Date		2013/10/22 10:30		
	Units	**BH13-201**	**RDL**	**QC Batch**
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.050	3393877
Volatile Organics				
Acetone (2-Propanone)	ug/g	ND	0.50	3380997
Benzene	ug/g	ND	0.020	3380997
Bromodichloromethane	ug/g	ND	0.050	3380997
Bromoform	ug/g	ND	0.050	3380997
Bromomethane	ug/g	ND	0.050	3380997
Carbon Tetrachloride	ug/g	ND	0.050	3380997
Chlorobenzene	ug/g	ND	0.050	3380997
Chloroform	ug/g	ND	0.050	3380997
Dibromochloromethane	ug/g	ND	0.050	3380997
1,2-Dichlorobenzene	ug/g	ND	0.050	3380997
1,3-Dichlorobenzene	ug/g	ND	0.050	3380997
1,4-Dichlorobenzene	ug/g	ND	0.050	3380997
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	3380997
1,1-Dichloroethane	ug/g	ND	0.050	3380997
1,2-Dichloroethane	ug/g	ND	0.050	3380997
1,1-Dichloroethylene	ug/g	ND	0.050	3380997
cis-1,2-Dichloroethylene	ug/g	ND	0.050	3380997
trans-1,2-Dichloroethylene	ug/g	ND	0.050	3380997
1,2-Dichloropropane	ug/g	ND	0.050	3380997
cis-1,3-Dichloropropene	ug/g	ND	0.030	3380997
trans-1,3-Dichloropropene	ug/g	ND	0.040	3380997
Ethylbenzene	ug/g	ND	0.020	3380997
Ethylene Dibromide	ug/g	ND	0.050	3380997
Hexane	ug/g	ND	0.050	3380997
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	3380997
Methyl Isobutyl Ketone	ug/g	ND	0.50	3380997
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	3380997
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	3380997
Styrene	ug/g	ND	0.050	3380997
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	3380997
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	3380997

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

Maxxam Job #: B3I0291
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TO4546		
Sampling Date		2013/10/22 10:30		
	Units	**BH13-201**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/g	ND	0.050	3380997
Toluene	ug/g	ND	0.020	3380997
1,1,1-Trichloroethane	ug/g	ND	0.050	3380997
1,1,2-Trichloroethane	ug/g	ND	0.050	3380997
Trichloroethylene	ug/g	ND	0.050	3380997
Vinyl Chloride	ug/g	ND	0.020	3380997
p+m-Xylene	ug/g	ND	0.020	3380997
o-Xylene	ug/g	ND	0.020	3380997
Xylene (Total)	ug/g	ND	0.020	3380997
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	3380997
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	96		3380997
D10-o-Xylene	%	101		3380997
D4-1,2-Dichloroethane	%	100		3380997
D8-Toluene	%	102		3380997

ND = Not detected
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QC Batch = Quality Control Batch

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Maxxam Job #: B3I0291
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		TO4546		
Sampling Date		2013/10/22 10:30		
	Units	**BH13-201**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/g	ND	10	3399346
F1 (C6-C10) - BTEX	ug/g	ND	10	3399346
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	ND	10	3398670
F3 (C16-C34 Hydrocarbons)	ug/g	ND	10	3398670
F4 (C34-C50 Hydrocarbons)	ug/g	ND	10	3398670
Reached Baseline at C50	ug/g	YES		3398670
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	106		3399346
4-Bromofluorobenzene	%	81		3399346
D10-Ethylbenzene	%	92		3399346
D4-1,2-Dichloroethane	%	99		3399346
o-Terphenyl	%	72		3398670

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Maxxam Job #: B3I0291
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

Test Summary

Maxxam ID TO4546
Sample ID BH13-201
Matrix Soil

Collected 2013/10/22
Shipped
Received 2013/10/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3394031	N/A	2013/10/29	Automated Statchk
1,3-Dichloropropene Sum	CALC	3393877	N/A	2013/10/29	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3399346	2013/10/25	2013/10/28	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3398670	2013/10/25	2013/10/26	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3400920	2013/10/28	2013/10/29	John Bowman
MOISTURE	BAL	3398732	N/A	2013/10/28	Habiba Essak
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3400098	2013/10/26	2013/10/26	Darryl Tiller
pH CaCl2 EXTRACT		3402240	2013/10/29	2013/10/29	Yogesh Patel
Volatile Organic Compounds in Soil	P&T/MS	3380997	2013/10/23	2013/10/24	Xueming Jiang

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Maxxam Job #: B3I0291
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

Package 1	2.7°C

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

GENERAL COMMENTS

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.maxxamanalytics.com

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Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3380997	4-Bromofluorobenzene	2013/10/24	100	60 - 140	99	60 - 140	93	%		
3380997	D10-o-Xylene	2013/10/24	90	60 - 130	97	60 - 130	104	%		
3380997	D4-1,2-Dichloroethane	2013/10/24	97	60 - 140	98	60 - 140	95	%		
3380997	D8-Toluene	2013/10/24	101	60 - 140	100	60 - 140	104	%		
3380997	Acetone (2-Propanone)	2013/10/24	97	60 - 140	97	60 - 140	ND, RDL=0.50	ug/g	NC	50
3380997	Benzene	2013/10/24	100	60 - 140	99	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	Bromodichloromethane	2013/10/24	103	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Bromoform	2013/10/24	100	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Bromomethane	2013/10/24	99	60 - 140	96	60 - 140	ND, RDL=0.050	ug/g	NC	50
3380997	Carbon Tetrachloride	2013/10/24	104	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Chlorobenzene	2013/10/24	102	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Chloroform	2013/10/24	99	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Dibromochloromethane	2013/10/24	103	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,2-Dichlorobenzene	2013/10/24	99	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,3-Dichlorobenzene	2013/10/24	100	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,4-Dichlorobenzene	2013/10/24	97	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Dichlorodifluoromethane (FREON 12)	2013/10/24	98	60 - 140	97	60 - 140	ND, RDL=0.050	ug/g	NC	50
3380997	1,1-Dichloroethane	2013/10/24	102	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,2-Dichloroethane	2013/10/24	99	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,1-Dichloroethylene	2013/10/24	112	60 - 140	110	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	cis-1,2-Dichloroethylene	2013/10/24	98	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	trans-1,2-Dichloroethylene	2013/10/24	100	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,2-Dichloropropane	2013/10/24	102	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	cis-1,3-Dichloropropene	2013/10/24	98	60 - 140	98	60 - 130	ND, RDL=0.030	ug/g	NC	50
3380997	trans-1,3-Dichloropropene	2013/10/24	106	60 - 140	105	60 - 130	ND, RDL=0.040	ug/g	NC	50
3380997	Ethylbenzene	2013/10/24	99	60 - 140	97	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	Ethylene Dibromide	2013/10/24	99	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Hexane	2013/10/24	100	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Methylene Chloride(Dichloromethane)	2013/10/24	98	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Methyl Isobutyl Ketone	2013/10/24	99	60 - 140	101	60 - 130	ND, RDL=0.50	ug/g	NC	50
3380997	Methyl Ethyl Ketone (2-Butanone)	2013/10/24	96	60 - 140	97	60 - 140	ND, RDL=0.50	ug/g	NC	50
3380997	Methyl t-butyl ether (MTBE)	2013/10/24	98	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Styrene	2013/10/24	104	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,1,1,2-Tetrachloroethane	2013/10/24	101	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,1,2,2-Tetrachloroethane	2013/10/24	101	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Tetrachloroethylene	2013/10/24	104	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Toluene	2013/10/24	98	60 - 140	97	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	1,1,1-Trichloroethane	2013/10/24	102	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	1,1,2-Trichloroethane	2013/10/24	97	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50

Maxxam Job #: B3I0291
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3380997	Trichloroethylene	2013/10/24	100	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Vinyl Chloride	2013/10/24	92	60 - 140	91	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	p+m-Xylene	2013/10/24	102	60 - 140	100	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	o-Xylene	2013/10/24	98	60 - 140	97	60 - 130	ND, RDL=0.020	ug/g	NC	50
3380997	Trichlorofluoromethane (FREON 11)	2013/10/24	99	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3380997	Xylene (Total)	2013/10/24					ND, RDL=0.020	ug/g	NC	50
3398670	o-Terphenyl	2013/10/25	74	30 - 130	79	30 - 130	76	%		
3398670	F2 (C10-C16 Hydrocarbons)	2013/10/25	102	50 - 130	106	80 - 120	ND, RDL=10	ug/g	NC	50
3398670	F3 (C16-C34 Hydrocarbons)	2013/10/25	102	50 - 130	106	80 - 120	ND, RDL=10	ug/g	36.2	50
3398670	F4 (C34-C50 Hydrocarbons)	2013/10/25	102	50 - 130	106	80 - 120	ND, RDL=10	ug/g	NC	50
3398732	Moisture	2013/10/28							3.5	50
3399346	1,4-Difluorobenzene	2013/10/28			104	60 - 140	104	%		
3399346	4-Bromofluorobenzene	2013/10/28			74	60 - 140	80	%		
3399346	D10-Ethylbenzene	2013/10/28			79	30 - 130	96	%		
3399346	D4-1,2-Dichloroethane	2013/10/28			101	60 - 140	97	%		
3399346	F1 (C6-C10)	2013/10/28			88	80 - 120	ND, RDL=10	ug/g	6.5	50
3399346	F1 (C6-C10) - BTEX	2013/10/28					ND, RDL=10	ug/g		
3400098	D10-Anthracene	2013/10/26	79	50 - 130	98	50 - 130	104	%		
3400098	D14-Terphenyl (FS)	2013/10/26	79	50 - 130	89	50 - 130	92	%		
3400098	D8-Acenaphthylene	2013/10/26	73	50 - 130	82	50 - 130	82	%		
3400098	Acenaphthene	2013/10/26	80	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	1.4	40
3400098	Acenaphthylene	2013/10/26	81	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Anthracene	2013/10/26	83	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Benzo(a)anthracene	2013/10/26	87	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Benzo(a)pyrene	2013/10/26	84	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Benzo(b/j)fluoranthene	2013/10/26	83	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Benzo(g,h,i)perylene	2013/10/26	83	50 - 130	101	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Benzo(k)fluoranthene	2013/10/26	78	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Chrysene	2013/10/26	90	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	4.5	40
3400098	Dibenz(a,h)anthracene	2013/10/26	86	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Fluoranthene	2013/10/26	88	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	Fluorene	2013/10/26	83	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	1.9	40
3400098	Indeno(1,2,3-cd)pyrene	2013/10/26	85	50 - 130	101	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400098	1-Methylnaphthalene	2013/10/26	110	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	5.2	40
3400098	2-Methylnaphthalene	2013/10/26	123	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	5.7	40
3400098	Naphthalene	2013/10/26	87	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	10	40
3400098	Phenanthrene	2013/10/26	97	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	1.1	40
3400098	Pyrene	2013/10/26	84	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3400920	Acid Extractable Aluminum (Al)	2013/10/29	NC	75 - 125	106	80 - 120	ND, RDL=50	ug/g		

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Maxxam Job #: B3I0291
Report Date: 2013/10/30

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: SLATER AND KENT
Your P.O. #: 16300R-20
Sampler Initials: JU

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3400920	Acid Extractable Antimony (Sb)	2013/10/29	100	75 - 125	102	80 - 120	ND, RDL=0.20	ug/g	NC	30
3400920	Acid Extractable Arsenic (As)	2013/10/29	95	75 - 125	98	80 - 120	ND, RDL=1.0	ug/g	NC	30
3400920	Acid Extractable Barium (Ba)	2013/10/29	NC	75 - 125	95	80 - 120	ND, RDL=0.50	ug/g	5.3	30
3400920	Acid Extractable Beryllium (Be)	2013/10/29	103	75 - 125	104	80 - 120	ND, RDL=0.20	ug/g	NC	30
3400920	Acid Extractable Cadmium (Cd)	2013/10/29	100	75 - 125	100	80 - 120	ND, RDL=0.10	ug/g	NC	30
3400920	Acid Extractable Calcium (Ca)	2013/10/29	NC	75 - 125	103	80 - 120	ND, RDL=50	ug/g		
3400920	Acid Extractable Chromium (Cr)	2013/10/29	99	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	5.0	30
3400920	Acid Extractable Cobalt (Co)	2013/10/29	98	75 - 125	102	80 - 120	ND, RDL=0.10	ug/g	3.2	30
3400920	Acid Extractable Copper (Cu)	2013/10/29	94	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	8.5	30
3400920	Acid Extractable Iron (Fe)	2013/10/29	NC	75 - 125	105	80 - 120	ND, RDL=50	ug/g		
3400920	Acid Extractable Lead (Pb)	2013/10/29	99	75 - 125	103	80 - 120	ND, RDL=1.0	ug/g	NC	30
3400920	Acid Extractable Magnesium (Mg)	2013/10/29	NC	75 - 125	102	80 - 120	ND, RDL=50	ug/g		
3400920	Acid Extractable Manganese (Mn)	2013/10/29	NC	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g		
3400920	Acid Extractable Molybdenum (Mo)	2013/10/29	100	75 - 125	99	80 - 120	ND, RDL=0.50	ug/g	NC	30
3400920	Acid Extractable Nickel (Ni)	2013/10/29	99	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	4.5	30
3400920	Acid Extractable Phosphorus (P)	2013/10/29	NC	75 - 125	127 (1)	80 - 120	ND, RDL=50	ug/g		
3400920	Acid Extractable Potassium (K)	2013/10/29	NC	75 - 125	97	80 - 120	ND, RDL=200	ug/g		
3400920	Acid Extractable Selenium (Se)	2013/10/29	97	75 - 125	98	80 - 120	ND, RDL=0.50	ug/g	NC	30
3400920	Acid Extractable Silver (Ag)	2013/10/29	100	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g	NC	30
3400920	Acid Extractable Sodium (Na)	2013/10/29	100	75 - 125	101	80 - 120	ND, RDL=100	ug/g		
3400920	Acid Extractable Strontium (Sr)	2013/10/29	NC	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g		
3400920	Acid Extractable Thallium (Tl)	2013/10/29	94	75 - 125	96	80 - 120	ND, RDL=0.050	ug/g	NC	30
3400920	Acid Extractable Vanadium (V)	2013/10/29	100	75 - 125	99	80 - 120	ND, RDL=5.0	ug/g	NC	30
3400920	Acid Extractable Zinc (Zn)	2013/10/29	99	75 - 125	102	80 - 120	ND, RDL=5.0	ug/g	NC	30

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Validation Signature Page

Maxxam Job #: B3I0291

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

Cristina Carriere, Scientific Services

Floyd Mayede, Senior Analyst

Steve Roberts, Lab Supervisor, Ottawa

==========

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

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Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-653-6266 Fax:(905) 817-5779 www.maxxam.ca

STANTEC CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:

Company Name: #2267 Stantec Consulting Ltd
Contact Name: Accounts Payable
Address: 1331 Clyde Avenue Suite 400
Ottawa ON K2C 3G4
Phone: (613)722-4420 Fax: (613)738-0721
Email: Stantec.Accounts.Payable.Invoices@Stantec.com

REPORT INFORMATION (if differs from invoice):

Company Name: Stantec Consulting Ltd.
Contact Name: Jill Peters-Dechman
Address: Suite 400, 1331 Clyde Avenue Ottawa, ON K2C3G4
Phone: 613-722-4420 Fax: 613-722-2799
Email: jill.peters-dechman@stantec.com, edd@stantec.c

PROJECT INFORMATION:

Quotation #: B31780
Task #: 400.103
Project #: 163401060.400.103
Profit Centre: 1225
Site #: Slate and Kent
Sampled By: J.W.

Laboratory Use Only:

MAXXAM JOB #:
BOTTLE ORDER #: 436814
CHAIN OF CUSTODY #: C#436814-06-01
PROJECT MANAGER: Parnian Baber

Regulation 153 (2011)

- [x] Table 1
- [ ] Table 2
- [ ] Table 3
- [ ] Table ___
- [ ] Res/Park
- [x] Ind/Comm
- [ ] Agri/Other
- [ ] Medium/Fine
- [x] Coarse
- [ ] For RSC

Other Regulations

- [ ] CCME
- [ ] Reg. 558
- [ ] MISA
- [ ] PWQO
- [ ] Other ___
- [ ] Sanitary Sewer Bylaw
- [ ] Storm Sewer Bylaw
- Municipality ___

SPECIAL INSTRUCTIONS

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

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

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

ANALYSIS REQUESTED (Please be specific):

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	O'Reg 153 Petroleum Hydrocarbons (Soil)	O'Reg 153 Volatile Organics (Soil)	O'Reg 153 PAHs (Soil)	Acid Extr. Metals (aqua regia) by ICPMS	pH CaCl2 EXTRACT	# of Bottles	Comments
1		BH13-201	2013/10/22	13:30	Soil	N	N	✓	✓	✓	✓	✓	4	
2														
3														
4														
5														
6														
7														
8														
9														
10														

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: [x]
(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 #)*

22-Oct-13 16:00
Parnian Baber
B3I0291
CB2 OTT-002

REC'D IN OTTAWA

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
J. Wan	2013/10/22	15:55	Shawn Colbert	2013/10/22	16:00	4

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	2/4/2	Present	✓	
		Intact	✓	

ON ICE

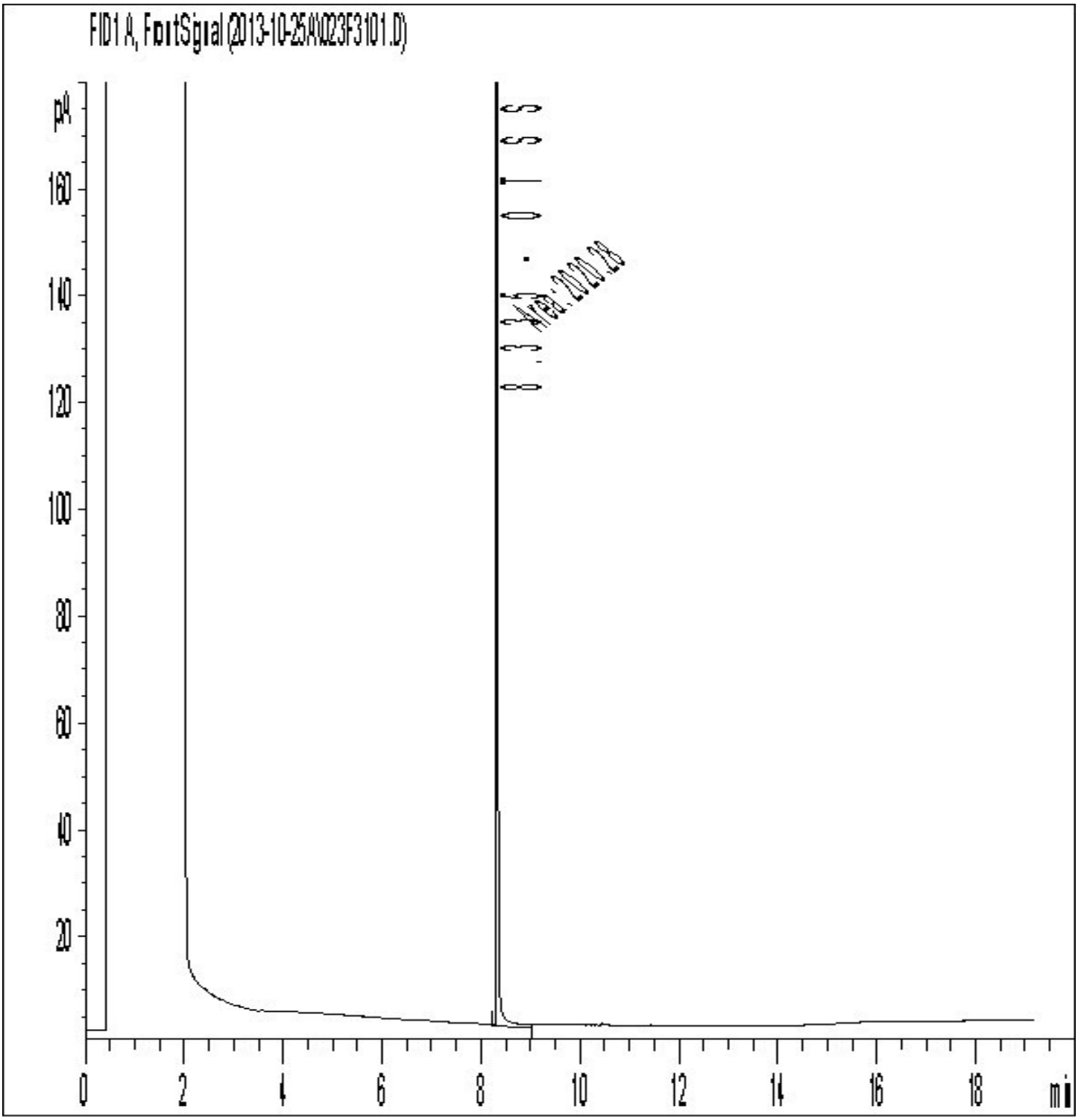
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Maxxam Yellow: Client

Report Date: 2013/10/30
Maxxam Job #: B3I0291
Maxxam Sample: TO4546

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Project name: SLATER AND KENT
Client ID: BH13-201

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Site#: LARUIER @ NICHOLAS
Your C.O.C. #: 44103108, 441031-08-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/11/04

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3I3877
Received: 2013/10/28, 08:30

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	2	N/A	2013/11/01	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum (1)	2	N/A	2013/11/04	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	2	2013/10/28	2013/10/28	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/10/28	2013/10/29	OTT SOP-00001	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/10/28	2013/10/30	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	2	2013/11/01	2013/11/02	CAM SOP-00447	EPA 6020
MOISTURE	2	N/A	2013/10/30	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	2	2013/10/29	2013/10/30	CAM SOP - 00318	EPA 8270
pH CaCl2 EXTRACT (1)	2	2013/10/31	2013/10/31	CAM SOP-00413	SM 4500H+ B
Volatile Organic Compounds in Soil (1)	2	2013/11/03	2013/11/04	CAM SOP-00226	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

Maxxam Job #: B3I3877
Report Date: 2013/11/04

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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Total cover pages: 2

Maxxam Job #: B3I3877
Report Date: 2013/11/04

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

RESULTS OF ANALYSES OF SOIL

Maxxam ID		TQ3961	TQ3962		
Sampling Date		2013/10/25 14:00	2013/10/25 15:30		
	Units	**BH13-209 SS2**	**BH13-209 SS6**	**RDL**	**QC Batch**
Inorganics					
Moisture	%	16	45	0.2	3402533
Available (CaCl2) pH	pH	7.27	7.49		3405605

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3I3877
Report Date: 2013/11/04

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TQ3961	TQ3962		
Sampling Date		2013/10/25 14:00	2013/10/25 15:30		
	Units	**BH13-209 SS2**	**BH13-209 SS6**	**RDL**	**QC Batch**
Metals					
Acid Extractable Aluminum (Al)	ug/g	8700	35000	50	3407044
Acid Extractable Antimony (Sb)	ug/g	ND	ND	0.20	3407044
Acid Extractable Arsenic (As)	ug/g	ND	2.4	1.0	3407044
Acid Extractable Barium (Ba)	ug/g	62	410	0.50	3407044
Acid Extractable Beryllium (Be)	ug/g	0.22	0.73	0.20	3407044
Acid Extractable Cadmium (Cd)	ug/g	ND	ND	0.10	3407044
Acid Extractable Calcium (Ca)	ug/g	3400	11000	50	3407044
Acid Extractable Chromium (Cr)	ug/g	25	140	1.0	3407044
Acid Extractable Cobalt (Co)	ug/g	4.4	28	0.10	3407044
Acid Extractable Copper (Cu)	ug/g	8.8	67	0.50	3407044
Acid Extractable Iron (Fe)	ug/g	11000	52000	50	3407044
Acid Extractable Lead (Pb)	ug/g	3.4	6.7	1.0	3407044
Acid Extractable Magnesium (Mg)	ug/g	3500	25000	50	3407044
Acid Extractable Manganese (Mn)	ug/g	190	700	1.0	3407044
Acid Extractable Molybdenum (Mo)	ug/g	ND	0.98	0.50	3407044
Acid Extractable Nickel (Ni)	ug/g	14	80	0.50	3407044
Acid Extractable Phosphorus (P)	ug/g	710	960	50	3407044
Acid Extractable Potassium (K)	ug/g	1200	15000	200	3407044
Acid Extractable Selenium (Se)	ug/g	ND	ND	0.50	3407044
Acid Extractable Silver (Ag)	ug/g	ND	ND	0.20	3407044
Acid Extractable Sodium (Na)	ug/g	150	2500	100	3407044
Acid Extractable Strontium (Sr)	ug/g	16	70	1.0	3407044
Acid Extractable Thallium (Tl)	ug/g	0.078	0.51	0.050	3407044
Acid Extractable Vanadium (V)	ug/g	23	120	5.0	3407044
Acid Extractable Zinc (Zn)	ug/g	45	140	5.0	3407044

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

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Maxxam Job #: B3I3877
Report Date: 2013/11/04

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		TQ3961		TQ3962		
Sampling Date		2013/10/25 14:00		2013/10/25 15:30		
	Units	**BH13-209 SS2**	**RDL**	**BH13-209 SS6**	**RDL**	**QC Batch**
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	ND	0.014	3401004
Polyaromatic Hydrocarbons						
Acenaphthene	ug/g	0.035	0.0050	ND	0.010	3403675
Acenaphthylene	ug/g	ND	0.0050	ND	0.010	3403675
Anthracene	ug/g	0.047	0.0050	ND	0.010	3403675
Benzo(a)anthracene	ug/g	0.075	0.0050	ND	0.010	3403675
Benzo(a)pyrene	ug/g	0.054	0.0050	ND	0.010	3403675
Benzo(b/j)fluoranthene	ug/g	0.068	0.0050	ND	0.010	3403675
Benzo(g,h,i)perylene	ug/g	0.028	0.0050	ND	0.010	3403675
Benzo(k)fluoranthene	ug/g	0.022	0.0050	ND	0.010	3403675
Chrysene	ug/g	0.064	0.0050	ND	0.010	3403675
Dibenz(a,h)anthracene	ug/g	0.0071	0.0050	ND	0.010	3403675
Fluoranthene	ug/g	0.18	0.0050	ND	0.010	3403675
Fluorene	ug/g	0.025	0.0050	ND	0.010	3403675
Indeno(1,2,3-cd)pyrene	ug/g	0.030	0.0050	ND	0.010	3403675
1-Methylnaphthalene	ug/g	0.0055	0.0050	ND	0.010	3403675
2-Methylnaphthalene	ug/g	ND	0.0050	ND	0.010	3403675
Naphthalene	ug/g	0.0060	0.0050	ND	0.010	3403675
Phenanthrene	ug/g	0.19	0.0050	ND	0.010	3403675
Pyrene	ug/g	0.14	0.0050	ND	0.010	3403675
Surrogate Recovery (%)						
D10-Anthracene	%	91		91		3403675
D14-Terphenyl (FS)	%	93		89		3403675
D8-Acenaphthylene	%	105		99		3403675

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

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Maxxam Job #: B3I3877
Report Date: 2013/11/04

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TQ3961	TQ3962		
Sampling Date		2013/10/25 14:00	2013/10/25 15:30		
	Units	**BH13-209 SS2**	**BH13-209 SS6**	**RDL**	**QC Batch**
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	0.050	3407694
Volatile Organics					
Acetone (2-Propanone)	ug/g	ND	ND	0.50	3409124
Benzene	ug/g	ND	ND	0.020	3409124
Bromodichloromethane	ug/g	ND	ND	0.050	3409124
Bromoform	ug/g	ND	ND	0.050	3409124
Bromomethane	ug/g	ND	ND	0.050	3409124
Carbon Tetrachloride	ug/g	ND	ND	0.050	3409124
Chlorobenzene	ug/g	ND	ND	0.050	3409124
Chloroform	ug/g	ND	ND	0.050	3409124
Dibromochloromethane	ug/g	ND	ND	0.050	3409124
1,2-Dichlorobenzene	ug/g	ND	ND	0.050	3409124
1,3-Dichlorobenzene	ug/g	ND	ND	0.050	3409124
1,4-Dichlorobenzene	ug/g	ND	ND	0.050	3409124
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	0.050	3409124
1,1-Dichloroethane	ug/g	ND	ND	0.050	3409124
1,2-Dichloroethane	ug/g	ND	ND	0.050	3409124
1,1-Dichloroethylene	ug/g	ND	ND	0.050	3409124
cis-1,2-Dichloroethylene	ug/g	ND	ND	0.050	3409124
trans-1,2-Dichloroethylene	ug/g	ND	ND	0.050	3409124
1,2-Dichloropropane	ug/g	ND	ND	0.050	3409124
cis-1,3-Dichloropropene	ug/g	ND	ND	0.030	3409124
trans-1,3-Dichloropropene	ug/g	ND	ND	0.040	3409124
Ethylbenzene	ug/g	ND	ND	0.020	3409124
Ethylene Dibromide	ug/g	ND	ND	0.050	3409124
Hexane	ug/g	ND	ND	0.050	3409124
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	0.050	3409124
Methyl Isobutyl Ketone	ug/g	ND	ND	0.50	3409124
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	0.50	3409124
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	0.050	3409124
Styrene	ug/g	ND	ND	0.050	3409124
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	0.050	3409124
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	0.050	3409124

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

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VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TQ3961	TQ3962		
Sampling Date		2013/10/25 14:00	2013/10/25 15:30		
	Units	**BH13-209 SS2**	**BH13-209 SS6**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/g	ND	ND	0.050	3409124
Toluene	ug/g	ND	ND	0.020	3409124
1,1,1-Trichloroethane	ug/g	ND	ND	0.050	3409124
1,1,2-Trichloroethane	ug/g	ND	ND	0.050	3409124
Trichloroethylene	ug/g	ND	ND	0.050	3409124
Vinyl Chloride	ug/g	ND	ND	0.020	3409124
p+m-Xylene	ug/g	ND	ND	0.020	3409124
o-Xylene	ug/g	ND	ND	0.020	3409124
Xylene (Total)	ug/g	ND	ND	0.020	3409124
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	0.050	3409124
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	92	92		3409124
D10-o-Xylene	%	103	108		3409124
D4-1,2-Dichloroethane	%	106	105		3409124
D8-Toluene	%	102	104		3409124

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

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		TQ3961	TQ3962		
Sampling Date		2013/10/25 14:00	2013/10/25 15:30		
	Units	**BH13-209 SS2**	**BH13-209 SS6**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons					
F1 (C6-C10)	ug/g	ND	ND	10	3399346
F1 (C6-C10) - BTEX	ug/g	ND	ND	10	3399346
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	10	3401648
F3 (C16-C34 Hydrocarbons)	ug/g	12	ND	10	3401648
F4 (C34-C50 Hydrocarbons)	ug/g	16	ND	10	3401648
Reached Baseline at C50	ug/g	YES	YES		3401648
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	103	104		3399346
4-Bromofluorobenzene	%	87	74		3399346
D10-Ethylbenzene	%	94	97		3399346
D4-1,2-Dichloroethane	%	99	97		3399346
o-Terphenyl	%	86	87		3401648

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RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Test Summary

Maxxam ID TQ3961 **Collected** 2013/10/25
Sample ID BH13-209 SS2 **Shipped**
Matrix Soil **Received** 2013/10/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3401004	N/A	2013/11/01	Automated Statchk
1,3-Dichloropropene Sum	CALC	3407694	N/A	2013/11/04	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3399346	2013/10/28	2013/10/28	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3401648	2013/10/28	2013/10/29	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3407044	2013/11/01	2013/11/02	John Bowman
MOISTURE	BAL	3402533	N/A	2013/10/30	Habiba Essak
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3403675	2013/10/29	2013/10/30	Darryl Tiller
pH CaCl2 EXTRACT		3405605	2013/10/31	2013/10/31	Neil Dassanayake
Volatile Organic Compounds in Soil	P&T/MS	3409124	2013/11/03	2013/11/04	Xueming Jiang

Maxxam ID TQ3961 Dup **Collected** 2013/10/25
Sample ID BH13-209 SS2 **Shipped**
Matrix Soil **Received** 2013/10/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Soil	P&T/MS	3409124	2013/11/03	2013/11/04	Xueming Jiang

Maxxam ID TQ3962 **Collected** 2013/10/25
Sample ID BH13-209 SS6 **Shipped**
Matrix Soil **Received** 2013/10/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3401004	N/A	2013/11/01	Automated Statchk
1,3-Dichloropropene Sum	CALC	3407694	N/A	2013/11/04	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3399346	2013/10/28	2013/10/28	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3401648	2013/10/28	2013/10/30	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3407044	2013/11/01	2013/11/02	John Bowman
MOISTURE	BAL	3402533	N/A	2013/10/30	Habiba Essak
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3403675	2013/10/29	2013/10/30	Darryl Tiller
pH CaCl2 EXTRACT		3405605	2013/10/31	2013/10/31	Neil Dassanayake
Volatile Organic Compounds in Soil	P&T/MS	3409124	2013/11/03	2013/11/04	Xueming Jiang

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Package 1	3.3°C

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

GENERAL COMMENTS

Cooler custody seal was present and intact.

Sample TQ3962-01: PAH Analysis: Detection limits were adjusted for high moisture content.

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3399346	1,4-Difluorobenzene	2013/10/28			104	60 - 140	104	%		
3399346	4-Bromofluorobenzene	2013/10/28			74	60 - 140	80	%		
3399346	D10-Ethylbenzene	2013/10/28			79	30 - 130	96	%		
3399346	D4-1,2-Dichloroethane	2013/10/28			101	60 - 140	97	%		
3399346	F1 (C6-C10)	2013/10/28			88	80 - 120	ND, RDL=10	ug/g	6.5	50
3399346	F1 (C6-C10) - BTEX	2013/10/28					ND, RDL=10	ug/g		
3401648	o-Terphenyl	2013/10/29	77	30 - 130	77	30 - 130	80	%		
3401648	F2 (C10-C16 Hydrocarbons)	2013/10/29	77	50 - 130	77	80 - 120	ND, RDL=10	ug/g	NC	50
3401648	F3 (C16-C34 Hydrocarbons)	2013/10/29	77	50 - 130	77	80 - 120	ND, RDL=10	ug/g	NC	50
3401648	F4 (C34-C50 Hydrocarbons)	2013/10/29	77	50 - 130	77	80 - 120	ND, RDL=10	ug/g	NC	50
3402533	Moisture	2013/10/30							6.1	50
3403675	D10-Anthracene	2013/10/30	85	50 - 130	90	50 - 130	87	%		
3403675	D14-Terphenyl (FS)	2013/10/30	81	50 - 130	84	50 - 130	83	%		
3403675	D8-Acenaphthylene	2013/10/30	96	50 - 130	97	50 - 130	96	%		
3403675	Acenaphthene	2013/10/30	84	50 - 130	92	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Acenaphthylene	2013/10/30	92	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Anthracene	2013/10/30	84	50 - 130	89	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Benzo(a)anthracene	2013/10/30	91	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Benzo(a)pyrene	2013/10/30	77	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Benzo(b/j)fluoranthene	2013/10/30	76	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Benzo(g,h,i)perylene	2013/10/30	74	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Benzo(k)fluoranthene	2013/10/30	80	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Chrysene	2013/10/30	82	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Dibenz(a,h)anthracene	2013/10/30	77	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Fluoranthene	2013/10/30	83	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Fluorene	2013/10/30	91	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Indeno(1,2,3-cd)pyrene	2013/10/30	78	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	1-Methylnaphthalene	2013/10/30	75	50 - 130	81	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	2-Methylnaphthalene	2013/10/30	72	50 - 130	80	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Naphthalene	2013/10/30	74	50 - 130	81	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Phenanthrene	2013/10/30	82	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3403675	Pyrene	2013/10/30	79	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	15.2	40
3407044	Acid Extractable Aluminum (Al)	2013/11/02	NC	75 - 125	108	80 - 120	ND, RDL=50	ug/g		
3407044	Acid Extractable Antimony (Sb)	2013/11/02	101	75 - 125	104	80 - 120	ND, RDL=0.20	ug/g	NC	30
3407044	Acid Extractable Arsenic (As)	2013/11/02	101	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	NC	30
3407044	Acid Extractable Barium (Ba)	2013/11/02	NC	75 - 125	99	80 - 120	ND, RDL=0.50	ug/g	3.4	30
3407044	Acid Extractable Beryllium (Be)	2013/11/02	98	75 - 125	99	80 - 120	ND, RDL=0.20	ug/g	NC	30
3407044	Acid Extractable Cadmium (Cd)	2013/11/02	108	75 - 125	103	80 - 120	ND, RDL=0.10	ug/g	NC	30
3407044	Acid Extractable Calcium (Ca)	2013/11/02	NC	75 - 125	102	80 - 120	ND, RDL=50	ug/g		

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3407044	Acid Extractable Chromium (Cr)	2013/11/02	105	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	1.8	30
3407044	Acid Extractable Cobalt (Co)	2013/11/02	107	75 - 125	103	80 - 120	ND, RDL=0.10	ug/g	2.4	30
3407044	Acid Extractable Copper (Cu)	2013/11/02	106	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	1.4	30
3407044	Acid Extractable Iron (Fe)	2013/11/02	NC	75 - 125	104	80 - 120	ND, RDL=50	ug/g		
3407044	Acid Extractable Lead (Pb)	2013/11/02	102	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	0.2	30
3407044	Acid Extractable Magnesium (Mg)	2013/11/02	NC	75 - 125	101	80 - 120	ND, RDL=50	ug/g		
3407044	Acid Extractable Manganese (Mn)	2013/11/02	NC	75 - 125	98	80 - 120	ND, RDL=1.0	ug/g		
3407044	Acid Extractable Molybdenum (Mo)	2013/11/02	108	75 - 125	104	80 - 120	ND, RDL=0.50	ug/g	NC	30
3407044	Acid Extractable Nickel (Ni)	2013/11/02	109	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	2.9	30
3407044	Acid Extractable Phosphorus (P)	2013/11/02	NC	75 - 125	122(1)	80 - 120	ND, RDL=50	ug/g		
3407044	Acid Extractable Potassium (K)	2013/11/02	NC	75 - 125	100	80 - 120	ND, RDL=200	ug/g		
3407044	Acid Extractable Selenium (Se)	2013/11/02	102	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	NC	30
3407044	Acid Extractable Silver (Ag)	2013/11/02	105	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g	NC	30
3407044	Acid Extractable Sodium (Na)	2013/11/02	101	75 - 125	100	80 - 120	ND, RDL=100	ug/g		
3407044	Acid Extractable Strontium (Sr)	2013/11/02	102	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g		
3407044	Acid Extractable Thallium (Tl)	2013/11/02	92	75 - 125	92	80 - 120	ND, RDL=0.050	ug/g	NC	30
3407044	Acid Extractable Vanadium (V)	2013/11/02	NC	75 - 125	95	80 - 120	ND, RDL=5.0	ug/g	0.06	30
3407044	Acid Extractable Zinc (Zn)	2013/11/02	NC	75 - 125	101	80 - 120	ND, RDL=5.0	ug/g	0.6	30
3409124	4-Bromofluorobenzene	2013/11/04	95	60 - 140	96	60 - 140	92	%		
3409124	D10-o-Xylene	2013/11/04	108	60 - 130	105	60 - 130	103	%		
3409124	D4-1,2-Dichloroethane	2013/11/04	101	60 - 140	104	60 - 140	105	%		
3409124	D8-Toluene	2013/11/04	105	60 - 140	103	60 - 140	103	%		
3409124	Acetone (2-Propanone)	2013/11/04	94	60 - 140	101	60 - 140	ND, RDL=0.50	ug/g	NC	50
3409124	Benzene	2013/11/04	99	60 - 140	97	60 - 130	ND, RDL=0.020	ug/g	NC	50
3409124	Bromodichloromethane	2013/11/04	105	60 - 140	108	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Bromoform	2013/11/04	99	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Bromomethane	2013/11/04	90	60 - 140	86	60 - 140	ND, RDL=0.050	ug/g	NC	50
3409124	Carbon Tetrachloride	2013/11/04	107	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Chlorobenzene	2013/11/04	107	60 - 140	106	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Chloroform	2013/11/04	101	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Dibromochloromethane	2013/11/04	106	60 - 140	108	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	1,2-Dichlorobenzene	2013/11/04	107	60 - 140	105	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	1,3-Dichlorobenzene	2013/11/04	111	60 - 140	106	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	1,4-Dichlorobenzene	2013/11/04	107	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Dichlorodifluoromethane (FREON 12)	2013/11/04	86	60 - 140	77	60 - 140	ND, RDL=0.050	ug/g	NC	50
3409124	1,1-Dichloroethane	2013/11/04	103	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	1,2-Dichloroethane	2013/11/04	101	60 - 140	104	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	1,1-Dichloroethylene	2013/11/04	113	60 - 140	107	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	cis-1,2-Dichloroethylene	2013/11/04	95	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50

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Report Date: 2013/11/04

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Your P.O. #: 16300R-20
Sampler Initials: AW

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3409124	trans-1,2-Dichloroethylene	2013/11/04	97	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	1,2-Dichloropropane	2013/11/04	104	60 - 140	105	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	cis-1,3-Dichloropropene	2013/11/04	100	60 - 140	101	60 - 130	ND, RDL=0.030	ug/g	NC	50
3409124	trans-1,3-Dichloropropene	2013/11/04	112	60 - 140	114	60 - 130	ND, RDL=0.040	ug/g	NC	50
3409124	Ethylbenzene	2013/11/04	110	60 - 140	106	60 - 130	ND, RDL=0.020	ug/g	NC	50
3409124	Ethylene Dibromide	2013/11/04	101	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Hexane	2013/11/04	109	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Methylene Chloride(Dichloromethane)	2013/11/04	92	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Methyl Isobutyl Ketone	2013/11/04	101	60 - 140	110	60 - 130	ND, RDL=0.50	ug/g	NC	50
3409124	Methyl Ethyl Ketone (2-Butanone)	2013/11/04	95	60 - 140	104	60 - 140	ND, RDL=0.50	ug/g	NC	50
3409124	Methyl t-butyl ether (MTBE)	2013/11/04	87	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Styrene	2013/11/04	109	60 - 140	109	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	1,1,1,2-Tetrachloroethane	2013/11/04	106	60 - 140	106	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	1,1,2,2-Tetrachloroethane	2013/11/04	100	60 - 140	106	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Tetrachloroethylene	2013/11/04	110	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Toluene	2013/11/04	105	60 - 140	101	60 - 130	ND, RDL=0.020	ug/g	NC	50
3409124	1,1,1-Trichloroethane	2013/11/04	105	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	1,1,2-Trichloroethane	2013/11/04	100	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Trichloroethylene	2013/11/04	100	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Vinyl Chloride	2013/11/04	90	60 - 140	83	60 - 130	ND, RDL=0.020	ug/g	NC	50
3409124	p+m-Xylene	2013/11/04	113	60 - 140	109	60 - 130	ND, RDL=0.020	ug/g	NC	50
3409124	o-Xylene	2013/11/04	107	60 - 140	105	60 - 130	ND, RDL=0.020	ug/g	NC	50
3409124	Trichlorofluoromethane (FREON 11)	2013/11/04	97	60 - 140	91	60 - 130	ND, RDL=0.050	ug/g	NC	50
3409124	Xylene (Total)	2013/11/04					ND, RDL=0.020	ug/g	NC	50

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Validation Signature Page

Maxxam Job #: B3I3877

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

Cristina Carriere, Scientific Services

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

Yuan Zhou, Analyst II

==========

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 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.maxxamanalytics.com

Maxxam Analytics International Corporation o/a Maxxam Analytics Laurier @ Nicholas

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-653-6266 Fax:(905) 817-5779 www.maxxam.ca

STANTEC CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#2267 Stantec Consulting Ltd	Company Name:		Quotation #:	B31780	MAXXAM JOB #:	BOTTLE ORDER #: 441031
Contact Name:	Accounts Payable	Contact Name:	Jill Peters-Dechman	Task #:			
Address:	1331 Clyde Avenue Suite 400 Ottawa ON K2C 3G4	Address:		Project #:	163401060.400.103		
Phone:	(613)722-4420 Fax: (613)738-0721	Phone:	Fax:	Profit Centre:		CHAIN OF CUSTODY #: C#441031-08-01	PROJECT MANAGER: Parnian Baber
Email:	Stantec.Accounts.Payable.Invoices@Stantec.com	Email:	jill.peters-dechman@stantec.com, edd@stantec.c	Site #:	Laurier @ Nicholas		
				Sampled By:	A. Waldick		

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

Other Regulations: [ ] CCME [ ] Reg. 558 [ ] MISA [ ] PWQO [ ] Other ___ ; [ ] Sanitary Sewer Bylaw [ ] Storm Sewer Bylaw Municipality ___

SPECIAL INSTRUCTIONS

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

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

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

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: [X]
(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	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	Acid Extr. Metals (aqua regia) by ICPMS	O'Reg 153 PAHs (Soil)	O'Reg 153 Petroleum Hydrocarbons (Soil)	O'Reg 153 Volatile Organics (Soil)	pH CaCl2 EXTRACT	# of Bottles	Comments
1		BH13-209552	Oct 25 2013	14:00	Soil	N	N	X	X	X	X	X	4	
2		BH13-209556	Oct 25 2013	15:30	Soil	N	N	X	X	X	X	X	4	
3														
4														
5														
6														
7														
8														
9														
10														

28-Oct-13 08:30
Parnian Baber
B3I3877
CB2 OTT-002

REC'D IN OTTAWA

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
A.Waldick / A. Waldick	13/10/25		Shawn Colbert	2013/10/28	8:30	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	4/4/2	Present	✓	
		Intact	✓	

* 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.

White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

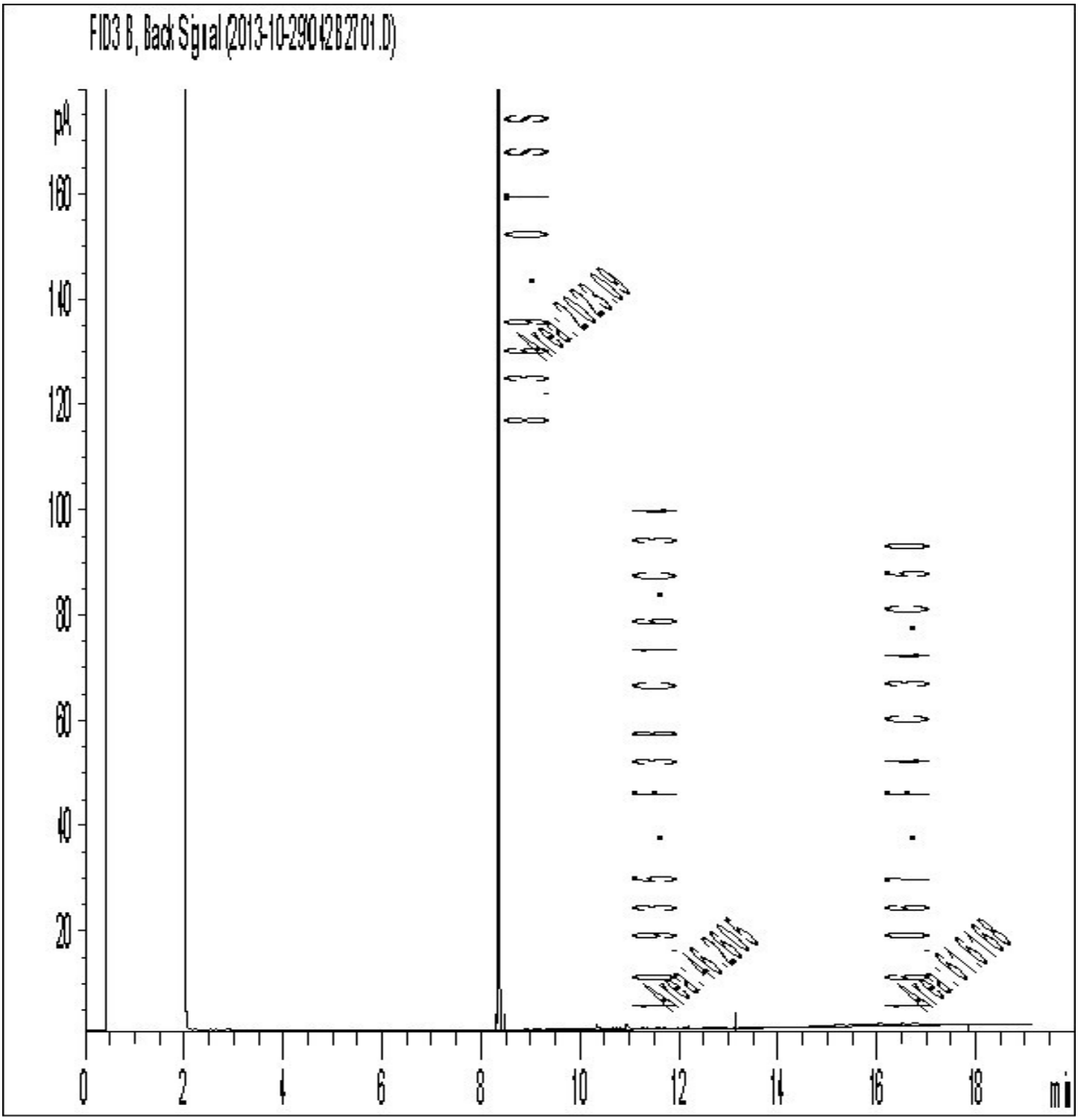
ONE

Report Date: 2013/11/04
Maxxam Job #: B3I3877
Maxxam Sample: TQ3961

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Client ID: BH13-209 SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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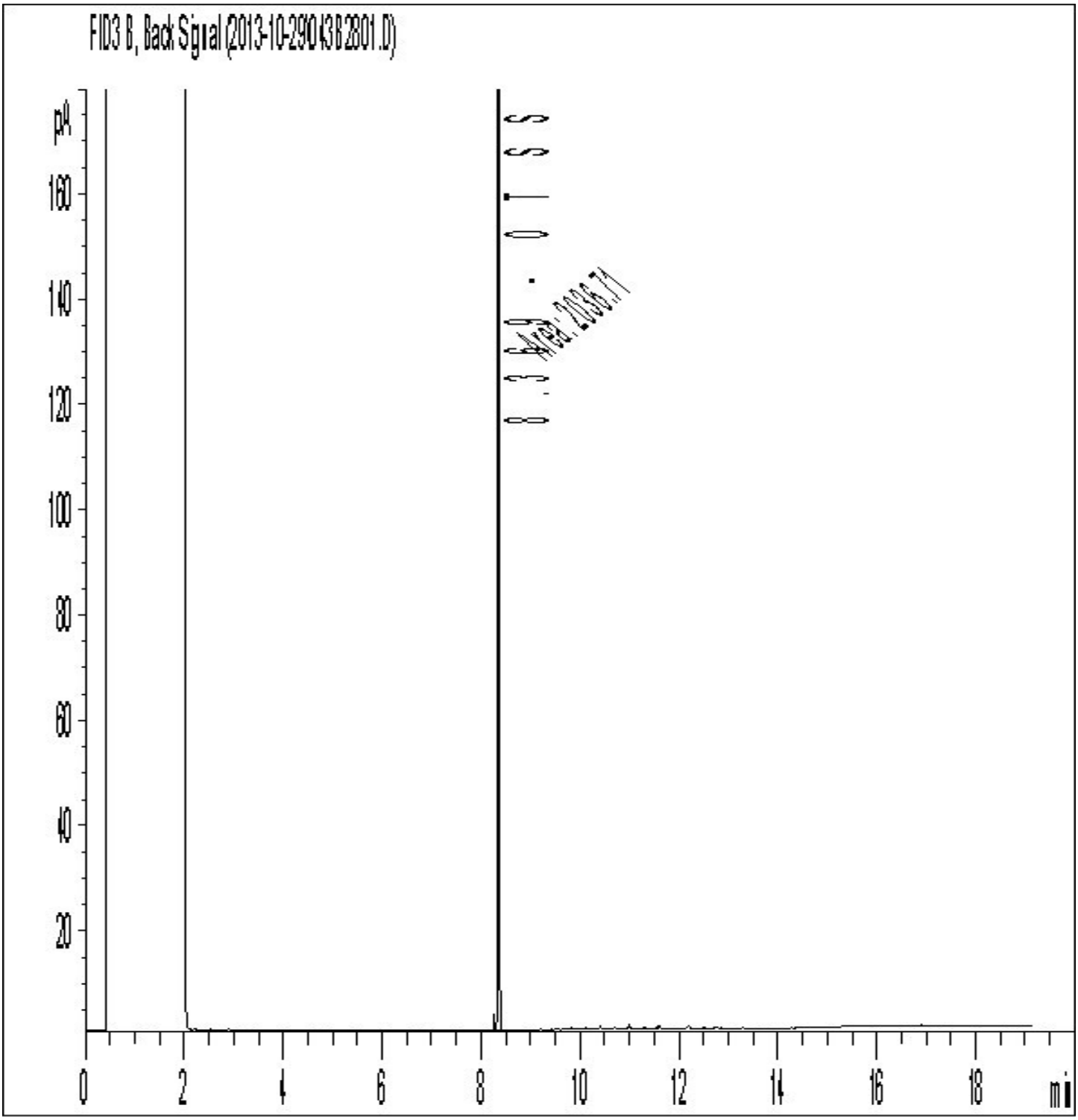
Report Date: 2013/11/04
Maxxam Job #: B3I3877
Maxxam Sample: TQ3962

Stantec Consulting Ltd
Client Project #: 163401060.400.103

Client ID: BH13-209 SS6

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: 400.103
Site Location: CONFEDERATION PARK
Your C.O.C. #: 43681405, 436814-05-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/11/11

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3I9660
Received: 2013/11/05, 10:17

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	2	N/A	2013/11/11	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum (1)	1	N/A	2013/11/08	CAM SOP-00226	EPA 8260
1,3-Dichloropropene Sum (1)	1	N/A	2013/11/11	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	2	2013/11/05	2013/11/06	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/11/06	2013/11/07	OTT SOP-00001	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/11/06	2013/11/09	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	2	2013/11/07	2013/11/08	CAM SOP-00447	EPA 6020
MOISTURE	1	N/A	2013/11/06	CAM SOP-00445	McKeague 2nd ed 1978
MOISTURE	1	N/A	2013/11/08	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	2	2013/11/06	2013/11/07	CAM SOP - 00318	EPA 8270
pH CaCl2 EXTRACT (1)	2	2013/11/08	2013/11/08	CAM SOP-00413	SM 4500H+ B
Volatile Organic Compounds in Soil (1)	2	2013/11/06	2013/11/07	CAM SOP-00226	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

Maxxam Job #: B3I9660
Report Date: 2013/11/11

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CONFEDERATION PARK
Your P.O. #: 16300R-20
Sampler Initials: JU

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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Total cover pages: 2

Maxxam Job #: B3I9660
Report Date: 2013/11/11

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CONFEDERATION PARK
Your P.O. #: 16300R-20
Sampler Initials: JU

RESULTS OF ANALYSES OF SOIL

Maxxam ID		TT4192		TT4193		
Sampling Date		2013/11/04 13:00		2013/11/04 13:20		
	Units	**BH13-205 SS1**	**QC Batch**	**BH13-205 SS3**	**RDL**	**QC Batch**
Inorganics						
Moisture	%	17	3412647	40	0.2	3415948
Available (CaCl2) pH	pH	7.62	3415775	7.37		3415775

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3I9660
Report Date: 2013/11/11

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CONFEDERATION PARK
Your P.O. #: 16300R-20
Sampler Initials: JU

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TT4192	TT4193		
Sampling Date		2013/11/04 13:00	2013/11/04 13:20		
	Units	**BH13-205 SS1**	**BH13-205 SS3**	**RDL**	**QC Batch**
Metals					
Acid Extractable Aluminum (Al)	ug/g	11000	27000	50	3414387
Acid Extractable Antimony (Sb)	ug/g	17	2.7	0.20	3414387
Acid Extractable Arsenic (As)	ug/g	3.2	2.4	1.0	3414387
Acid Extractable Barium (Ba)	ug/g	160	230	0.50	3414387
Acid Extractable Beryllium (Be)	ug/g	0.36	0.82	0.20	3414387
Acid Extractable Cadmium (Cd)	ug/g	0.18	0.22	0.10	3414387
Acid Extractable Calcium (Ca)	ug/g	24000	18000	50	3414387
Acid Extractable Chromium (Cr)	ug/g	36	71	1.0	3414387
Acid Extractable Cobalt (Co)	ug/g	11	13	0.10	3414387
Acid Extractable Copper (Cu)	ug/g	25	26	0.50	3414387
Acid Extractable Iron (Fe)	ug/g	20000	29000	50	3414387
Acid Extractable Lead (Pb)	ug/g	210	35	1.0	3414387
Acid Extractable Magnesium (Mg)	ug/g	8100	11000	50	3414387
Acid Extractable Manganese (Mn)	ug/g	350	460	1.0	3414387
Acid Extractable Molybdenum (Mo)	ug/g	0.57	0.51	0.50	3414387
Acid Extractable Nickel (Ni)	ug/g	23	34	0.50	3414387
Acid Extractable Phosphorus (P)	ug/g	1000	1600	50	3414387
Acid Extractable Potassium (K)	ug/g	3300	4700	200	3414387
Acid Extractable Selenium (Se)	ug/g	ND	ND	0.50	3414387
Acid Extractable Silver (Ag)	ug/g	ND	0.23	0.20	3414387
Acid Extractable Sodium (Na)	ug/g	1500	2600	100	3414387
Acid Extractable Strontium (Sr)	ug/g	62	58	1.0	3414387
Acid Extractable Thallium (Tl)	ug/g	0.21	0.19	0.050	3414387
Acid Extractable Vanadium (V)	ug/g	43	60	5.0	3414387
Acid Extractable Zinc (Zn)	ug/g	93	100	5.0	3414387

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

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Maxxam Job #: B3I9660
Report Date: 2013/11/11

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CONFEDERATION PARK
Your P.O. #: 16300R-20
Sampler Initials: JU

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		TT4192		TT4193		
Sampling Date		2013/11/04 13:00		2013/11/04 13:20		
	Units	**BH13-205 SS1**	**RDL**	**BH13-205 SS3**	**RDL**	**QC Batch**
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/g	0.055	0.0071	ND	0.028	3410802
Polyaromatic Hydrocarbons						
Acenaphthene	ug/g	0.0084	0.0050	ND	0.020	3413883
Acenaphthylene	ug/g	0.054	0.0050	ND	0.020	3413883
Anthracene	ug/g	0.067	0.0050	0.037	0.020	3413883
Benzo(a)anthracene	ug/g	0.32	0.0050	0.030	0.020	3413883
Benzo(a)pyrene	ug/g	0.31	0.0050	0.033	0.020	3413883
Benzo(b/j)fluoranthene	ug/g	0.38	0.0050	0.043	0.020	3413883
Benzo(g,h,i)perylene	ug/g	0.18	0.0050	0.023	0.020	3413883
Benzo(k)fluoranthene	ug/g	0.14	0.0050	ND	0.020	3413883
Chrysene	ug/g	0.29	0.0050	0.041	0.020	3413883
Dibenz(a,h)anthracene	ug/g	0.044	0.0050	ND	0.020	3413883
Fluoranthene	ug/g	0.46	0.0050	0.058	0.020	3413883
Fluorene	ug/g	0.012	0.0050	ND	0.020	3413883
Indeno(1,2,3-cd)pyrene	ug/g	0.19	0.0050	ND	0.020	3413883
1-Methylnaphthalene	ug/g	0.026	0.0050	ND	0.020	3413883
2-Methylnaphthalene	ug/g	0.028	0.0050	0.021	0.020	3413883
Naphthalene	ug/g	0.025	0.0050	0.029	0.020	3413883
Phenanthrene	ug/g	0.23	0.0050	0.070	0.020	3413883
Pyrene	ug/g	0.40	0.0050	0.055	0.020	3413883
Surrogate Recovery (%)						
D10-Anthracene	%	95		96		3413883
D14-Terphenyl (FS)	%	77		76		3413883
D8-Acenaphthylene	%	87		96		3413883

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

Maxxam Job #: B3I9660
Report Date: 2013/11/11

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CONFEDERATION PARK
Your P.O. #: 16300R-20
Sampler Initials: JU

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TT4192	TT4193		
Sampling Date		2013/11/04 13:00	2013/11/04 13:20		
	Units	**BH13-205 SS1**	**BH13-205 SS3**	**RDL**	**QC Batch**
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	0.050	3410973
Volatile Organics					
Acetone (2-Propanone)	ug/g	ND	ND	0.50	3413373
Benzene	ug/g	ND	ND	0.020	3413373
Bromodichloromethane	ug/g	ND	ND	0.050	3413373
Bromoform	ug/g	ND	ND	0.050	3413373
Bromomethane	ug/g	ND	ND	0.050	3413373
Carbon Tetrachloride	ug/g	ND	ND	0.050	3413373
Chlorobenzene	ug/g	ND	ND	0.050	3413373
Chloroform	ug/g	ND	ND	0.050	3413373
Dibromochloromethane	ug/g	ND	ND	0.050	3413373
1,2-Dichlorobenzene	ug/g	ND	ND	0.050	3413373
1,3-Dichlorobenzene	ug/g	ND	ND	0.050	3413373
1,4-Dichlorobenzene	ug/g	ND	ND	0.050	3413373
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	0.050	3413373
1,1-Dichloroethane	ug/g	ND	ND	0.050	3413373
1,2-Dichloroethane	ug/g	ND	ND	0.050	3413373
1,1-Dichloroethylene	ug/g	ND	ND	0.050	3413373
cis-1,2-Dichloroethylene	ug/g	ND	ND	0.050	3413373
trans-1,2-Dichloroethylene	ug/g	ND	ND	0.050	3413373
1,2-Dichloropropane	ug/g	ND	ND	0.050	3413373
cis-1,3-Dichloropropene	ug/g	ND	ND	0.030	3413373
trans-1,3-Dichloropropene	ug/g	ND	ND	0.040	3413373
Ethylbenzene	ug/g	ND	ND	0.020	3413373
Ethylene Dibromide	ug/g	ND	ND	0.050	3413373
Hexane	ug/g	ND	ND	0.050	3413373
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	0.050	3413373
Methyl Isobutyl Ketone	ug/g	ND	ND	0.50	3413373
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	0.50	3413373
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	0.050	3413373
Styrene	ug/g	ND	ND	0.050	3413373
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	0.050	3413373
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	0.050	3413373

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

Maxxam Job #: B3I9660
Report Date: 2013/11/11

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CONFEDERATION PARK
Your P.O. #: 16300R-20
Sampler Initials: JU

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TT4192	TT4193		
Sampling Date		2013/11/04 13:00	2013/11/04 13:20		
	Units	**BH13-205 SS1**	**BH13-205 SS3**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/g	ND	ND	0.050	3413373
Toluene	ug/g	ND	ND	0.020	3413373
1,1,1-Trichloroethane	ug/g	ND	ND	0.050	3413373
1,1,2-Trichloroethane	ug/g	ND	ND	0.050	3413373
Trichloroethylene	ug/g	ND	ND	0.050	3413373
Vinyl Chloride	ug/g	ND	ND	0.020	3413373
p+m-Xylene	ug/g	ND	ND	0.020	3413373
o-Xylene	ug/g	ND	ND	0.020	3413373
Xylene (Total)	ug/g	ND	ND	0.020	3413373
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	0.050	3413373
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	98	99		3413373
D10-o-Xylene	%	104	109		3413373
D4-1,2-Dichloroethane	%	101	102		3413373
D8-Toluene	%	101	100		3413373

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

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Maxxam Job #: B3I9660
Report Date: 2013/11/11

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CONFEDERATION PARK
Your P.O. #: 16300R-20
Sampler Initials: JU

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		TT4192		TT4193		
Sampling Date		2013/11/04 13:00		2013/11/04 13:20		
	Units	**BH13-205 SS1**	**QC Batch**	**BH13-205 SS3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons						
F1 (C6-C10)	ug/g	ND	3411557	ND	10	3411557
F1 (C6-C10) - BTEX	ug/g	ND	3411557	ND	10	3411557
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	ND	3412585	ND	10	3415152
F3 (C16-C34 Hydrocarbons)	ug/g	28	3412585	110	10	3415152
F4 (C34-C50 Hydrocarbons)	ug/g	ND	3412585	180	10	3415152
Reached Baseline at C50	ug/g	YES	3412585	YES		3415152
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	115	3411557	112		3411557
4-Bromofluorobenzene	%	69	3411557	74		3411557
D10-Ethylbenzene	%	89	3411557	88		3411557
D4-1,2-Dichloroethane	%	112	3411557	110		3411557
o-Terphenyl	%	62	3412585	81		3415152

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

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Test Summary

Maxxam ID TT4192 **Collected** 2013/11/04
Sample ID BH13-205 SS1 **Shipped**
Matrix Soil **Received** 2013/11/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3410802	N/A	2013/11/11	Automated Statchk
1,3-Dichloropropene Sum	CALC	3410973	N/A	2013/11/08	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3411557	2013/11/05	2013/11/06	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3412585	2013/11/06	2013/11/07	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3414387	2013/11/07	2013/11/08	John Bowman
MOISTURE	BAL	3412647	N/A	2013/11/06	Lyndsey Hart
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3413883	2013/11/06	2013/11/07	Darryl Tiller
pH CaCl2 EXTRACT		3415775	2013/11/08	2013/11/08	Surinder Rai
Volatile Organic Compounds in Soil	P&T/MS	3413373	2013/11/06	2013/11/07	Rebecca Schultz

Maxxam ID TT4193 **Collected** 2013/11/04
Sample ID BH13-205 SS3 **Shipped**
Matrix Soil **Received** 2013/11/05

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3410802	N/A	2013/11/11	Automated Statchk
1,3-Dichloropropene Sum	CALC	3410973	N/A	2013/11/11	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3411557	2013/11/05	2013/11/06	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3415152	2013/11/06	2013/11/09	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3414387	2013/11/07	2013/11/08	John Bowman
MOISTURE	BAL	3415948	N/A	2013/11/08	Lyndsey Hart
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3413883	2013/11/06	2013/11/07	Darryl Tiller
pH CaCl2 EXTRACT		3415775	2013/11/08	2013/11/08	Surinder Rai
Volatile Organic Compounds in Soil	P&T/MS	3413373	2013/11/06	2013/11/07	Rebecca Schultz

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Package 1	8.0°C

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

GENERAL COMMENTS

Custody seals were present and intact.

Sample TT4193-01: PAH Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted for the dilution and high moisture content.

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Stantec Consulting Ltd
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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3411557	1,4-Difluorobenzene	2013/11/06	107	60 - 140	110	60 - 140	111	%		
3411557	4-Bromofluorobenzene	2013/11/06	72	60 - 140	79	60 - 140	78	%		
3411557	D10-Ethylbenzene	2013/11/06	84	30 - 130	98	30 - 130	111	%		
3411557	D4-1,2-Dichloroethane	2013/11/06	113	60 - 140	109	60 - 140	111	%		
3411557	F1 (C6-C10)	2013/11/06	107	60 - 140	86	80 - 120	ND, RDL=10	ug/g	24.0	50
3411557	F1 (C6-C10) - BTEX	2013/11/06					ND, RDL=10	ug/g	24.0	50
3412585	o-Terphenyl	2013/11/06	62	30 - 130	71	30 - 130	64	%		
3412585	F2 (C10-C16 Hydrocarbons)	2013/11/07	72	50 - 130	82	80 - 120	ND, RDL=10	ug/g	NC	50
3412585	F3 (C16-C34 Hydrocarbons)	2013/11/07	72	50 - 130	82	80 - 120	ND, RDL=10	ug/g	41.3	50
3412585	F4 (C34-C50 Hydrocarbons)	2013/11/07	72	50 - 130	82	80 - 120	ND, RDL=10	ug/g	NC	50
3412647	Moisture	2013/11/06							4.1	50
3413373	4-Bromofluorobenzene	2013/11/07	101	60 - 140	100	60 - 140	98	%		
3413373	D10-o-Xylene	2013/11/07	99	60 - 130	102	60 - 130	98	%		
3413373	D4-1,2-Dichloroethane	2013/11/07	103	60 - 140	96	60 - 140	104	%		
3413373	D8-Toluene	2013/11/07	100	60 - 140	101	60 - 140	99	%		
3413373	Acetone (2-Propanone)	2013/11/07	99	60 - 140	97	60 - 140	ND, RDL=0.50	ug/g	NC	50
3413373	Benzene	2013/11/07	97	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g	NC	50
3413373	Bromodichloromethane	2013/11/07	106	60 - 140	104	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Bromoform	2013/11/07	94	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Bromomethane	2013/11/07	90	60 - 140	91	60 - 140	ND, RDL=0.050	ug/g	NC	50
3413373	Carbon Tetrachloride	2013/11/07	103	60 - 140	104	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Chlorobenzene	2013/11/07	102	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Chloroform	2013/11/07	98	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Dibromochloromethane	2013/11/07	111	60 - 140	111	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	1,2-Dichlorobenzene	2013/11/07	107	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	1,3-Dichlorobenzene	2013/11/07	103	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	1,4-Dichlorobenzene	2013/11/07	103	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Dichlorodifluoromethane (FREON 12)	2013/11/07	79	60 - 140	86	60 - 140	ND, RDL=0.050	ug/g	NC	50
3413373	1,1-Dichloroethane	2013/11/07	98	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	1,2-Dichloroethane	2013/11/07	100	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	1,1-Dichloroethylene	2013/11/07	105	60 - 140	108	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	cis-1,2-Dichloroethylene	2013/11/07	95	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	trans-1,2-Dichloroethylene	2013/11/07	95	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	1,2-Dichloropropane	2013/11/07	103	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	cis-1,3-Dichloropropene	2013/11/07	98	60 - 140	95	60 - 130	ND, RDL=0.030	ug/g	NC	50
3413373	trans-1,3-Dichloropropene	2013/11/07	107	60 - 140	105	60 - 130	ND, RDL=0.040	ug/g	NC	50
3413373	Ethylbenzene	2013/11/07	99	60 - 140	99	60 - 130	ND, RDL=0.020	ug/g	NC	50
3413373	Ethylene Dibromide	2013/11/07	103	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Hexane	2013/11/07	97	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50

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Sampler Initials: JU

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3413373	Methylene Chloride(Dichloromethane)	2013/11/07	100	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Methyl Isobutyl Ketone	2013/11/07	105	60 - 140	103	60 - 130	ND, RDL=0.50	ug/g	NC	50
3413373	Methyl Ethyl Ketone (2-Butanone)	2013/11/07	97	60 - 140	95	60 - 140	ND, RDL=0.50	ug/g	NC	50
3413373	Methyl t-butyl ether (MTBE)	2013/11/07	98	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Styrene	2013/11/07	108	60 - 140	107	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	1,1,1,2-Tetrachloroethane	2013/11/07	109	60 - 140	108	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	1,1,2,2-Tetrachloroethane	2013/11/07	113	60 - 140	109	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Tetrachloroethylene	2013/11/07	102	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Toluene	2013/11/07	97	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g	NC	50
3413373	1,1,1-Trichloroethane	2013/11/07	99	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	1,1,2-Trichloroethane	2013/11/07	101	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Trichloroethylene	2013/11/07	100	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Vinyl Chloride	2013/11/07	83	60 - 140	85	60 - 130	ND, RDL=0.020	ug/g	NC	50
3413373	p+m-Xylene	2013/11/07	101	60 - 140	100	60 - 130	ND, RDL=0.020	ug/g	NC	50
3413373	o-Xylene	2013/11/07	100	60 - 140	98	60 - 130	ND, RDL=0.020	ug/g	NC	50
3413373	Trichlorofluoromethane (FREON 11)	2013/11/07	93	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
3413373	Xylene (Total)	2013/11/07					ND, RDL=0.020	ug/g	NC	50
3413883	D10-Anthracene	2013/11/07	85	50 - 130	85	50 - 130	93	%		
3413883	D14-Terphenyl (FS)	2013/11/07	54	50 - 130	73	50 - 130	74	%		
3413883	D8-Acenaphthylene	2013/11/07	75	50 - 130	71	50 - 130	72	%		
3413883	Acenaphthene	2013/11/07	87	50 - 130	85	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Acenaphthylene	2013/11/07	82	50 - 130	78	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Anthracene	2013/11/07	84	50 - 130	85	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Benzo(a)anthracene	2013/11/07	85	50 - 130	85	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Benzo(a)pyrene	2013/11/07	77	50 - 130	77	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Benzo(b/j)fluoranthene	2013/11/07	82	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Benzo(g,h,i)perylene	2013/11/07	59	50 - 130	63	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Benzo(k)fluoranthene	2013/11/07	80	50 - 130	80	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Chrysene	2013/11/07	92	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Dibenz(a,h)anthracene	2013/11/07	53	50 - 130	50	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Fluoranthene	2013/11/07	84	50 - 130	89	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Fluorene	2013/11/07	79	50 - 130	79	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	Indeno(1,2,3-cd)pyrene	2013/11/07	61	50 - 130	60	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3413883	1-Methylnaphthalene	2013/11/07	81	50 - 130	81	50 - 130	ND, RDL=0.0050	ug/g	8.1	40
3413883	2-Methylnaphthalene	2013/11/07	75	50 - 130	75	50 - 130	ND, RDL=0.0050	ug/g	3.9	40
3413883	Naphthalene	2013/11/07	79	50 - 130	82	50 - 130	ND, RDL=0.0050	ug/g	2.1	40
3413883	Phenanthrene	2013/11/07	80	50 - 130	83	50 - 130	ND, RDL=0.0050	ug/g	4.5	40
3413883	Pyrene	2013/11/07	82	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3414387	Acid Extractable Aluminum (Al)	2013/11/08	NC	75 - 125	107	80 - 120	ND, RDL=50	ug/g		

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Maxxam Job #: B3I9660
Report Date: 2013/11/11

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CONFEDERATION PARK
Your P.O. #: 16300R-20
Sampler Initials: JU

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3414387	Acid Extractable Antimony (Sb)	2013/11/08	102	75 - 125	104	80 - 120	ND, RDL=0.20	ug/g	NC	30
3414387	Acid Extractable Arsenic (As)	2013/11/08	97	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	NC	30
3414387	Acid Extractable Barium (Ba)	2013/11/08	NC	75 - 125	96	80 - 120	ND, RDL=0.50	ug/g	0.5	30
3414387	Acid Extractable Beryllium (Be)	2013/11/08	100	75 - 125	99	80 - 120	ND, RDL=0.20	ug/g	NC	30
3414387	Acid Extractable Cadmium (Cd)	2013/11/08	103	75 - 125	100	80 - 120	ND, RDL=0.10	ug/g	NC	30
3414387	Acid Extractable Calcium (Ca)	2013/11/08	NC	75 - 125	103	80 - 120	ND, RDL=50	ug/g		
3414387	Acid Extractable Chromium (Cr)	2013/11/08	102	75 - 125	101	80 - 120	ND, RDL=1.0	ug/g	2.8	30
3414387	Acid Extractable Cobalt (Co)	2013/11/08	101	75 - 125	102	80 - 120	ND, RDL=0.10	ug/g	4.3	30
3414387	Acid Extractable Copper (Cu)	2013/11/08	96	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	8.6	30
3414387	Acid Extractable Iron (Fe)	2013/11/08	NC	75 - 125	106	80 - 120	ND, RDL=50	ug/g		
3414387	Acid Extractable Lead (Pb)	2013/11/08	99	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	NC	30
3414387	Acid Extractable Magnesium (Mg)	2013/11/08	NC	75 - 125	100	80 - 120	ND, RDL=50	ug/g		
3414387	Acid Extractable Manganese (Mn)	2013/11/08	NC	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g		
3414387	Acid Extractable Molybdenum (Mo)	2013/11/08	103	75 - 125	99	80 - 120	ND, RDL=0.50	ug/g	NC	30
3414387	Acid Extractable Nickel (Ni)	2013/11/08	101	75 - 125	103	80 - 120	ND, RDL=0.50	ug/g	1.7	30
3414387	Acid Extractable Phosphorus (P)	2013/11/08	NC	75 - 125	118	80 - 120	ND, RDL=50	ug/g		
3414387	Acid Extractable Potassium (K)	2013/11/08	NC	75 - 125	101	80 - 120	ND, RDL=200	ug/g		
3414387	Acid Extractable Selenium (Se)	2013/11/08	101	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	NC	30
3414387	Acid Extractable Silver (Ag)	2013/11/08	104	75 - 125	104	80 - 120	ND, RDL=0.20	ug/g	NC	30
3414387	Acid Extractable Sodium (Na)	2013/11/08	103	75 - 125	102	80 - 120	ND, RDL=100	ug/g		
3414387	Acid Extractable Strontium (Sr)	2013/11/08	NC	75 - 125	96	80 - 120	ND, RDL=1.0	ug/g		
3414387	Acid Extractable Thallium (Tl)	2013/11/08	89	75 - 125	90	80 - 120	ND, RDL=0.050	ug/g	NC	30
3414387	Acid Extractable Vanadium (V)	2013/11/08	102	75 - 125	100	80 - 120	ND, RDL=5.0	ug/g	NC	30
3414387	Acid Extractable Zinc (Zn)	2013/11/08	102	75 - 125	101	80 - 120	ND, RDL=5.0	ug/g	NC	30
3415152	o-Terphenyl	2013/11/08	83	30 - 130	87	30 - 130	72	%		
3415152	F2 (C10-C16 Hydrocarbons)	2013/11/08	93	50 - 130	97	80 - 120	ND, RDL=10	ug/g	NC	50
3415152	F3 (C16-C34 Hydrocarbons)	2013/11/08	93	50 - 130	97	80 - 120	ND, RDL=10	ug/g	NC	50
3415152	F4 (C34-C50 Hydrocarbons)	2013/11/08	93	50 - 130	97	80 - 120	ND, RDL=10	ug/g	NC	50
3415948	Moisture	2013/11/08							1.6	50

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
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.

Maxxam Job #: B3I9660
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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 not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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Validation Signature Page

Maxxam Job #: B3I9660

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

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

Yuan Zhou, Analyst II

==========

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 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.maxxamanalytics.com

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-653-6266 Fax:(905) 817-5779 www.maxxam.ca

STANTEC CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:

Company Name: #2267 Stantec Consulting Ltd
Contact Name: Accounts Payable
Address: 1331 Clyde Avenue Suite 400, Ottawa ON K2C 3G4
Phone: (613)722-4420 Fax: (613)738-0721
Email: Stantec.Accounts.Payable.Invoices@Stantec.com

REPORT INFORMATION (if differs from invoice):

Company Name: Stantec Consulting Ltd.
Contact Name: Jill Peters-Dechman
Address: Suite 400, 1331 Clyde Avenue, Ottawa, ON K2C 3G4
Phone: 613-722-4420 Fax: 613-722-2799
Email: jill.peters-dechman@stantec.com, edd@stantec.c

PROJECT INFORMATION:

Quotation #: B31780
Task #: 400.103
Project #: 163401060.400.103
Profit Centre: 1225
Site #: Confederation Park
Sampled By: J. Urban

Laboratory Use Only:

MAXXAM JOB #:
BOTTLE ORDER #: 436814
CHAIN OF CUSTODY #: C#436814-05-01
PROJECT MANAGER: Parnian Baber

Regulation 153 (2011)

- [x] Table 1
- [ ] Table 2
- [ ] Table 3
- [ ] Table ___
- [x] Res/Park
- [x] Ind/Comm
- [ ] Agri/Other
- [ ] Medium/Fine
- [x] Coarse
- [ ] For RSC

Other Regulations

- [ ] CCME
- [ ] Reg. 558
- [ ] MISA
- [ ] PWQO
- [ ] Other ___
- [ ] Sanitary Sewer Bylaw
- [ ] Storm Sewer Bylaw
- Municipality ___

SPECIAL INSTRUCTIONS

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

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

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

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: [x]
(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	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	O'Reg 153 Petroleum Hydrocarbons (Soil)	O'Reg 153 Volatile Organics (Soil)	O'Reg 153 PAHs (Soil)	Acid Extr. Metals (aqua regia) by ICPMS	pH CaCl2 EXTRACT	# of Bottles	Comments
1		BH13-205 SS1	2013/11/04	13:00	Soil	N	N	✓	✓	✓	✓	✓	4	
2		BH13-205 SS3	2013/11/04	13:20	Soil	N	N	✓	✓	✓	✓	✓	4	
3														
4														
5														
6														
7														
8														
9														
10														

5-Nov-13 10:17
Parnian Baber
B319660
CB2 OTT-002

REC'D IN OTTAWA

On ice

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
J. Urban	2013/11/05	10:10	Kelsey Pilon Kelsey Pilon	13/11/05	10:17	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	9, 9, 6	Present	✓	
		Intact	✓	

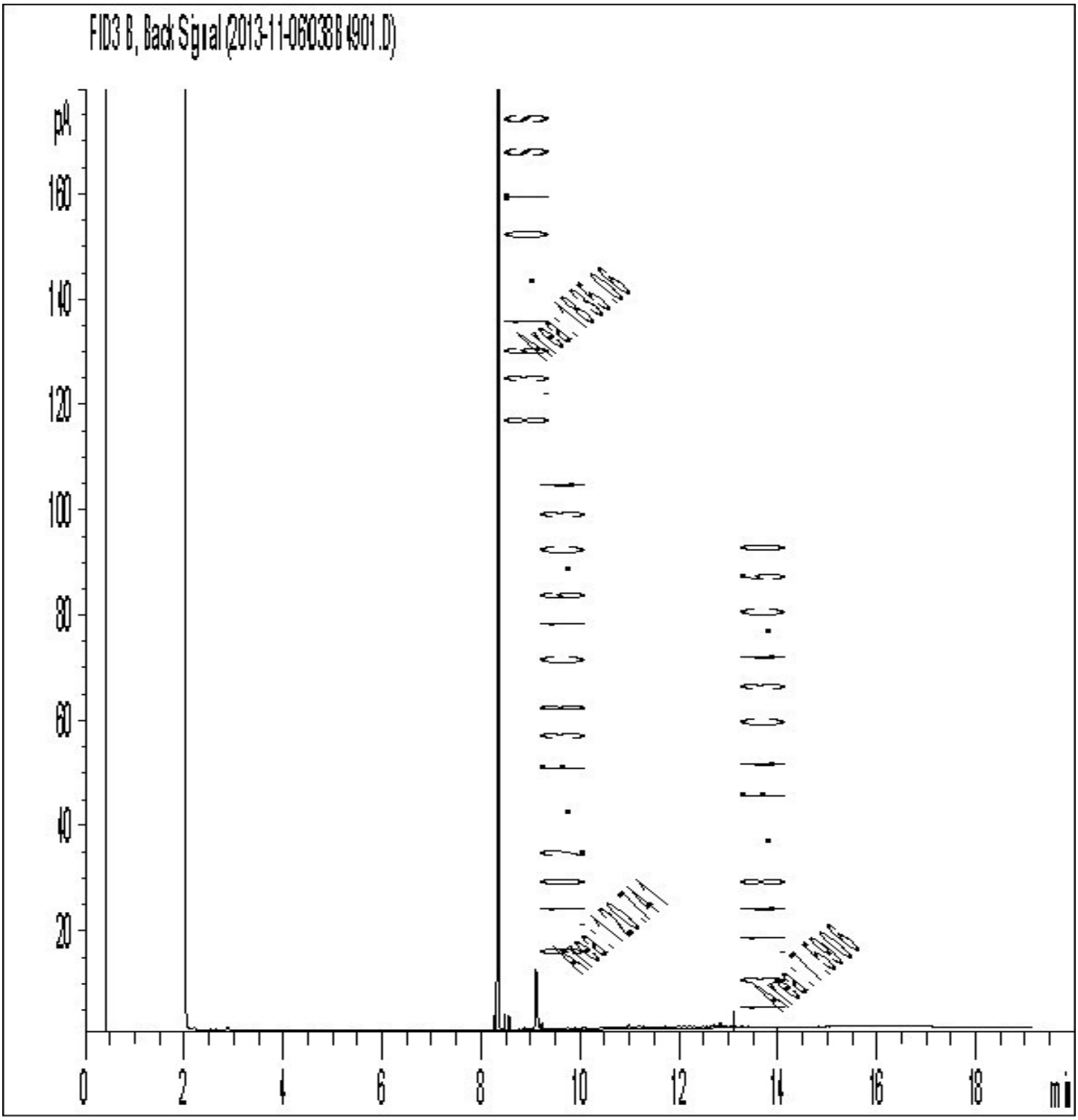
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Maxxam Yellow: Client

Report Date: 2013/11/11
Maxxam Job #: B3I9660
Maxxam Sample: TT4192

Stantec Consulting Ltd
Client Project #: 163401060
Project name: CONFEDERATION PARK
Client ID: BH13-205 SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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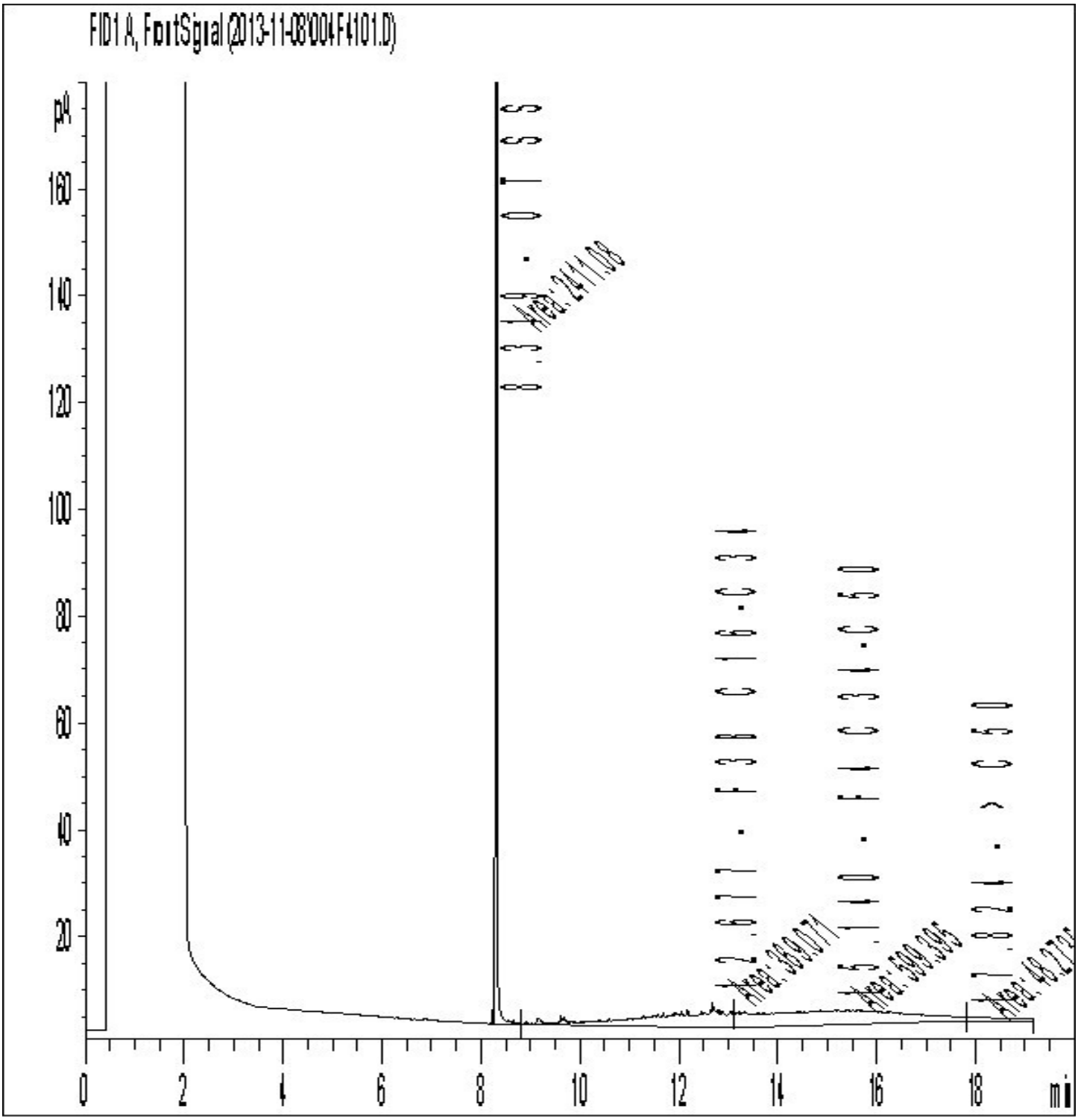
Report Date: 2013/11/11
Maxxam Job #: B3I9660
Maxxam Sample: TT4193

Stantec Consulting Ltd
Client Project #: 163401060
Project name: CONFEDERATION PARK
Client ID: BH13-205 SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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Your P.O. #: 16300R-20
Your Project #: 163401060.400.103
Site Location: STANLEY PARK
Your C.O.C. #: 0022748

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/11/18

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3J3939
Received: 2013/11/11, 12:23

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	1	N/A	2013/11/15	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum (1)	1	N/A	2013/11/15	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2013/11/12	2013/11/12	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/11/12	2013/11/12	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	1	2013/11/13	2013/11/14	CAM SOP-00447	EPA 6020
MOISTURE	1	N/A	2013/11/13	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2013/11/13	2013/11/14	CAM SOP - 00318	EPA 8270
Volatile Organic Compounds in Soil (1)	1	2013/11/13	2013/11/14	CAM SOP-00226	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

Maxxam Job #: B3J3939
Report Date: 2013/11/18

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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Total cover pages: 2

Maxxam Job #: B3J3939
Report Date: 2013/11/18

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

RESULTS OF ANALYSES OF SOIL

Maxxam ID		TV6358		
Sampling Date		2013/11/11 11:30		
	Units	**BH13-10 SS4**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	37	0.2	3419181

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3J3939
Report Date: 2013/11/18

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		TV6358		
Sampling Date		2013/11/11 11:30		
	Units	**BH13-10 SS4**	**RDL**	**QC Batch**
Metals				
Acid Extractable Aluminum (Al)	ug/g	11000	50	3421347
Acid Extractable Antimony (Sb)	ug/g	1.7	0.20	3421347
Acid Extractable Arsenic (As)	ug/g	11	1.0	3421347
Acid Extractable Barium (Ba)	ug/g	380	0.50	3421347
Acid Extractable Beryllium (Be)	ug/g	0.52	0.20	3421347
Acid Extractable Cadmium (Cd)	ug/g	0.67	0.10	3421347
Acid Extractable Calcium (Ca)	ug/g	26000	50	3421347
Acid Extractable Chromium (Cr)	ug/g	40	1.0	3421347
Acid Extractable Cobalt (Co)	ug/g	8.4	0.10	3421347
Acid Extractable Copper (Cu)	ug/g	61	0.50	3421347
Acid Extractable Iron (Fe)	ug/g	23000	50	3421347
Acid Extractable Lead (Pb)	ug/g	470	1.0	3421347
Acid Extractable Magnesium (Mg)	ug/g	4700	50	3421347
Acid Extractable Manganese (Mn)	ug/g	590	1.0	3421347
Acid Extractable Molybdenum (Mo)	ug/g	1.5	0.50	3421347
Acid Extractable Nickel (Ni)	ug/g	20	0.50	3421347
Acid Extractable Phosphorus (P)	ug/g	2700	50	3421347
Acid Extractable Potassium (K)	ug/g	1700	200	3421347
Acid Extractable Selenium (Se)	ug/g	0.56	0.50	3421347
Acid Extractable Silver (Ag)	ug/g	0.62	0.20	3421347
Acid Extractable Sodium (Na)	ug/g	300	100	3421347
Acid Extractable Strontium (Sr)	ug/g	120	1.0	3421347
Acid Extractable Thallium (Tl)	ug/g	0.16	0.050	3421347
Acid Extractable Vanadium (V)	ug/g	30	5.0	3421347
Acid Extractable Zinc (Zn)	ug/g	450	5.0	3421347

RDL = Reportable Detection Limit
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Report Date: 2013/11/18

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		TV6358		
Sampling Date		2013/11/11 11:30		
	Units	**BH13-10 SS4**	**RDL**	**QC Batch**
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	0.050	0.0071	3418203
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	0.058	0.0050	3420707
Acenaphthylene	ug/g	0.51	0.0050	3420707
Anthracene	ug/g	0.67	0.0050	3420707
Benzo(a)anthracene	ug/g	1.7	0.0050	3420707
Benzo(a)pyrene	ug/g	1.2	0.0050	3420707
Benzo(b/j)fluoranthene	ug/g	1.4	0.0050	3420707
Benzo(g,h,i)perylene	ug/g	0.60	0.0050	3420707
Benzo(k)fluoranthene	ug/g	0.50	0.0050	3420707
Chrysene	ug/g	1.5	0.0050	3420707
Dibenz(a,h)anthracene	ug/g	0.17	0.0050	3420707
Fluoranthene	ug/g	3.0	0.0050	3420707
Fluorene	ug/g	0.15	0.0050	3420707
Indeno(1,2,3-cd)pyrene	ug/g	0.61	0.0050	3420707
1-Methylnaphthalene	ug/g	0.024	0.0050	3420707
2-Methylnaphthalene	ug/g	0.026	0.0050	3420707
Naphthalene	ug/g	0.047	0.0050	3420707
Phenanthrene	ug/g	2.3	0.0050	3420707
Pyrene	ug/g	3.5	0.0050	3420707
Surrogate Recovery (%)				
D10-Anthracene	%	86		3420707
D14-Terphenyl (FS)	%	82		3420707
D8-Acenaphthylene	%	79		3420707

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3J3939
Report Date: 2013/11/18

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TV6358		
Sampling Date		2013/11/11 11:30		
	Units	**BH13-10 SS4**	**RDL**	**QC Batch**
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.10	3418538
Volatile Organics				
Acetone (2-Propanone)	ug/g	ND	1.0	3421317
Benzene	ug/g	ND	0.040	3421317
Bromodichloromethane	ug/g	ND	0.10	3421317
Bromoform	ug/g	ND	0.10	3421317
Bromomethane	ug/g	ND	0.10	3421317
Carbon Tetrachloride	ug/g	ND	0.10	3421317
Chlorobenzene	ug/g	ND	0.10	3421317
Chloroform	ug/g	ND	0.10	3421317
Dibromochloromethane	ug/g	ND	0.10	3421317
1,2-Dichlorobenzene	ug/g	ND	0.10	3421317
1,3-Dichlorobenzene	ug/g	ND	0.10	3421317
1,4-Dichlorobenzene	ug/g	ND	0.10	3421317
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.10	3421317
1,1-Dichloroethane	ug/g	ND	0.10	3421317
1,2-Dichloroethane	ug/g	ND	0.10	3421317
1,1-Dichloroethylene	ug/g	ND	0.10	3421317
cis-1,2-Dichloroethylene	ug/g	ND	0.10	3421317
trans-1,2-Dichloroethylene	ug/g	ND	0.10	3421317
1,2-Dichloropropane	ug/g	ND	0.10	3421317
cis-1,3-Dichloropropene	ug/g	ND	0.060	3421317
trans-1,3-Dichloropropene	ug/g	ND	0.080	3421317
Ethylbenzene	ug/g	ND	0.040	3421317
Ethylene Dibromide	ug/g	ND	0.10	3421317
Hexane	ug/g	ND	0.10	3421317
Methylene Chloride(Dichloromethane)	ug/g	ND	0.10	3421317
Methyl Isobutyl Ketone	ug/g	ND	1.0	3421317
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	1.0	3421317
Methyl t-butyl ether (MTBE)	ug/g	ND	0.10	3421317
Styrene	ug/g	ND	0.10	3421317
1,1,1,2-Tetrachloroethane	ug/g	ND	0.10	3421317
1,1,2,2-Tetrachloroethane	ug/g	ND	0.10	3421317

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

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Maxxam Job #: B3J3939
Report Date: 2013/11/18

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		TV6358		
Sampling Date		2013/11/11 11:30		
	Units	**BH13-10 SS4**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/g	ND	0.10	3421317
Toluene	ug/g	ND	0.040	3421317
1,1,1-Trichloroethane	ug/g	ND	0.10	3421317
1,1,2-Trichloroethane	ug/g	ND	0.10	3421317
Trichloroethylene	ug/g	0.35	0.10	3421317
Vinyl Chloride	ug/g	ND	0.040	3421317
p+m-Xylene	ug/g	ND	0.040	3421317
o-Xylene	ug/g	ND	0.040	3421317
Xylene (Total)	ug/g	ND	0.040	3421317
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.10	3421317
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	86		3421317
D10-o-Xylene	%	104		3421317
D4-1,2-Dichloroethane	%	119		3421317
D8-Toluene	%	105		3421317

ND = Not detected
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QC Batch = Quality Control Batch

Maxxam Job #: B3J3939
Report Date: 2013/11/18

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		TV6358		
Sampling Date		2013/11/11 11:30		
	Units	**BH13-10 SS4**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/g	ND	10	3418095
F1 (C6-C10) - BTEX	ug/g	ND	10	3418095
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	ND	10	3419176
F3 (C16-C34 Hydrocarbons)	ug/g	160	10	3419176
F4 (C34-C50 Hydrocarbons)	ug/g	68	10	3419176
Reached Baseline at C50	ug/g	YES		3419176
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	105		3418095
4-Bromofluorobenzene	%	82		3418095
D10-Ethylbenzene	%	102		3418095
D4-1,2-Dichloroethane	%	111		3418095
o-Terphenyl	%	92		3419176

ND = Not detected
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Maxxam Job #: B3J3939
Report Date: 2013/11/18

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

Test Summary

Maxxam ID TV6358 **Collected** 2013/11/11
Sample ID BH13-10 SS4 **Shipped**
Matrix Soil **Received** 2013/11/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3418203	N/A	2013/11/15	Automated Statchk
1,3-Dichloropropene Sum	CALC	3418538	N/A	2013/11/15	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3418095	2013/11/12	2013/11/12	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3419176	2013/11/12	2013/11/12	Lyndsey Hart
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3421347	2013/11/13	2013/11/14	John Bowman
MOISTURE	BAL	3419181	N/A	2013/11/13	Lyndsey Hart
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3420707	2013/11/13	2013/11/14	Darryl Tiller
Volatile Organic Compounds in Soil	P&T/MS	3421317	2013/11/13	2013/11/14	Rebecca Schultz

Maxxam ID TV6358 Dup **Collected** 2013/11/11
Sample ID BH13-10 SS4 **Shipped**
Matrix Soil **Received** 2013/11/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Soil	P&T/MS	3421317	2013/11/13	2013/11/14	Rebecca Schultz

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Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

Package 1	8.0°C

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

GENERAL COMMENTS

Custody seals were present and intact.

Sample TV6358-01: VOC Analysis: Detection limits were raised due to high moisture content.

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Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3418095	1,4-Difluorobenzene	2013/11/12	105	60 - 140	105	60 - 140	104	%		
3418095	4-Bromofluorobenzene	2013/11/12	76	60 - 140	72	60 - 140	75	%		
3418095	D10-Ethylbenzene	2013/11/12	105	30 - 130	111	30 - 130	109	%		
3418095	D4-1,2-Dichloroethane	2013/11/12	109	60 - 140	110	60 - 140	111	%		
3418095	F1 (C6-C10)	2013/11/12	90	60 - 140	94	80 - 120	ND, RDL=10	ug/g	NC	50
3418095	F1 (C6-C10) - BTEX	2013/11/12					ND, RDL=10	ug/g	NC	50
3419176	o-Terphenyl	2013/11/12	86	30 - 130	88	30 - 130	95	%		
3419176	F2 (C10-C16 Hydrocarbons)	2013/11/12	80	50 - 130	88	80 - 120	ND, RDL=10	ug/g	NC	50
3419176	F3 (C16-C34 Hydrocarbons)	2013/11/12	80	50 - 130	88	80 - 120	ND, RDL=10	ug/g	NC	50
3419176	F4 (C34-C50 Hydrocarbons)	2013/11/12	80	50 - 130	88	80 - 120	ND, RDL=10	ug/g	NC	50
3419181	Moisture	2013/11/13							5.5	50
3420707	D10-Anthracene	2013/11/13	84	50 - 130	91	50 - 130	94	%		
3420707	D14-Terphenyl (FS)	2013/11/13	79	50 - 130	81	50 - 130	80	%		
3420707	D8-Acenaphthylene	2013/11/13	74	50 - 130	82	50 - 130	79	%		
3420707	Acenaphthene	2013/11/13	86	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3420707	Acenaphthylene	2013/11/13	82	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3420707	Anthracene	2013/11/13	88	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3420707	Benzo(a)anthracene	2013/11/13	90	50 - 130	89	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3420707	Benzo(a)pyrene	2013/11/13	84	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	3.2	40
3420707	Benzo(b/j)fluoranthene	2013/11/13	83	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	1.1	40
3420707	Benzo(g,h,i)perylene	2013/11/13	80	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	2.8	40
3420707	Benzo(k)fluoranthene	2013/11/13	86	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3420707	Chrysene	2013/11/13	91	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	1.6	40
3420707	Dibenz(a,h)anthracene	2013/11/13	80	50 - 130	81	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3420707	Fluoranthene	2013/11/13	89	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	5.5	40
3420707	Fluorene	2013/11/13	89	50 - 130	92	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3420707	Indeno(1,2,3-cd)pyrene	2013/11/13	81	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	7.2	40
3420707	1-Methylnaphthalene	2013/11/13	78	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	0.6	40
3420707	2-Methylnaphthalene	2013/11/13	74	50 - 130	83	50 - 130	ND, RDL=0.0050	ug/g	0.5	40
3420707	Naphthalene	2013/11/13	78	50 - 130	89	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3420707	Phenanthrene	2013/11/13	86	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	6.0	40
3420707	Pyrene	2013/11/13	89	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	1.3	40
3421317	4-Bromofluorobenzene	2013/11/14	89	60 - 140	89	60 - 140	93	%		
3421317	D10-o-Xylene	2013/11/14	99	60 - 130	85	60 - 130	89	%		
3421317	D4-1,2-Dichloroethane	2013/11/14	119	60 - 140	113	60 - 140	101	%		
3421317	D8-Toluene	2013/11/14	105	60 - 140	105	60 - 140	100	%		
3421317	Acetone (2-Propanone)	2013/11/14	109	60 - 140	106	60 - 140	ND, RDL=0.50	ug/g	NC	50
3421317	Benzene	2013/11/14	96	60 - 140	95	60 - 130	ND, RDL=0.020	ug/g	NC	50
3421317	Bromodichloromethane	2013/11/14	106	60 - 140	105	60 - 130	ND, RDL=0.050	ug/g	NC	50

Maxxam Job #: B3J3939
Report Date: 2013/11/18

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3421317	Bromoform	2013/11/14	78	60 - 140	82	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Bromomethane	2013/11/14	80	60 - 140	78	60 - 140	ND, RDL=0.050	ug/g	NC	50
3421317	Carbon Tetrachloride	2013/11/14	102	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Chlorobenzene	2013/11/14	97	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Chloroform	2013/11/14	100	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Dibromochloromethane	2013/11/14	101	60 - 140	105	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	1,2-Dichlorobenzene	2013/11/14	102	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	1,3-Dichlorobenzene	2013/11/14	95	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	1,4-Dichlorobenzene	2013/11/14	95	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Dichlorodifluoromethane (FREON 12)	2013/11/14	74	60 - 140	72	60 - 140	ND, RDL=0.050	ug/g	NC	50
3421317	1,1-Dichloroethane	2013/11/14	104	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	1,2-Dichloroethane	2013/11/14	110	60 - 140	105	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	1,1-Dichloroethylene	2013/11/14	116	60 - 140	113	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	cis-1,2-Dichloroethylene	2013/11/14	93	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	trans-1,2-Dichloroethylene	2013/11/14	94	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	1,2-Dichloropropane	2013/11/14	102	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	cis-1,3-Dichloropropene	2013/11/14	93	60 - 140	96	60 - 130	ND, RDL=0.030	ug/g	NC	50
3421317	trans-1,3-Dichloropropene	2013/11/14	106	60 - 140	110	60 - 130	ND, RDL=0.040	ug/g	NC	50
3421317	Ethylbenzene	2013/11/14	97	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g	NC	50
3421317	Ethylene Dibromide	2013/11/14	100	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Hexane	2013/11/14	92	60 - 140	104	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Methylene Chloride(Dichloromethane)	2013/11/14	97	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Methyl Isobutyl Ketone	2013/11/14	109	60 - 140	105	60 - 130	ND, RDL=0.50	ug/g	NC	50
3421317	Methyl Ethyl Ketone (2-Butanone)	2013/11/14	104	60 - 140	100	60 - 140	ND, RDL=0.50	ug/g	NC	50
3421317	Methyl t-butyl ether (MTBE)	2013/11/14	97	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Styrene	2013/11/14	95	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	1,1,1,2-Tetrachloroethane	2013/11/14	106	60 - 140	108	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	1,1,2,2-Tetrachloroethane	2013/11/14	101	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Tetrachloroethylene	2013/11/14	88	60 - 140	91	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Toluene	2013/11/14	97	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g	NC	50
3421317	1,1,1-Trichloroethane	2013/11/14	102	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	1,1,2-Trichloroethane	2013/11/14	98	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Trichloroethylene	2013/11/14	90	60 - 140	91	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Vinyl Chloride	2013/11/14	74	60 - 140	72	60 - 130	ND, RDL=0.020	ug/g	NC	50
3421317	p+m-Xylene	2013/11/14	100	60 - 140	99	60 - 130	ND, RDL=0.020	ug/g	NC	50
3421317	o-Xylene	2013/11/14	96	60 - 140	95	60 - 130	ND, RDL=0.020	ug/g	NC	50
3421317	Trichlorofluoromethane (FREON 11)	2013/11/14	99	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
3421317	Xylene (Total)	2013/11/14					ND, RDL=0.020	ug/g	NC	50
3421347	Acid Extractable Aluminum (Al)	2013/11/14	NC	75 - 125	103	80 - 120	ND, RDL=50	ug/g		

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.maxxamanalytics.com

Maxxam Job #: B3J3939
Report Date: 2013/11/18

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

QUALITY ASSURANCE REPORT

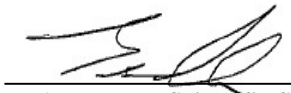
			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3421347	Acid Extractable Antimony (Sb)	2013/11/14	90	75 - 125	102	80 - 120	ND, RDL=0.20	ug/g	3.9	30
3421347	Acid Extractable Arsenic (As)	2013/11/14	92	75 - 125	98	80 - 120	ND, RDL=1.0	ug/g	11.9	30
3421347	Acid Extractable Barium (Ba)	2013/11/14	NC	75 - 125	97	80 - 120	ND, RDL=0.50	ug/g	14.4	30
3421347	Acid Extractable Beryllium (Be)	2013/11/14	96	75 - 125	99	80 - 120	ND, RDL=0.20	ug/g	NC	30
3421347	Acid Extractable Cadmium (Cd)	2013/11/14	96	75 - 125	102	80 - 120	ND, RDL=0.10	ug/g	NC	30
3421347	Acid Extractable Calcium (Ca)	2013/11/14	NC	75 - 125	100	80 - 120	ND, RDL=50	ug/g		
3421347	Acid Extractable Chromium (Cr)	2013/11/14	93	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	12.3	30
3421347	Acid Extractable Cobalt (Co)	2013/11/14	94	75 - 125	100	80 - 120	ND, RDL=0.10	ug/g	3.2	30
3421347	Acid Extractable Copper (Cu)	2013/11/14	NC	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	4.3	30
3421347	Acid Extractable Iron (Fe)	2013/11/14	NC	75 - 125	105	80 - 120	ND, RDL=50	ug/g		
3421347	Acid Extractable Lead (Pb)	2013/11/14	NC	75 - 125	103	80 - 120	ND, RDL=1.0	ug/g	7.8	30
3421347	Acid Extractable Magnesium (Mg)	2013/11/14	NC	75 - 125	101	80 - 120	ND, RDL=50	ug/g		
3421347	Acid Extractable Manganese (Mn)	2013/11/14	NC	75 - 125	98	80 - 120	ND, RDL=1.0	ug/g		
3421347	Acid Extractable Molybdenum (Mo)	2013/11/14	98	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	NC	30
3421347	Acid Extractable Nickel (Ni)	2013/11/14	93	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	8.9	30
3421347	Acid Extractable Phosphorus (P)	2013/11/14	NC	75 - 125	106	80 - 120	ND, RDL=50	ug/g		
3421347	Acid Extractable Potassium (K)	2013/11/14	NC	75 - 125	98	80 - 120	ND, RDL=200	ug/g		
3421347	Acid Extractable Selenium (Se)	2013/11/14	96	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	NC	30
3421347	Acid Extractable Silver (Ag)	2013/11/14	97	75 - 125	102	80 - 120	ND, RDL=0.20	ug/g	NC	30
3421347	Acid Extractable Sodium (Na)	2013/11/14	96	75 - 125	100	80 - 120	ND, RDL=100	ug/g		
3421347	Acid Extractable Strontium (Sr)	2013/11/14	NC	75 - 125	97	80 - 120	ND, RDL=1.0	ug/g		
3421347	Acid Extractable Thallium (Tl)	2013/11/14	81	75 - 125	91	80 - 120	ND, RDL=0.050	ug/g	NC	30
3421347	Acid Extractable Vanadium (V)	2013/11/14	95	75 - 125	97	80 - 120	ND, RDL=5.0	ug/g	NC	30
3421347	Acid Extractable Zinc (Zn)	2013/11/14	NC	75 - 125	105	80 - 120	ND, RDL=5.0	ug/g	9.2	30

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

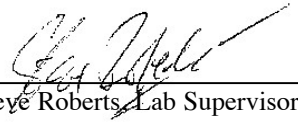
Maxxam Job #: B3J3939

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

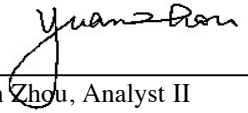


Brad Newman, Scientific Specialist

Paul Rubinato, Analyst, Maxxam Analytics



Steve Roberts, Lab Supervisor, Ottawa



Yuan Zhou, Analyst II

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

Maxxam 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.maxxamanalytics.com

Maxxam 6740 Campobello Road, Mississauga, ON L5N 2L8
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CHAIN OF CUSTODY RECORD

22748 Page 1 of 1

INVOICE INFORMATION	REPORT INFORMATION (if differs from invoice)	PROJECT INFORMATION	MAXXAM JOB NUMBER
Company Name: Stantec	Company Name:	Quotation #: CSST	
Contact Name: Jill Peters-Dechman	Contact Name:	P.O. #:	CHAIN OF CUSTODY #
Address: 1331 Clyde Ave	Address:	Project #: 163401060.400.10	00
Phone: (613) 722 4420 Fax:	Phone: Fax:	Site Location: Stanley Park	
Email: jill.peters-dechman@stantec	Email:	Site #:	
		Sampled By: A. Waldrick	

Note: For MOE Regulated Drinking Water samples, please use the Drinking Water CofC.

Regulation 153 (2011)			Other Regulations		
[X] Table 1	[ ] Res/Park	[ ] Med/Fine	[ ] CCME	[ ] Sanitary Sewer Bylaw	
[ ] Table 2	[ ] Ind/Comm	[ ] Coarse	[ ] Reg. 558	[ ] Storm Sewer Bylaw	
[ ] Table 3	[ ] Agri/Other	For RSC	[ ] MISA	Municipality:	
[ ] Table ____		[ ] Yes	[ ] PWQO		
		[ ] No	[ ] Other (specify):		

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 (Please be specific)

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	MOE Regulated Drinking Water? (Y / N)	Metals Field Filtered? (Y / N)	~~BTEX~~ PHC F1/BTEX PHC F2-F4 VOC metals PAH	# of Cont.	COMMENTS / TAT COMMENTS
1	BH 13-10 SS4	Nov 11 2013	11:30	Soil	N	N	X X X X X		
2									
3									
4									
5									
6									
7									
8									
9									
10									

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT: [X]
(5-7 working days for most tests)

Rush TAT:
Samples must be received by 3pm to guarantee your TAT

Rush Confirmation #: PN ____

[ ] 1 day [ ] 2 days [ ] 3 days

Date Req'd: ____

TATs for certain tests are > 5 days. Please contact your Project Manager for details.

11-Nov-13 12:23
Parnian Baber
B3J3939
CB2 OTT-002

REC'D IN OTTAWA

on ice

*RELINQUISHED BY (Signature/Print)	Date (YYYY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date (YYYY/MM/DD)	Time:
A. Waldrick / A. Waldrick	2013/11/11	12:20	C. Berjeran	2013/11/11	12:23

#JARS USED AND NOT SUBMITTED

Laboratory Use Only

Custody Seal	Yes	No
Present	X	
Intact	X	

Temperature (°C) on Receipt: 7/8/9

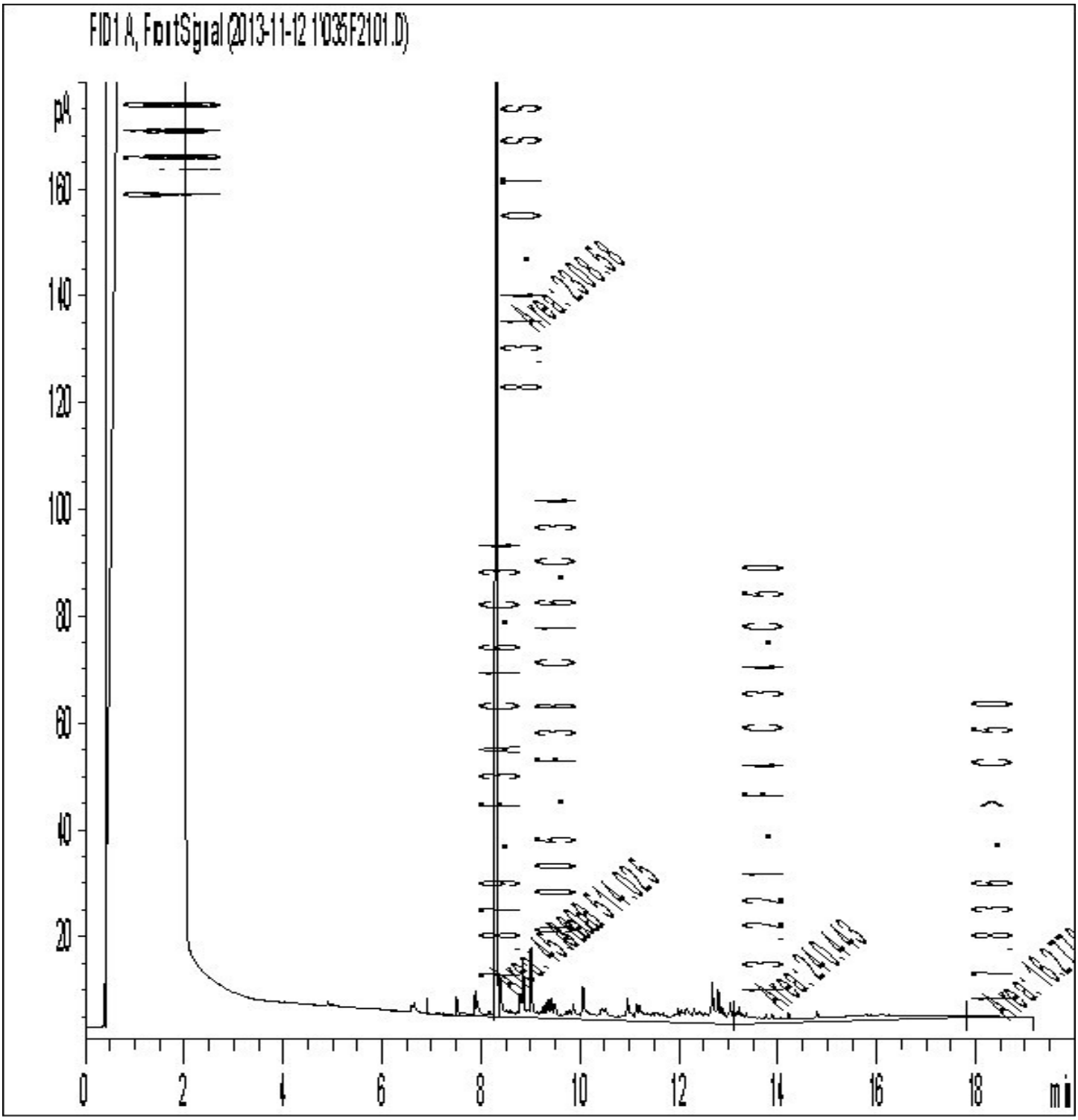
*MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

COC-1004 (06/12) - ENV. ENG. Maxxam Analytics International Corporation o/a Maxxam Analytics White: Maxxam Yellow: Mail Pink: Client

Report Date: 2013/11/18
Maxxam Job #: B3J3939
Maxxam Sample: TV6358

Stantec Consulting Ltd
Client Project #: 163401060.400.103
Project name: STANLEY PARK
Client ID: BH13-10 SS4

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 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.maxxamanalytics.com

Your P.O. #: 16300R-20
Your Project #: 163401060
Site Location: SUPREME COURT
Your C.O.C. #: 43681402, 436814-02-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/11/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3K3867
Received: 2013/11/26, 09:50

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	2	N/A	2013/11/28	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum	2	N/A	2013/11/28	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	2	2013/11/26	2013/11/27	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	2013/11/26	2013/11/29	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	2	2013/11/27	2013/11/27	OTT SOP-00003	EPA 6020
MOISTURE	2	N/A	2013/11/27	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	2	2013/11/27	2013/11/28	CAM SOP - 00318	EPA 8270
pH CaCl2 EXTRACT (1)	2	2013/11/29	2013/11/29	CAM SOP-00413	SM 4500H+ B
Volatile Organic Compounds in Soil	2	2013/11/26	2013/11/27	OTT SOP-00005	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed

Your P.O. #: 16300R-20
Your Project #: 163401060
Site Location: SUPREME COURT
Your C.O.C. #: 43681402, 436814-02-01

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/11/29

CERTIFICATE OF ANALYSIS

or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* 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.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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.

Total cover pages: 2

Maxxam Job #: B3K3867
Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: SUPREME COURT
Your P.O. #: 16300R-20
Sampler Initials: JU

O'REG 153 PAHS (SOIL)

Maxxam ID		UA9979	UA9980		
Sampling Date		2013/11/25 15:15	2013/11/25 15:30		
COC Number		436814-02-01	436814-02-01		
	Units	**BH13-229 SS3**	**BH13-229 SS4**	**RDL**	**QC Batch**
Calculated Parameters					
Methylnaphthalene, 2-(1-)	ug/g	0.18	0.079	0.0071	3435798
Polyaromatic Hydrocarbons					
Acenaphthene	ug/g	0.075	0.068	0.0050	3438169
Acenaphthylene	ug/g	0.011	0.012	0.0050	3438169
Anthracene	ug/g	0.15	0.14	0.0050	3438169
Benzo(a)anthracene	ug/g	0.23	0.23	0.0050	3438169
Benzo(a)pyrene	ug/g	0.20	0.20	0.0050	3438169
Benzo(b/j)fluoranthene	ug/g	0.27	0.28	0.0050	3438169
Benzo(g,h,i)perylene	ug/g	0.13	0.13	0.0050	3438169
Benzo(k)fluoranthene	ug/g	0.11	0.11	0.0050	3438169
Chrysene	ug/g	0.21	0.21	0.0050	3438169
Dibenz(a,h)anthracene	ug/g	0.032	0.031	0.0050	3438169
Fluoranthene	ug/g	0.60	0.64	0.0050	3438169
Fluorene	ug/g	0.080	0.062	0.0050	3438169
Indeno(1,2,3-cd)pyrene	ug/g	0.12	0.12	0.0050	3438169
1-Methylnaphthalene	ug/g	0.080	0.035	0.0050	3438169
2-Methylnaphthalene	ug/g	0.10	0.044	0.0050	3438169
Naphthalene	ug/g	0.055	0.031	0.0050	3438169
Phenanthrene	ug/g	0.57	0.55	0.0050	3438169
Pyrene	ug/g	0.48	0.50	0.0050	3438169
Surrogate Recovery (%)					
D10-Anthracene	%	99	95		3438169
D14-Terphenyl (FS)	%	108	109		3438169
D8-Acenaphthylene	%	80	80		3438169

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3K3867
Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: SUPREME COURT
Your P.O. #: 16300R-20
Sampler Initials: JU

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		UA9979	UA9980		
Sampling Date		2013/11/25 15:15	2013/11/25 15:30		
COC Number		436814-02-01	436814-02-01		
	Units	**BH13-229 SS3**	**BH13-229 SS4**	**RDL**	**QC Batch**
Inorganics					
Moisture	%	11	8.1	0.2	3436254
BTEX & F1 Hydrocarbons					
F1 (C6-C10)	ug/g	ND	ND	10	3435957
F1 (C6-C10) - BTEX	ug/g	ND	ND	10	3435957
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	19	15	10	3436202
F3 (C16-C34 Hydrocarbons)	ug/g	41	16	10	3436202
F4 (C34-C50 Hydrocarbons)	ug/g	22	11	10	3436202
Reached Baseline at C50	ug/g	Yes	Yes		3436202
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	109	108		3435957
4-Bromofluorobenzene	%	81	84		3435957
D10-Ethylbenzene	%	110	98		3435957
D4-1,2-Dichloroethane	%	98	100		3435957
o-Terphenyl	%	104	102		3436202

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

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Maxxam Job #: B3K3867
Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: SUPREME COURT
Your P.O. #: 16300R-20
Sampler Initials: JU

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		UA9979	UA9980		
Sampling Date		2013/11/25 15:15	2013/11/25 15:30		
COC Number		436814-02-01	436814-02-01		
	Units	**BH13-229 SS3**	**BH13-229 SS4**	**RDL**	**QC Batch**
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	0.071	3435981
Volatile Organics					
Acetone (2-Propanone)	ug/g	ND	ND	0.50	3436307
Benzene	ug/g	ND	ND	0.020	3436307
Bromodichloromethane	ug/g	ND	ND	0.050	3436307
Bromoform	ug/g	ND	ND	0.050	3436307
Bromomethane	ug/g	ND	ND	0.050	3436307
Carbon Tetrachloride	ug/g	ND	ND	0.050	3436307
Chlorobenzene	ug/g	ND	ND	0.050	3436307
Chloroform	ug/g	ND	ND	0.050	3436307
Dibromochloromethane	ug/g	ND	ND	0.050	3436307
1,2-Dichlorobenzene	ug/g	ND	ND	0.050	3436307
1,3-Dichlorobenzene	ug/g	ND	ND	0.050	3436307
1,4-Dichlorobenzene	ug/g	ND	ND	0.050	3436307
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	0.050	3436307
1,1-Dichloroethane	ug/g	ND	ND	0.050	3436307
1,2-Dichloroethane	ug/g	ND	ND	0.050	3436307
1,1-Dichloroethylene	ug/g	ND	ND	0.050	3436307
cis-1,2-Dichloroethylene	ug/g	ND	ND	0.050	3436307
trans-1,2-Dichloroethylene	ug/g	ND	ND	0.050	3436307
1,2-Dichloropropane	ug/g	ND	ND	0.050	3436307
cis-1,3-Dichloropropene	ug/g	ND	ND	0.050	3436307
trans-1,3-Dichloropropene	ug/g	ND	ND	0.050	3436307
Ethylbenzene	ug/g	ND	ND	0.020	3436307
Ethylene Dibromide	ug/g	ND	ND	0.050	3436307
Hexane	ug/g	ND	ND	0.050	3436307
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	0.050	3436307
Methyl Isobutyl Ketone	ug/g	ND	ND	0.50	3436307
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	0.50	3436307
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	0.050	3436307
Styrene	ug/g	ND	ND	0.050	3436307

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

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Maxxam Job #: B3K3867
Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: SUPREME COURT
Your P.O. #: 16300R-20
Sampler Initials: JU

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		UA9979	UA9980		
Sampling Date		2013/11/25 15:15	2013/11/25 15:30		
COC Number		436814-02-01	436814-02-01		
	Units	**BH13-229 SS3**	**BH13-229 SS4**	**RDL**	**QC Batch**
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	0.050	3436307
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	0.050	3436307
Tetrachloroethylene	ug/g	ND	ND	0.050	3436307
Toluene	ug/g	ND	ND	0.020	3436307
1,1,1-Trichloroethane	ug/g	ND	ND	0.050	3436307
1,1,2-Trichloroethane	ug/g	ND	ND	0.050	3436307
Trichloroethylene	ug/g	ND	ND	0.050	3436307
Vinyl Chloride	ug/g	ND	ND	0.020	3436307
p+m-Xylene	ug/g	ND	ND	0.020	3436307
o-Xylene	ug/g	ND	ND	0.020	3436307
Xylene (Total)	ug/g	ND	ND	0.020	3436307
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	0.050	3436307
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	97	98		3436307
D4-1,2-Dichloroethane	%	119	118		3436307
D8-Toluene	%	89	88		3436307

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

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Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: SUPREME COURT
Your P.O. #: 16300R-20
Sampler Initials: JU

RESULTS OF ANALYSES OF SOIL

Maxxam ID		UA9979	UA9980	
Sampling Date		2013/11/25 15:15	2013/11/25 15:30	
COC Number		436814-02-01	436814-02-01	
	Units	**BH13-229 SS3**	**BH13-229 SS4**	**QC Batch**
Inorganics				
Available (CaCl2) pH	pH	7.87	10.4	3440730

QC Batch = Quality Control Batch

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Report Date: 2013/11/29

Stantec Consulting Ltd
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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		UA9979	UA9979	UA9980		
Sampling Date		2013/11/25 15:15	2013/11/25 15:15	2013/11/25 15:30		
COC Number		436814-02-01	436814-02-01	436814-02-01		
	Units	**BH13-229 SS3**	**BH13-229 SS3 Lab-Dup**	**BH13-229 SS4**	**RDL**	**QC Batch**
Metals						
Acid Extractable Aluminum (Al)	ug/g	4000	3800	4600	50	3437486
Acid Extractable Antimony (Sb)	ug/g	ND	ND	ND	0.2	3437486
Acid Extractable Arsenic (As)	ug/g	1	1	2	1	3437486
Acid Extractable Barium (Ba)	ug/g	43	42	57	0.5	3437486
Acid Extractable Beryllium (Be)	ug/g	ND	ND	0.3	0.2	3437486
Acid Extractable Cadmium (Cd)	ug/g	ND	ND	ND	0.1	3437486
Acid Extractable Calcium (Ca)	ug/g	85000	82000	91000	50	3437486
Acid Extractable Chromium (Cr)	ug/g	12	12	10	1	3437486
Acid Extractable Cobalt (Co)	ug/g	3.2	3.0	3.8	0.1	3437486
Acid Extractable Copper (Cu)	ug/g	6.4	6.2	7.4	0.5	3437486
Acid Extractable Iron (Fe)	ug/g	8100	7900	9700	50	3437486
Acid Extractable Lead (Pb)	ug/g	11	10	36	1	3437486
Acid Extractable Magnesium (Mg)	ug/g	3700	3600	6300	50	3437486
Acid Extractable Manganese (Mn)	ug/g	160	160	200	1	3437486
Acid Extractable Molybdenum (Mo)	ug/g	0.5	ND	0.5	0.5	3437486
Acid Extractable Nickel (Ni)	ug/g	7.0	6.8	7.2	0.5	3437486
Acid Extractable Phosphorus (P)	ug/g	720	640	930	50	3437486
Acid Extractable Potassium (K)	ug/g	1100	1000	1300	200	3437486
Acid Extractable Selenium (Se)	ug/g	ND	ND	ND	0.5	3437486
Acid Extractable Silver (Ag)	ug/g	ND	ND	1.7	0.2	3437486
Acid Extractable Sodium (Na)	ug/g	230	230	290	100	3437486
Acid Extractable Strontium (Sr)	ug/g	94	88	200	1	3437486
Acid Extractable Thallium (Tl)	ug/g	0.06	ND	0.12	0.05	3437486
Acid Extractable Vanadium (V)	ug/g	20	20	27	5	3437486
Acid Extractable Zinc (Zn)	ug/g	19	19	30	5	3437486

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RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3K3867
Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: SUPREME COURT
Your P.O. #: 16300R-20
Sampler Initials: JU

Test Summary

Maxxam ID UA9979 **Collected** 2013/11/25
Sample ID BH13-229 SS3 **Shipped**
Matrix Soil **Received** 2013/11/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3435798	N/A	2013/11/28	Automated Statchk
1,3-Dichloropropene Sum	CALC	3435981	N/A	2013/11/28	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3435957	2013/11/26	2013/11/27	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3436202	2013/11/26	2013/11/29	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3437486	2013/11/27	2013/11/27	Raigamage Perera
MOISTURE	BAL	3436254	N/A	2013/11/27	Habiba Essak
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3438169	2013/11/27	2013/11/28	Darryl Tiller
pH CaCl2 EXTRACT		3440730	2013/11/29	2013/11/29	Neil Dassanayake
Volatile Organic Compounds in Soil	P&T/MS	3436307	2013/11/26	2013/11/27	Paul Rubinato

Maxxam ID UA9979 Dup **Collected** 2013/11/25
Sample ID BH13-229 SS3 **Shipped**
Matrix Soil **Received** 2013/11/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3437486	2013/11/27	2013/11/27	Raigamage Perera

Maxxam ID UA9980 **Collected** 2013/11/25
Sample ID BH13-229 SS4 **Shipped**
Matrix Soil **Received** 2013/11/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3435798	N/A	2013/11/28	Automated Statchk
1,3-Dichloropropene Sum	CALC	3435981	N/A	2013/11/28	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3435957	2013/11/26	2013/11/27	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3436202	2013/11/26	2013/11/29	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3437486	2013/11/27	2013/11/27	Raigamage Perera
MOISTURE	BAL	3436254	N/A	2013/11/27	Habiba Essak
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3438169	2013/11/27	2013/11/28	Darryl Tiller
pH CaCl2 EXTRACT		3440730	2013/11/29	2013/11/29	Neil Dassanayake
Volatile Organic Compounds in Soil	P&T/MS	3436307	2013/11/26	2013/11/27	Paul Rubinato

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Maxxam Job #: B3K3867
Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: SUPREME COURT
Your P.O. #: 16300R-20
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Package 1	0.7°C

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

GENERAL COMMENTS

Custody seals were present and intact.

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location: SUPREME COURT

Quality Assurance Report

Maxxam Job Number: TB3K3867

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3435957	STE	Matrix Spike	1,4-Difluorobenzene	2013/11/27		106	%	60 - 140
			4-Bromofluorobenzene	2013/11/27		80	%	60 - 140
			D10-Ethylbenzene	2013/11/27		116	%	30 - 130
			D4-1,2-Dichloroethane	2013/11/27		104	%	60 - 140
			F1 (C6-C10)	2013/11/27		112	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2013/11/27		110	%	60 - 140
			4-Bromofluorobenzene	2013/11/27		89	%	60 - 140
			D10-Ethylbenzene	2013/11/27		108	%	30 - 130
			D4-1,2-Dichloroethane	2013/11/27		100	%	60 - 140
			F1 (C6-C10)	2013/11/27		108	%	80 - 120
		Method Blank	1,4-Difluorobenzene	2013/11/27		104	%	60 - 140
			4-Bromofluorobenzene	2013/11/27		82	%	60 - 140
			D10-Ethylbenzene	2013/11/27		98	%	30 - 130
			D4-1,2-Dichloroethane	2013/11/27		104	%	60 - 140
			F1 (C6-C10)	2013/11/27	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2013/11/27	ND, RDL=10		ug/g	
		RPD	F1 (C6-C10)	2013/11/27	NC		%	50
			F1 (C6-C10) - BTEX	2013/11/27	NC		%	50
3436202	HES	Matrix Spike	o-Terphenyl	2013/11/28		100	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/11/28		102	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2013/11/28		102	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2013/11/28		102	%	50 - 130
		Spiked Blank	o-Terphenyl	2013/11/28		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/11/28		96	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2013/11/28		96	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2013/11/28		96	%	80 - 120
		Method Blank	o-Terphenyl	2013/11/28		105	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/11/28	ND, RDL=10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2013/11/28	ND, RDL=10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2013/11/28	ND, RDL=10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2013/11/28	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2013/11/28	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2013/11/28	NC		%	50
3436254	HES	RPD	Moisture	2013/11/27	2.5		%	50
3436307	PRB	Matrix Spike	4-Bromofluorobenzene	2013/11/27		107	%	60 - 140
			D4-1,2-Dichloroethane	2013/11/27		106	%	60 - 140
			D8-Toluene	2013/11/27		106	%	60 - 140
			Acetone (2-Propanone)	2013/11/27		101	%	60 - 140
			Benzene	2013/11/27		114	%	60 - 140
			Bromodichloromethane	2013/11/27		125	%	60 - 140
			Bromoform	2013/11/27		128	%	60 - 140
			Bromomethane	2013/11/27		70	%	60 - 140
			Carbon Tetrachloride	2013/11/27		122	%	60 - 140
			Chlorobenzene	2013/11/27		116	%	60 - 140
			Chloroform	2013/11/27		122	%	60 - 140
			Dibromochloromethane	2013/11/27		130	%	60 - 140
			1,2-Dichlorobenzene	2013/11/27		112	%	60 - 140
			1,3-Dichlorobenzene	2013/11/27		109	%	60 - 140
			1,4-Dichlorobenzene	2013/11/27		112	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2013/11/27		101	%	60 - 140
			1,1-Dichloroethane	2013/11/27		137	%	60 - 140
			1,2-Dichloroethane	2013/11/27		122	%	60 - 140
			1,1-Dichloroethylene	2013/11/27		120	%	60 - 140
			cis-1,2-Dichloroethylene	2013/11/27		113	%	60 - 140
			trans-1,2-Dichloroethylene	2013/11/27		118	%	60 - 140

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location: SUPREME COURT

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3867

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3436307	PRB	Matrix Spike	1,2-Dichloropropane	2013/11/27		117	%	60 - 140
			cis-1,3-Dichloropropene	2013/11/27		117	%	60 - 140
			trans-1,3-Dichloropropene	2013/11/27		121	%	60 - 140
			Ethylbenzene	2013/11/27		114	%	60 - 140
			Ethylene Dibromide	2013/11/27		126	%	60 - 140
			Hexane	2013/11/27		128	%	60 - 140
			Methylene Chloride(Dichloromethane)	2013/11/27		121	%	60 - 140
			Methyl Isobutyl Ketone	2013/11/27		95	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2013/11/27		116	%	60 - 140
			Methyl t-butyl ether (MTBE)	2013/11/27		134	%	60 - 140
			Styrene	2013/11/27		132	%	60 - 140
			1,1,1,2-Tetrachloroethane	2013/11/27		110	%	60 - 140
			1,1,2,2-Tetrachloroethane	2013/11/27		124	%	60 - 140
			Tetrachloroethylene	2013/11/27		120	%	60 - 140
			Toluene	2013/11/27		117	%	60 - 140
			1,1,1-Trichloroethane	2013/11/27		122	%	60 - 140
			1,1,2-Trichloroethane	2013/11/27		125	%	60 - 140
			Trichloroethylene	2013/11/27		117	%	60 - 140
			Vinyl Chloride	2013/11/27		100	%	60 - 140
			p+m-Xylene	2013/11/27		118	%	60 - 140
			o-Xylene	2013/11/27		104	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2013/11/27		110	%	60 - 140
		Spiked Blank	4-Bromofluorobenzene	2013/11/27		108	%	60 - 140
			D4-1,2-Dichloroethane	2013/11/27		107	%	60 - 140
			D8-Toluene	2013/11/27		107	%	60 - 140
			Acetone (2-Propanone)	2013/11/27		112	%	60 - 140
			Benzene	2013/11/27		111	%	60 - 140
			Bromodichloromethane	2013/11/27		123	%	60 - 140
			Bromoform	2013/11/27		133	%	60 - 140
			Bromomethane	2013/11/27		113	%	60 - 140
			Carbon Tetrachloride	2013/11/27		117	%	60 - 140
			Chlorobenzene	2013/11/27		118	%	60 - 140
			Chloroform	2013/11/27		120	%	60 - 140
			Dibromochloromethane	2013/11/27		131	%	60 - 140
			1,2-Dichlorobenzene	2013/11/27		113	%	60 - 140
			1,3-Dichlorobenzene	2013/11/27		109	%	60 - 140
			1,4-Dichlorobenzene	2013/11/27		110	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2013/11/27		107	%	60 - 140
			1,1-Dichloroethane	2013/11/27		122	%	60 - 140
			1,2-Dichloroethane	2013/11/27		122	%	60 - 140
			1,1-Dichloroethylene	2013/11/27		115	%	60 - 140
			cis-1,2-Dichloroethylene	2013/11/27		117	%	60 - 140
			trans-1,2-Dichloroethylene	2013/11/27		123	%	60 - 140
			1,2-Dichloropropane	2013/11/27		115	%	60 - 140
			cis-1,3-Dichloropropene	2013/11/27		118	%	60 - 140
			trans-1,3-Dichloropropene	2013/11/27		118	%	60 - 140
			Ethylbenzene	2013/11/27		115	%	60 - 140
			Ethylene Dibromide	2013/11/27		128	%	60 - 140
			Hexane	2013/11/27		132	%	60 - 140
			Methylene Chloride(Dichloromethane)	2013/11/27		122	%	60 - 140
			Methyl Isobutyl Ketone	2013/11/27		122	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2013/11/27		133	%	60 - 140
			Methyl t-butyl ether (MTBE)	2013/11/27		129	%	60 - 140
			Styrene	2013/11/27		135	%	60 - 140
			1,1,1,2-Tetrachloroethane	2013/11/27		131	%	60 - 140

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Site Location: SUPREME COURT

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3867

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3436307	PRB	Spiked Blank	1,1,2,2-Tetrachloroethane	2013/11/27		124	%	60 - 140
			Tetrachloroethylene	2013/11/27		122	%	60 - 140
			Toluene	2013/11/27		118	%	60 - 140
			1,1,1-Trichloroethane	2013/11/27		118	%	60 - 140
			1,1,2-Trichloroethane	2013/11/27		130	%	60 - 140
			Trichloroethylene	2013/11/27		117	%	60 - 140
			Vinyl Chloride	2013/11/27		112	%	60 - 140
			p+m-Xylene	2013/11/27		117	%	60 - 140
			o-Xylene	2013/11/27		107	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2013/11/27		110	%	60 - 140
		Method Blank	4-Bromofluorobenzene	2013/11/27		95	%	60 - 140
			D4-1,2-Dichloroethane	2013/11/27		121	%	60 - 140
			D8-Toluene	2013/11/27		91	%	60 - 140
			Acetone (2-Propanone)	2013/11/27	ND, RDL=0.50		ug/g	
			Benzene	2013/11/27	ND, RDL=0.020		ug/g	
			Bromodichloromethane	2013/11/27	ND, RDL=0.050		ug/g	
			Bromoform	2013/11/27	ND, RDL=0.050		ug/g	
			Bromomethane	2013/11/27	ND, RDL=0.050		ug/g	
			Carbon Tetrachloride	2013/11/27	ND, RDL=0.050		ug/g	
			Chlorobenzene	2013/11/27	ND, RDL=0.050		ug/g	
			Chloroform	2013/11/27	ND, RDL=0.050		ug/g	
			Dibromochloromethane	2013/11/27	ND, RDL=0.050		ug/g	
			1,2-Dichlorobenzene	2013/11/27	ND, RDL=0.050		ug/g	
			1,3-Dichlorobenzene	2013/11/27	ND, RDL=0.050		ug/g	
			1,4-Dichlorobenzene	2013/11/27	ND, RDL=0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2013/11/27	ND, RDL=0.050		ug/g	
			1,1-Dichloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			1,2-Dichloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			1,1-Dichloroethylene	2013/11/27	ND, RDL=0.050		ug/g	
			cis-1,2-Dichloroethylene	2013/11/27	ND, RDL=0.050		ug/g	
			trans-1,2-Dichloroethylene	2013/11/27	ND, RDL=0.050		ug/g	
			1,2-Dichloropropane	2013/11/27	ND, RDL=0.050		ug/g	
			cis-1,3-Dichloropropene	2013/11/27	ND, RDL=0.050		ug/g	
			trans-1,3-Dichloropropene	2013/11/27	ND, RDL=0.050		ug/g	
			Ethylbenzene	2013/11/27	ND, RDL=0.020		ug/g	
			Ethylene Dibromide	2013/11/27	ND, RDL=0.050		ug/g	
			Hexane	2013/11/27	ND, RDL=0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2013/11/27	ND, RDL=0.050		ug/g	
			Methyl Isobutyl Ketone	2013/11/27	ND, RDL=0.50		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2013/11/27	ND, RDL=0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2013/11/27	ND, RDL=0.050		ug/g	
			Styrene	2013/11/27	ND, RDL=0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			Tetrachloroethylene	2013/11/27	ND, RDL=0.050		ug/g	
			Toluene	2013/11/27	ND, RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			1,1,2-Trichloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			Trichloroethylene	2013/11/27	ND, RDL=0.050		ug/g	
			Vinyl Chloride	2013/11/27	ND, RDL=0.020		ug/g	
			p+m-Xylene	2013/11/27	ND, RDL=0.020		ug/g	
			o-Xylene	2013/11/27	ND, RDL=0.020		ug/g	
			Xylene (Total)	2013/11/27	ND, RDL=0.020		ug/g	
			Trichlorofluoromethane (FREON 11)	2013/11/27	ND, RDL=0.050		ug/g	
		RPD	Acetone (2-Propanone)	2013/11/27	NC		%	50

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location: SUPREME COURT

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3867

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3436307	PRB	RPD	Benzene	2013/11/27	NC		%	50
			Bromodichloromethane	2013/11/27	NC		%	50
			Bromoform	2013/11/27	NC		%	50
			Bromomethane	2013/11/27	NC		%	50
			Carbon Tetrachloride	2013/11/27	NC		%	50
			Chlorobenzene	2013/11/27	NC		%	50
			Chloroform	2013/11/27	NC		%	50
			Dibromochloromethane	2013/11/27	NC		%	50
			1,2-Dichlorobenzene	2013/11/27	NC		%	50
			1,3-Dichlorobenzene	2013/11/27	NC		%	50
			1,4-Dichlorobenzene	2013/11/27	NC		%	50
			Dichlorodifluoromethane (FREON 12)	2013/11/27	NC		%	50
			1,1-Dichloroethane	2013/11/27	NC		%	50
			1,2-Dichloroethane	2013/11/27	NC		%	50
			1,1-Dichloroethylene	2013/11/27	NC		%	50
			cis-1,2-Dichloroethylene	2013/11/27	NC		%	50
			trans-1,2-Dichloroethylene	2013/11/27	NC		%	50
			1,2-Dichloropropane	2013/11/27	NC		%	50
			cis-1,3-Dichloropropene	2013/11/27	NC		%	50
			trans-1,3-Dichloropropene	2013/11/27	NC		%	50
			Ethylbenzene	2013/11/27	NC		%	50
			Ethylene Dibromide	2013/11/27	NC		%	50
			Hexane	2013/11/27	NC		%	50
			Methylene Chloride(Dichloromethane)	2013/11/27	NC		%	50
			Methyl Isobutyl Ketone	2013/11/27	NC		%	50
			Methyl Ethyl Ketone (2-Butanone)	2013/11/27	NC		%	50
			Methyl t-butyl ether (MTBE)	2013/11/27	NC		%	50
			Styrene	2013/11/27	NC		%	50
			1,1,1,2-Tetrachloroethane	2013/11/27	NC		%	50
			1,1,2,2-Tetrachloroethane	2013/11/27	NC		%	50
			Tetrachloroethylene	2013/11/27	NC		%	50
			Toluene	2013/11/27	NC		%	50
			1,1,1-Trichloroethane	2013/11/27	NC		%	50
			1,1,2-Trichloroethane	2013/11/27	NC		%	50
			Trichloroethylene	2013/11/27	NC		%	50
			Vinyl Chloride	2013/11/27	NC		%	50
			p+m-Xylene	2013/11/27	4.5		%	50
			o-Xylene	2013/11/27	NC		%	50
			Xylene (Total)	2013/11/27	6.6		%	50
			Trichlorofluoromethane (FREON 11)	2013/11/27	NC		%	50
3437486	RAI	Matrix Spike [UA9979-01]						
			Acid Extractable Aluminum (Al)	2013/11/27		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2013/11/27		99	%	75 - 125
			Acid Extractable Arsenic (As)	2013/11/27		100	%	75 - 125
			Acid Extractable Barium (Ba)	2013/11/27		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2013/11/27		110	%	75 - 125
			Acid Extractable Cadmium (Cd)	2013/11/27		105	%	75 - 125
			Acid Extractable Calcium (Ca)	2013/11/27		NC	%	75 - 125
			Acid Extractable Chromium (Cr)	2013/11/27		100	%	75 - 125
			Acid Extractable Cobalt (Co)	2013/11/27		97	%	75 - 125
			Acid Extractable Copper (Cu)	2013/11/27		94	%	75 - 125
			Acid Extractable Iron (Fe)	2013/11/27		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2013/11/27		108	%	75 - 125
			Acid Extractable Magnesium (Mg)	2013/11/27		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2013/11/27		NC	%	75 - 125

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Attention: Jill Peters-Dechman
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Site Location: SUPREME COURT

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3867

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3437486	RAI	Matrix Spike [UA9979-01]	Acid Extractable Molybdenum (Mo)	2013/11/27		104	%	75 - 125
			Acid Extractable Nickel (Ni)	2013/11/27		98	%	75 - 125
			Acid Extractable Phosphorus (P)	2013/11/27		NC	%	75 - 125
			Acid Extractable Potassium (K)	2013/11/27		NC	%	75 - 125
			Acid Extractable Selenium (Se)	2013/11/27		102	%	75 - 125
			Acid Extractable Silver (Ag)	2013/11/27		104	%	75 - 125
			Acid Extractable Sodium (Na)	2013/11/27		102	%	75 - 125
			Acid Extractable Strontium (Sr)	2013/11/27		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2013/11/27		100	%	75 - 125
			Acid Extractable Vanadium (V)	2013/11/27		102	%	75 - 125
			Acid Extractable Zinc (Zn)	2013/11/27		101	%	75 - 125
		Spiked Blank	Acid Extractable Aluminum (Al)	2013/11/27		105	%	80 - 120
			Acid Extractable Antimony (Sb)	2013/11/27		97	%	80 - 120
			Acid Extractable Arsenic (As)	2013/11/27		99	%	80 - 120
			Acid Extractable Barium (Ba)	2013/11/27		100	%	80 - 120
			Acid Extractable Beryllium (Be)	2013/11/27		109	%	80 - 120
			Acid Extractable Cadmium (Cd)	2013/11/27		103	%	80 - 120
			Acid Extractable Calcium (Ca)	2013/11/27		101	%	80 - 120
			Acid Extractable Chromium (Cr)	2013/11/27		100	%	80 - 120
			Acid Extractable Cobalt (Co)	2013/11/27		98	%	80 - 120
			Acid Extractable Copper (Cu)	2013/11/27		98	%	80 - 120
			Acid Extractable Iron (Fe)	2013/11/27		110	%	80 - 120
			Acid Extractable Lead (Pb)	2013/11/27		103	%	80 - 120
			Acid Extractable Magnesium (Mg)	2013/11/27		100	%	80 - 120
			Acid Extractable Manganese (Mn)	2013/11/27		101	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2013/11/27		99	%	80 - 120
			Acid Extractable Nickel (Ni)	2013/11/27		99	%	80 - 120
			Acid Extractable Phosphorus (P)	2013/11/27		87	%	80 - 120
			Acid Extractable Potassium (K)	2013/11/27		100	%	80 - 120
			Acid Extractable Selenium (Se)	2013/11/27		105	%	80 - 120
			Acid Extractable Silver (Ag)	2013/11/27		100	%	80 - 120
			Acid Extractable Sodium (Na)	2013/11/27		100	%	80 - 120
			Acid Extractable Strontium (Sr)	2013/11/27		97	%	80 - 120
			Acid Extractable Thallium (Tl)	2013/11/27		102	%	80 - 120
			Acid Extractable Vanadium (V)	2013/11/27		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2013/11/27		99	%	80 - 120
		Method Blank	Acid Extractable Aluminum (Al)	2013/11/27	ND, RDL=50		ug/g	
			Acid Extractable Antimony (Sb)	2013/11/27	ND, RDL=0.2		ug/g	
			Acid Extractable Arsenic (As)	2013/11/27	ND, RDL=1		ug/g	
			Acid Extractable Barium (Ba)	2013/11/27	ND, RDL=0.5		ug/g	
			Acid Extractable Beryllium (Be)	2013/11/27	ND, RDL=0.2		ug/g	
			Acid Extractable Cadmium (Cd)	2013/11/27	ND, RDL=0.1		ug/g	
			Acid Extractable Calcium (Ca)	2013/11/27	ND, RDL=50		ug/g	
			Acid Extractable Chromium (Cr)	2013/11/27	ND, RDL=1		ug/g	
			Acid Extractable Cobalt (Co)	2013/11/27	ND, RDL=0.1		ug/g	
			Acid Extractable Copper (Cu)	2013/11/27	ND, RDL=0.5		ug/g	
			Acid Extractable Iron (Fe)	2013/11/27	ND, RDL=50		ug/g	
			Acid Extractable Lead (Pb)	2013/11/27	ND, RDL=1		ug/g	
			Acid Extractable Magnesium (Mg)	2013/11/27	ND, RDL=50		ug/g	
			Acid Extractable Manganese (Mn)	2013/11/27	ND, RDL=1		ug/g	
			Acid Extractable Molybdenum (Mo)	2013/11/27	ND, RDL=0.5		ug/g	
			Acid Extractable Nickel (Ni)	2013/11/27	ND, RDL=0.5		ug/g	
			Acid Extractable Phosphorus (P)	2013/11/27	ND, RDL=50		ug/g	
			Acid Extractable Potassium (K)	2013/11/27	ND, RDL=200		ug/g	

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Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3867

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3437486	RAI	Method Blank	Acid Extractable Selenium (Se)	2013/11/27	ND, RDL=0.5		ug/g	
			Acid Extractable Silver (Ag)	2013/11/27	ND, RDL=0.2		ug/g	
			Acid Extractable Sodium (Na)	2013/11/27	ND, RDL=100		ug/g	
			Acid Extractable Strontium (Sr)	2013/11/27	ND, RDL=1		ug/g	
			Acid Extractable Thallium (Tl)	2013/11/27	ND, RDL=0.05		ug/g	
			Acid Extractable Vanadium (V)	2013/11/27	ND, RDL=5		ug/g	
			Acid Extractable Zinc (Zn)	2013/11/27	ND, RDL=5		ug/g	
		RPD [UA9979-01]	Acid Extractable Aluminum (Al)	2013/11/27	3.3		%	35
			Acid Extractable Antimony (Sb)	2013/11/27	NC		%	35
			Acid Extractable Arsenic (As)	2013/11/27	NC		%	35
			Acid Extractable Barium (Ba)	2013/11/27	2.1		%	35
			Acid Extractable Beryllium (Be)	2013/11/27	NC		%	35
			Acid Extractable Cadmium (Cd)	2013/11/27	NC		%	35
			Acid Extractable Calcium (Ca)	2013/11/27	3.4		%	35
			Acid Extractable Chromium (Cr)	2013/11/27	3.4		%	35
			Acid Extractable Cobalt (Co)	2013/11/27	6.4		%	35
			Acid Extractable Copper (Cu)	2013/11/27	3.0		%	35
			Acid Extractable Iron (Fe)	2013/11/27	2.4		%	35
			Acid Extractable Lead (Pb)	2013/11/27	12.3		%	35
			Acid Extractable Magnesium (Mg)	2013/11/27	4.8		%	35
			Acid Extractable Manganese (Mn)	2013/11/27	5.1		%	35
			Acid Extractable Molybdenum (Mo)	2013/11/27	NC		%	35
			Acid Extractable Nickel (Ni)	2013/11/27	2.0		%	35
			Acid Extractable Phosphorus (P)	2013/11/27	12.4		%	35
			Acid Extractable Potassium (K)	2013/11/27	4.8		%	35
			Acid Extractable Selenium (Se)	2013/11/27	NC		%	35
			Acid Extractable Silver (Ag)	2013/11/27	NC		%	35
			Acid Extractable Sodium (Na)	2013/11/27	NC		%	35
			Acid Extractable Strontium (Sr)	2013/11/27	6.1		%	35
			Acid Extractable Thallium (Tl)	2013/11/27	NC		%	35
			Acid Extractable Vanadium (V)	2013/11/27	NC		%	35
			Acid Extractable Zinc (Zn)	2013/11/27	NC		%	35
3438169	DTI	Matrix Spike	D10-Anthracene	2013/11/28		88	%	50 - 130
			D14-Terphenyl (FS)	2013/11/28		99	%	50 - 130
			D8-Acenaphthylene	2013/11/28		65	%	50 - 130
			Acenaphthene	2013/11/28		93	%	50 - 130
			Acenaphthylene	2013/11/28		71	%	50 - 130
			Anthracene	2013/11/28		82	%	50 - 130
			Benzo(a)anthracene	2013/11/28		78	%	50 - 130
			Benzo(a)pyrene	2013/11/28		82	%	50 - 130
			Benzo(b/j)fluoranthene	2013/11/28		101	%	50 - 130
			Benzo(g,h,i)perylene	2013/11/28		98	%	50 - 130
			Benzo(k)fluoranthene	2013/11/28		101	%	50 - 130
			Chrysene	2013/11/28		88	%	50 - 130
			Dibenz(a,h)anthracene	2013/11/28		103	%	50 - 130
			Fluoranthene	2013/11/28		89	%	50 - 130
			Fluorene	2013/11/28		79	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/11/28		88	%	50 - 130
			1-Methylnaphthalene	2013/11/28		81	%	50 - 130
			2-Methylnaphthalene	2013/11/28		76	%	50 - 130
			Naphthalene	2013/11/28		78	%	50 - 130
			Phenanthrene	2013/11/28		87	%	50 - 130
			Pyrene	2013/11/28		90	%	50 - 130
		Spiked Blank	D10-Anthracene	2013/11/27		91	%	50 - 130
			D14-Terphenyl (FS)	2013/11/27		102	%	50 - 130

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location: SUPREME COURT

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3867

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3438169	DTI	Spiked Blank	D8-Acenaphthylene	2013/11/27		64	%	50 - 130
			Acenaphthene	2013/11/27		82	%	50 - 130
			Acenaphthylene	2013/11/27		69	%	50 - 130
			Anthracene	2013/11/27		86	%	50 - 130
			Benzo(a)anthracene	2013/11/27		79	%	50 - 130
			Benzo(a)pyrene	2013/11/27		83	%	50 - 130
			Benzo(b/j)fluoranthene	2013/11/27		100	%	50 - 130
			Benzo(g,h,i)perylene	2013/11/27		100	%	50 - 130
			Benzo(k)fluoranthene	2013/11/27		110	%	50 - 130
			Chrysene	2013/11/27		90	%	50 - 130
			Dibenz(a,h)anthracene	2013/11/27		102	%	50 - 130
			Fluoranthene	2013/11/27		88	%	50 - 130
			Fluorene	2013/11/27		80	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/11/27		90	%	50 - 130
			1-Methylnaphthalene	2013/11/27		83	%	50 - 130
			2-Methylnaphthalene	2013/11/27		79	%	50 - 130
			Naphthalene	2013/11/27		83	%	50 - 130
			Phenanthrene	2013/11/27		86	%	50 - 130
			Pyrene	2013/11/27		89	%	50 - 130
		Method Blank	D10-Anthracene	2013/11/27		98	%	50 - 130
			D14-Terphenyl (FS)	2013/11/27		110	%	50 - 130
			D8-Acenaphthylene	2013/11/27		68	%	50 - 130
			Acenaphthene	2013/11/27	ND, RDL=0.0050		ug/g	
			Acenaphthylene	2013/11/27	ND, RDL=0.0050		ug/g	
			Anthracene	2013/11/27	ND, RDL=0.0050		ug/g	
			Benzo(a)anthracene	2013/11/27	ND, RDL=0.0050		ug/g	
			Benzo(a)pyrene	2013/11/27	ND, RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2013/11/27	ND, RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2013/11/27	ND, RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2013/11/27	ND, RDL=0.0050		ug/g	
			Chrysene	2013/11/27	ND, RDL=0.0050		ug/g	
			Dibenz(a,h)anthracene	2013/11/27	ND, RDL=0.0050		ug/g	
			Fluoranthene	2013/11/27	ND, RDL=0.0050		ug/g	
			Fluorene	2013/11/27	ND, RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2013/11/27	ND, RDL=0.0050		ug/g	
			1-Methylnaphthalene	2013/11/27	ND, RDL=0.0050		ug/g	
			2-Methylnaphthalene	2013/11/27	ND, RDL=0.0050		ug/g	
			Naphthalene	2013/11/27	ND, RDL=0.0050		ug/g	
			Phenanthrene	2013/11/27	ND, RDL=0.0050		ug/g	
			Pyrene	2013/11/27	ND, RDL=0.0050		ug/g	
		RPD	Acenaphthene	2013/11/28	NC		%	40
			Acenaphthylene	2013/11/28	NC		%	40
			Anthracene	2013/11/28	NC		%	40
			Benzo(a)anthracene	2013/11/28	NC		%	40
			Benzo(a)pyrene	2013/11/28	NC		%	40
			Benzo(b/j)fluoranthene	2013/11/28	NC		%	40
			Benzo(g,h,i)perylene	2013/11/28	NC		%	40
			Benzo(k)fluoranthene	2013/11/28	NC		%	40
			Chrysene	2013/11/28	NC		%	40
			Dibenz(a,h)anthracene	2013/11/28	NC		%	40
			Fluoranthene	2013/11/28	NC		%	40
			Fluorene	2013/11/28	NC		%	40
			Indeno(1,2,3-cd)pyrene	2013/11/28	NC		%	40
			1-Methylnaphthalene	2013/11/28	NC		%	40
			2-Methylnaphthalene	2013/11/28	NC		%	40

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location: SUPREME COURT

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3867

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3438169	DTI	RPD	Naphthalene	2013/11/28	NC		%	40
			Phenanthrene	2013/11/28	NC		%	40
			Pyrene	2013/11/28	NC		%	40

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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B3K3867

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

Cristina Carriere, Scientific Services

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

==========

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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Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: BH13-227
Site Location: STANLEY PARK
Your C.O.C. #: 0022628

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/11/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3K3364
Received: 2013/11/25, 11:20

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	1	N/A	2013/11/27	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum	1	N/A	2013/11/28	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2013/11/25	2013/11/26	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2013/11/26	2013/11/29	OTT SOP-00001	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	1	2013/11/26	2013/11/26	OTT SOP-00003	EPA 6020
MOISTURE	1	N/A	2013/11/27	CAM SOP-00445	McKeague 2nd ed 1978
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2013/11/26	2013/11/27	CAM SOP - 00318	EPA 8270
pH CaCl2 EXTRACT (1)	1	2013/11/28	2013/11/28	CAM SOP-00413	SM 4500H+ B
Volatile Organic Compounds in Soil	1	2013/11/26	2013/11/27	OTT SOP-00005	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed

Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: BH13-227
Site Location: STANLEY PARK
Your C.O.C. #: 0022628

Attention: Jill Peters-Dechman
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/11/29

CERTIFICATE OF ANALYSIS

or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* 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.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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Total cover pages: 2

Maxxam Job #: B3K3364
Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 PAHS (SOIL)

Maxxam ID		UA7762		
Sampling Date		2013/11/25 10:30		
COC Number		0022628		
	Units	**BH13-227 SS2**	**RDL**	**QC Batch**
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	3434439
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	ND	0.0050	3436643
Acenaphthylene	ug/g	ND	0.0050	3436643
Anthracene	ug/g	ND	0.0050	3436643
Benzo(a)anthracene	ug/g	ND	0.0050	3436643
Benzo(a)pyrene	ug/g	ND	0.0050	3436643
Benzo(b/j)fluoranthene	ug/g	0.0066	0.0050	3436643
Benzo(g,h,i)perylene	ug/g	ND	0.0050	3436643
Benzo(k)fluoranthene	ug/g	ND	0.0050	3436643
Chrysene	ug/g	ND	0.0050	3436643
Dibenz(a,h)anthracene	ug/g	ND	0.0050	3436643
Fluoranthene	ug/g	0.0090	0.0050	3436643
Fluorene	ug/g	ND	0.0050	3436643
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.0050	3436643
1-Methylnaphthalene	ug/g	ND	0.0050	3436643
2-Methylnaphthalene	ug/g	ND	0.0050	3436643
Naphthalene	ug/g	ND	0.0050	3436643
Phenanthrene	ug/g	0.0060	0.0050	3436643
Pyrene	ug/g	0.0078	0.0050	3436643
Surrogate Recovery (%)				
D10-Anthracene	%	87		3436643
D14-Terphenyl (FS)	%	87		3436643
D8-Acenaphthylene	%	81		3436643

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

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Maxxam Job #: B3K3364
Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		UA7762		
Sampling Date		2013/11/25 10:30		
COC Number		0022628		
	Units	**BH13-227 SS2**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	25	0.2	3436254
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/g	ND	10	3435086
F1 (C6-C10) - BTEX	ug/g	ND	10	3435086
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	ND	10	3436202
F3 (C16-C34 Hydrocarbons)	ug/g	ND	10	3436202
F4 (C34-C50 Hydrocarbons)	ug/g	ND	10	3436202
Reached Baseline at C50	ug/g	Yes		3436202
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	109		3435086
4-Bromofluorobenzene	%	81		3435086
D10-Ethylbenzene	%	110		3435086
D4-1,2-Dichloroethane	%	111		3435086
o-Terphenyl	%	104		3436202

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

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Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		UA7762		
Sampling Date		2013/11/25 10:30		
COC Number		0022628		
	Units	**BH13-227 SS2**	**RDL**	**QC Batch**
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.071	3434545
Volatile Organics				
Acetone (2-Propanone)	ug/g	ND	0.50	3436307
Benzene	ug/g	ND	0.020	3436307
Bromodichloromethane	ug/g	ND	0.050	3436307
Bromoform	ug/g	ND	0.050	3436307
Bromomethane	ug/g	ND	0.050	3436307
Carbon Tetrachloride	ug/g	ND	0.050	3436307
Chlorobenzene	ug/g	ND	0.050	3436307
Chloroform	ug/g	ND	0.050	3436307
Dibromochloromethane	ug/g	ND	0.050	3436307
1,2-Dichlorobenzene	ug/g	ND	0.050	3436307
1,3-Dichlorobenzene	ug/g	ND	0.050	3436307
1,4-Dichlorobenzene	ug/g	ND	0.050	3436307
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	3436307
1,1-Dichloroethane	ug/g	ND	0.050	3436307
1,2-Dichloroethane	ug/g	ND	0.050	3436307
1,1-Dichloroethylene	ug/g	ND	0.050	3436307
cis-1,2-Dichloroethylene	ug/g	ND	0.050	3436307
trans-1,2-Dichloroethylene	ug/g	ND	0.050	3436307
1,2-Dichloropropane	ug/g	ND	0.050	3436307
cis-1,3-Dichloropropene	ug/g	ND	0.050	3436307
trans-1,3-Dichloropropene	ug/g	ND	0.050	3436307
Ethylbenzene	ug/g	ND	0.020	3436307
Ethylene Dibromide	ug/g	ND	0.050	3436307
Hexane	ug/g	ND	0.050	3436307
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	3436307
Methyl Isobutyl Ketone	ug/g	ND	0.50	3436307
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	3436307
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	3436307
Styrene	ug/g	ND	0.050	3436307

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

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Maxxam Job #: B3K3364
Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		UA7762		
Sampling Date		2013/11/25 10:30		
COC Number		0022628		
	Units	**BH13-227 SS2**	**RDL**	**QC Batch**
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	3436307
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	3436307
Tetrachloroethylene	ug/g	ND	0.050	3436307
Toluene	ug/g	ND	0.020	3436307
1,1,1-Trichloroethane	ug/g	ND	0.050	3436307
1,1,2-Trichloroethane	ug/g	ND	0.050	3436307
Trichloroethylene	ug/g	0.12	0.050	3436307
Vinyl Chloride	ug/g	ND	0.020	3436307
p+m-Xylene	ug/g	ND	0.020	3436307
o-Xylene	ug/g	ND	0.020	3436307
Xylene (Total)	ug/g	ND	0.020	3436307
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	3436307
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	96		3436307
D4-1,2-Dichloroethane	%	118		3436307
D8-Toluene	%	94		3436307

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

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Stantec Consulting Ltd
Client Project #: 163401060
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

RESULTS OF ANALYSES OF SOIL

Maxxam ID		UA7762	
Sampling Date		2013/11/25 10:30	
COC Number		0022628	
	Units	**BH13-227 SS2**	**QC Batch**
Inorganics			
Available (CaCl2) pH	pH	7.28	3438907

QC Batch = Quality Control Batch

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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		UA7762		
Sampling Date		2013/11/25 10:30		
COC Number		0022628		
	Units	**BH13-227 SS2**	**RDL**	**QC Batch**
Metals				
Acid Extractable Aluminum (Al)	ug/g	19000	50	3434972
Acid Extractable Antimony (Sb)	ug/g	0.2	0.2	3434972
Acid Extractable Arsenic (As)	ug/g	4	1	3434972
Acid Extractable Barium (Ba)	ug/g	240	0.5	3434972
Acid Extractable Beryllium (Be)	ug/g	0.9	0.2	3434972
Acid Extractable Cadmium (Cd)	ug/g	0.4	0.1	3434972
Acid Extractable Calcium (Ca)	ug/g	20000	50	3434972
Acid Extractable Chromium (Cr)	ug/g	38	1	3434972
Acid Extractable Cobalt (Co)	ug/g	14	0.1	3434972
Acid Extractable Copper (Cu)	ug/g	18	0.5	3434972
Acid Extractable Iron (Fe)	ug/g	34000	50	3434972
Acid Extractable Lead (Pb)	ug/g	19	1	3434972
Acid Extractable Magnesium (Mg)	ug/g	11000	50	3434972
Acid Extractable Manganese (Mn)	ug/g	1900	1	3434972
Acid Extractable Molybdenum (Mo)	ug/g	1.6	0.5	3434972
Acid Extractable Nickel (Ni)	ug/g	29	0.5	3434972
Acid Extractable Phosphorus (P)	ug/g	1000	50	3434972
Acid Extractable Potassium (K)	ug/g	2100	200	3434972
Acid Extractable Selenium (Se)	ug/g	0.5	0.5	3434972
Acid Extractable Silver (Ag)	ug/g	0.3	0.2	3434972
Acid Extractable Sodium (Na)	ug/g	200	100	3434972
Acid Extractable Strontium (Sr)	ug/g	50	1	3434972
Acid Extractable Thallium (Tl)	ug/g	0.24	0.05	3434972
Acid Extractable Vanadium (V)	ug/g	54	5	3434972
Acid Extractable Zinc (Zn)	ug/g	86	5	3434972

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

Test Summary

Maxxam ID UA7762
Sample ID BH13-227 SS2
Matrix Soil

Collected 2013/11/25
Shipped
Received 2013/11/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3434439	N/A	2013/11/27	Automated Statchk
1,3-Dichloropropene Sum	CALC	3434545	N/A	2013/11/28	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3435086	2013/11/25	2013/11/26	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3436202	2013/11/26	2013/11/29	Habiba Essak
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3434972	2013/11/26	2013/11/26	Raigamage Perera
MOISTURE	BAL	3436254	N/A	2013/11/27	Habiba Essak
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3436643	2013/11/26	2013/11/27	Lingyun Feng
pH CaCl2 EXTRACT		3438907	2013/11/28	2013/11/28	Surinder Rai
Volatile Organic Compounds in Soil	P&T/MS	3436307	2013/11/26	2013/11/27	Paul Rubinato

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Maxxam Job #: B3K3364
Report Date: 2013/11/29

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: STANLEY PARK
Your P.O. #: 16300R-20
Sampler Initials: AW

Package 1	1.3°C

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

GENERAL COMMENTS

Custody seals were present and intact.

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location: STANLEY PARK

Quality Assurance Report

Maxxam Job Number: TB3K3364

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3434972	RAI	Matrix Spike	Acid Extractable Aluminum (Al)	2013/11/26		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2013/11/26		97	%	75 - 125
			Acid Extractable Arsenic (As)	2013/11/26		99	%	75 - 125
			Acid Extractable Barium (Ba)	2013/11/26		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2013/11/26		102	%	75 - 125
			Acid Extractable Cadmium (Cd)	2013/11/26		101	%	75 - 125
			Acid Extractable Calcium (Ca)	2013/11/26		NC	%	75 - 125
			Acid Extractable Chromium (Cr)	2013/11/26		96	%	75 - 125
			Acid Extractable Cobalt (Co)	2013/11/26		97	%	75 - 125
			Acid Extractable Copper (Cu)	2013/11/26		NC	%	75 - 125
			Acid Extractable Iron (Fe)	2013/11/26		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2013/11/26		NC	%	75 - 125
			Acid Extractable Magnesium (Mg)	2013/11/26		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2013/11/26		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2013/11/26		101	%	75 - 125
			Acid Extractable Nickel (Ni)	2013/11/26		95	%	75 - 125
			Acid Extractable Phosphorus (P)	2013/11/26		NC	%	75 - 125
			Acid Extractable Potassium (K)	2013/11/26		NC	%	75 - 125
			Acid Extractable Selenium (Se)	2013/11/26		105	%	75 - 125
			Acid Extractable Silver (Ag)	2013/11/26		99	%	75 - 125
			Acid Extractable Sodium (Na)	2013/11/26		102	%	75 - 125
			Acid Extractable Strontium (Sr)	2013/11/26		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2013/11/26		95	%	75 - 125
			Acid Extractable Vanadium (V)	2013/11/26		99	%	75 - 125
			Acid Extractable Zinc (Zn)	2013/11/26		NC	%	75 - 125
		Spiked Blank	Acid Extractable Aluminum (Al)	2013/11/26		113	%	80 - 120
			Acid Extractable Antimony (Sb)	2013/11/26		98	%	80 - 120
			Acid Extractable Arsenic (As)	2013/11/26		103	%	80 - 120
			Acid Extractable Barium (Ba)	2013/11/26		99	%	80 - 120
			Acid Extractable Beryllium (Be)	2013/11/26		108	%	80 - 120
			Acid Extractable Cadmium (Cd)	2013/11/26		106	%	80 - 120
			Acid Extractable Calcium (Ca)	2013/11/26		106	%	80 - 120
			Acid Extractable Chromium (Cr)	2013/11/26		101	%	80 - 120
			Acid Extractable Cobalt (Co)	2013/11/26		102	%	80 - 120
			Acid Extractable Copper (Cu)	2013/11/26		100	%	80 - 120
			Acid Extractable Iron (Fe)	2013/11/26		112	%	80 - 120
			Acid Extractable Lead (Pb)	2013/11/26		105	%	80 - 120
			Acid Extractable Magnesium (Mg)	2013/11/26		106	%	80 - 120
			Acid Extractable Manganese (Mn)	2013/11/26		103	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2013/11/26		105	%	80 - 120
			Acid Extractable Nickel (Ni)	2013/11/26		102	%	80 - 120
			Acid Extractable Phosphorus (P)	2013/11/26		93	%	80 - 120
			Acid Extractable Potassium (K)	2013/11/26		105	%	80 - 120
			Acid Extractable Selenium (Se)	2013/11/26		110	%	80 - 120
			Acid Extractable Silver (Ag)	2013/11/26		105	%	80 - 120
			Acid Extractable Sodium (Na)	2013/11/26		106	%	80 - 120
			Acid Extractable Strontium (Sr)	2013/11/26		106	%	80 - 120
			Acid Extractable Thallium (Tl)	2013/11/26		104	%	80 - 120
			Acid Extractable Vanadium (V)	2013/11/26		102	%	80 - 120
			Acid Extractable Zinc (Zn)	2013/11/26		105	%	80 - 120
		Method Blank	Acid Extractable Aluminum (Al)	2013/11/26	ND, RDL=50		ug/g	
			Acid Extractable Antimony (Sb)	2013/11/26	ND, RDL=0.2		ug/g	
			Acid Extractable Arsenic (As)	2013/11/26	ND, RDL=1		ug/g	
			Acid Extractable Barium (Ba)	2013/11/26	ND, RDL=0.5		ug/g	
			Acid Extractable Beryllium (Be)	2013/11/26	ND, RDL=0.2		ug/g	

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Client Project #: 163401060
P.O. #: 16300R-20
Site Location: STANLEY PARK

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3364

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3434972	RAI	Method Blank	Acid Extractable Cadmium (Cd)	2013/11/26	ND, RDL=0.1		ug/g	
			Acid Extractable Calcium (Ca)	2013/11/26	ND, RDL=50		ug/g	
			Acid Extractable Chromium (Cr)	2013/11/26	ND, RDL=1		ug/g	
			Acid Extractable Cobalt (Co)	2013/11/26	ND, RDL=0.1		ug/g	
			Acid Extractable Copper (Cu)	2013/11/26	ND, RDL=0.5		ug/g	
			Acid Extractable Iron (Fe)	2013/11/26	ND, RDL=50		ug/g	
			Acid Extractable Lead (Pb)	2013/11/26	ND, RDL=1		ug/g	
			Acid Extractable Magnesium (Mg)	2013/11/26	ND, RDL=50		ug/g	
			Acid Extractable Manganese (Mn)	2013/11/26	ND, RDL=1		ug/g	
			Acid Extractable Molybdenum (Mo)	2013/11/26	ND, RDL=0.5		ug/g	
			Acid Extractable Nickel (Ni)	2013/11/26	ND, RDL=0.5		ug/g	
			Acid Extractable Phosphorus (P)	2013/11/26	ND, RDL=50		ug/g	
			Acid Extractable Potassium (K)	2013/11/26	ND, RDL=200		ug/g	
			Acid Extractable Selenium (Se)	2013/11/26	ND, RDL=0.5		ug/g	
			Acid Extractable Silver (Ag)	2013/11/26	ND, RDL=0.2		ug/g	
			Acid Extractable Sodium (Na)	2013/11/26	ND, RDL=100		ug/g	
			Acid Extractable Strontium (Sr)	2013/11/26	ND, RDL=1		ug/g	
			Acid Extractable Thallium (Tl)	2013/11/26	ND, RDL=0.05		ug/g	
			Acid Extractable Vanadium (V)	2013/11/26	ND, RDL=5		ug/g	
			Acid Extractable Zinc (Zn)	2013/11/26	ND, RDL=5		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2013/11/26	NC		%	35
			Acid Extractable Arsenic (As)	2013/11/26	NC		%	35
			Acid Extractable Barium (Ba)	2013/11/26	7.4		%	35
			Acid Extractable Beryllium (Be)	2013/11/26	NC		%	35
			Acid Extractable Cadmium (Cd)	2013/11/26	NC		%	35
			Acid Extractable Chromium (Cr)	2013/11/26	6.3		%	35
			Acid Extractable Cobalt (Co)	2013/11/26	15.9		%	35
			Acid Extractable Copper (Cu)	2013/11/26	15.6		%	35
			Acid Extractable Lead (Pb)	2013/11/26	24.5		%	35
			Acid Extractable Molybdenum (Mo)	2013/11/26	NC		%	35
			Acid Extractable Nickel (Ni)	2013/11/26	12.1		%	35
			Acid Extractable Selenium (Se)	2013/11/26	NC		%	35
			Acid Extractable Silver (Ag)	2013/11/26	NC		%	35
			Acid Extractable Thallium (Tl)	2013/11/26	NC		%	35
			Acid Extractable Vanadium (V)	2013/11/26	NC		%	35
			Acid Extractable Zinc (Zn)	2013/11/26	10.9		%	35
3435086	LHR	Matrix Spike	1,4-Difluorobenzene	2013/11/25		104	%	60 - 140
			4-Bromofluorobenzene	2013/11/25		83	%	60 - 140
			D10-Ethylbenzene	2013/11/25		122	%	30 - 130
			D4-1,2-Dichloroethane	2013/11/25		105	%	60 - 140
			F1 (C6-C10)	2013/11/25		90	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2013/11/25		108	%	60 - 140
			4-Bromofluorobenzene	2013/11/25		84	%	60 - 140
			D10-Ethylbenzene	2013/11/25		116	%	30 - 130
			D4-1,2-Dichloroethane	2013/11/25		106	%	60 - 140
			F1 (C6-C10)	2013/11/25		92	%	80 - 120
		Method Blank	1,4-Difluorobenzene	2013/11/25		105	%	60 - 140
			4-Bromofluorobenzene	2013/11/25		75	%	60 - 140
			D10-Ethylbenzene	2013/11/25		125	%	30 - 130
			D4-1,2-Dichloroethane	2013/11/25		107	%	60 - 140
			F1 (C6-C10)	2013/11/25	ND, RDL=10		ug/g	
		RPD	F1 (C6-C10)	2013/11/26	3.1		%	50
			F1 (C6-C10) - BTEX	2013/11/26	3.1		%	50
3436202	HES	Matrix Spike	o-Terphenyl	2013/11/28		100	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/11/28		102	%	50 - 130

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P.O. #: 16300R-20
Site Location: STANLEY PARK

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3364

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3436202	HES	Matrix Spike	F3 (C16-C34 Hydrocarbons)	2013/11/28		102	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2013/11/28		102	%	50 - 130
		Spiked Blank	o-Terphenyl	2013/11/28		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/11/28		96	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2013/11/28		96	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2013/11/28		96	%	80 - 120
		Method Blank	o-Terphenyl	2013/11/28		105	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/11/28	ND, RDL=10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2013/11/28	ND, RDL=10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2013/11/28	ND, RDL=10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2013/11/28	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2013/11/28	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2013/11/28	NC		%	50
3436254	HES	RPD	Moisture	2013/11/27	2.5		%	50
3436307	PRB	Matrix Spike	4-Bromofluorobenzene	2013/11/27		107	%	60 - 140
			D4-1,2-Dichloroethane	2013/11/27		106	%	60 - 140
			D8-Toluene	2013/11/27		106	%	60 - 140
			Acetone (2-Propanone)	2013/11/27		101	%	60 - 140
			Benzene	2013/11/27		114	%	60 - 140
			Bromodichloromethane	2013/11/27		125	%	60 - 140
			Bromoform	2013/11/27		128	%	60 - 140
			Bromomethane	2013/11/27		70	%	60 - 140
			Carbon Tetrachloride	2013/11/27		122	%	60 - 140
			Chlorobenzene	2013/11/27		116	%	60 - 140
			Chloroform	2013/11/27		122	%	60 - 140
			Dibromochloromethane	2013/11/27		130	%	60 - 140
			1,2-Dichlorobenzene	2013/11/27		112	%	60 - 140
			1,3-Dichlorobenzene	2013/11/27		109	%	60 - 140
			1,4-Dichlorobenzene	2013/11/27		112	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2013/11/27		101	%	60 - 140
			1,1-Dichloroethane	2013/11/27		137	%	60 - 140
			1,2-Dichloroethane	2013/11/27		122	%	60 - 140
			1,1-Dichloroethylene	2013/11/27		120	%	60 - 140
			cis-1,2-Dichloroethylene	2013/11/27		113	%	60 - 140
			trans-1,2-Dichloroethylene	2013/11/27		118	%	60 - 140
			1,2-Dichloropropane	2013/11/27		117	%	60 - 140
			cis-1,3-Dichloropropene	2013/11/27		117	%	60 - 140
			trans-1,3-Dichloropropene	2013/11/27		121	%	60 - 140
			Ethylbenzene	2013/11/27		114	%	60 - 140
			Ethylene Dibromide	2013/11/27		126	%	60 - 140
			Hexane	2013/11/27		128	%	60 - 140
			Methylene Chloride(Dichloromethane)	2013/11/27		121	%	60 - 140
			Methyl Isobutyl Ketone	2013/11/27		95	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2013/11/27		116	%	60 - 140
			Methyl t-butyl ether (MTBE)	2013/11/27		134	%	60 - 140
			Styrene	2013/11/27		132	%	60 - 140
			1,1,1,2-Tetrachloroethane	2013/11/27		110	%	60 - 140
			1,1,2,2-Tetrachloroethane	2013/11/27		124	%	60 - 140
			Tetrachloroethylene	2013/11/27		120	%	60 - 140
			Toluene	2013/11/27		117	%	60 - 140
			1,1,1-Trichloroethane	2013/11/27		122	%	60 - 140
			1,1,2-Trichloroethane	2013/11/27		125	%	60 - 140
			Trichloroethylene	2013/11/27		117	%	60 - 140
			Vinyl Chloride	2013/11/27		100	%	60 - 140
			p+m-Xylene	2013/11/27		118	%	60 - 140

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location: STANLEY PARK

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3364

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3436307	PRB	Matrix Spike	o-Xylene	2013/11/27		104	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2013/11/27		110	%	60 - 140
		Spiked Blank	4-Bromofluorobenzene	2013/11/27		108	%	60 - 140
			D4-1,2-Dichloroethane	2013/11/27		107	%	60 - 140
			D8-Toluene	2013/11/27		107	%	60 - 140
			Acetone (2-Propanone)	2013/11/27		112	%	60 - 140
			Benzene	2013/11/27		111	%	60 - 140
			Bromodichloromethane	2013/11/27		123	%	60 - 140
			Bromoform	2013/11/27		133	%	60 - 140
			Bromomethane	2013/11/27		113	%	60 - 140
			Carbon Tetrachloride	2013/11/27		117	%	60 - 140
			Chlorobenzene	2013/11/27		118	%	60 - 140
			Chloroform	2013/11/27		120	%	60 - 140
			Dibromochloromethane	2013/11/27		131	%	60 - 140
			1,2-Dichlorobenzene	2013/11/27		113	%	60 - 140
			1,3-Dichlorobenzene	2013/11/27		109	%	60 - 140
			1,4-Dichlorobenzene	2013/11/27		110	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2013/11/27		107	%	60 - 140
			1,1-Dichloroethane	2013/11/27		122	%	60 - 140
			1,2-Dichloroethane	2013/11/27		122	%	60 - 140
			1,1-Dichloroethylene	2013/11/27		115	%	60 - 140
			cis-1,2-Dichloroethylene	2013/11/27		117	%	60 - 140
			trans-1,2-Dichloroethylene	2013/11/27		123	%	60 - 140
			1,2-Dichloropropane	2013/11/27		115	%	60 - 140
			cis-1,3-Dichloropropene	2013/11/27		118	%	60 - 140
			trans-1,3-Dichloropropene	2013/11/27		118	%	60 - 140
			Ethylbenzene	2013/11/27		115	%	60 - 140
			Ethylene Dibromide	2013/11/27		128	%	60 - 140
			Hexane	2013/11/27		132	%	60 - 140
			Methylene Chloride(Dichloromethane)	2013/11/27		122	%	60 - 140
			Methyl Isobutyl Ketone	2013/11/27		122	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2013/11/27		133	%	60 - 140
			Methyl t-butyl ether (MTBE)	2013/11/27		129	%	60 - 140
			Styrene	2013/11/27		135	%	60 - 140
			1,1,1,2-Tetrachloroethane	2013/11/27		131	%	60 - 140
			1,1,2,2-Tetrachloroethane	2013/11/27		124	%	60 - 140
			Tetrachloroethylene	2013/11/27		122	%	60 - 140
			Toluene	2013/11/27		118	%	60 - 140
			1,1,1-Trichloroethane	2013/11/27		118	%	60 - 140
			1,1,2-Trichloroethane	2013/11/27		130	%	60 - 140
			Trichloroethylene	2013/11/27		117	%	60 - 140
			Vinyl Chloride	2013/11/27		112	%	60 - 140
			p+m-Xylene	2013/11/27		117	%	60 - 140
			o-Xylene	2013/11/27		107	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2013/11/27		110	%	60 - 140
		Method Blank	4-Bromofluorobenzene	2013/11/27		95	%	60 - 140
			D4-1,2-Dichloroethane	2013/11/27		121	%	60 - 140
			D8-Toluene	2013/11/27		91	%	60 - 140
			Acetone (2-Propanone)	2013/11/27	ND, RDL=0.50		ug/g	
			Benzene	2013/11/27	ND, RDL=0.020		ug/g	
			Bromodichloromethane	2013/11/27	ND, RDL=0.050		ug/g	
			Bromoform	2013/11/27	ND, RDL=0.050		ug/g	
			Bromomethane	2013/11/27	ND, RDL=0.050		ug/g	
			Carbon Tetrachloride	2013/11/27	ND, RDL=0.050		ug/g	
			Chlorobenzene	2013/11/27	ND, RDL=0.050		ug/g	

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P.O. #: 16300R-20
Site Location: STANLEY PARK

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3364

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3436307	PRB	Method Blank	Chloroform	2013/11/27	ND, RDL=0.050		ug/g	
			Dibromochloromethane	2013/11/27	ND, RDL=0.050		ug/g	
			1,2-Dichlorobenzene	2013/11/27	ND, RDL=0.050		ug/g	
			1,3-Dichlorobenzene	2013/11/27	ND, RDL=0.050		ug/g	
			1,4-Dichlorobenzene	2013/11/27	ND, RDL=0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2013/11/27	ND, RDL=0.050		ug/g	
			1,1-Dichloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			1,2-Dichloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			1,1-Dichloroethylene	2013/11/27	ND, RDL=0.050		ug/g	
			cis-1,2-Dichloroethylene	2013/11/27	ND, RDL=0.050		ug/g	
			trans-1,2-Dichloroethylene	2013/11/27	ND, RDL=0.050		ug/g	
			1,2-Dichloropropane	2013/11/27	ND, RDL=0.050		ug/g	
			cis-1,3-Dichloropropene	2013/11/27	ND, RDL=0.050		ug/g	
			trans-1,3-Dichloropropene	2013/11/27	ND, RDL=0.050		ug/g	
			Ethylbenzene	2013/11/27	ND, RDL=0.020		ug/g	
			Ethylene Dibromide	2013/11/27	ND, RDL=0.050		ug/g	
			Hexane	2013/11/27	ND, RDL=0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2013/11/27	ND, RDL=0.050		ug/g	
			Methyl Isobutyl Ketone	2013/11/27	ND, RDL=0.50		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2013/11/27	ND, RDL=0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2013/11/27	ND, RDL=0.050		ug/g	
			Styrene	2013/11/27	ND, RDL=0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			Tetrachloroethylene	2013/11/27	ND, RDL=0.050		ug/g	
			Toluene	2013/11/27	ND, RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			1,1,2-Trichloroethane	2013/11/27	ND, RDL=0.050		ug/g	
			Trichloroethylene	2013/11/27	ND, RDL=0.050		ug/g	
			Vinyl Chloride	2013/11/27	ND, RDL=0.020		ug/g	
			p+m-Xylene	2013/11/27	ND, RDL=0.020		ug/g	
			o-Xylene	2013/11/27	ND, RDL=0.020		ug/g	
			Xylene (Total)	2013/11/27	ND, RDL=0.020		ug/g	
			Trichlorofluoromethane (FREON 11)	2013/11/27	ND, RDL=0.050		ug/g	
		RPD	Acetone (2-Propanone)	2013/11/27	NC		%	50
			Benzene	2013/11/27	NC		%	50
			Bromodichloromethane	2013/11/27	NC		%	50
			Bromoform	2013/11/27	NC		%	50
			Bromomethane	2013/11/27	NC		%	50
			Carbon Tetrachloride	2013/11/27	NC		%	50
			Chlorobenzene	2013/11/27	NC		%	50
			Chloroform	2013/11/27	NC		%	50
			Dibromochloromethane	2013/11/27	NC		%	50
			1,2-Dichlorobenzene	2013/11/27	NC		%	50
			1,3-Dichlorobenzene	2013/11/27	NC		%	50
			1,4-Dichlorobenzene	2013/11/27	NC		%	50
			Dichlorodifluoromethane (FREON 12)	2013/11/27	NC		%	50
			1,1-Dichloroethane	2013/11/27	NC		%	50
			1,2-Dichloroethane	2013/11/27	NC		%	50
			1,1-Dichloroethylene	2013/11/27	NC		%	50
			cis-1,2-Dichloroethylene	2013/11/27	NC		%	50
			trans-1,2-Dichloroethylene	2013/11/27	NC		%	50
			1,2-Dichloropropane	2013/11/27	NC		%	50
			cis-1,3-Dichloropropene	2013/11/27	NC		%	50
			trans-1,3-Dichloropropene	2013/11/27	NC		%	50

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location: STANLEY PARK

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3364

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3436307	PRB	RPD	Ethylbenzene	2013/11/27	NC		%	50
			Ethylene Dibromide	2013/11/27	NC		%	50
			Hexane	2013/11/27	NC		%	50
			Methylene Chloride(Dichloromethane)	2013/11/27	NC		%	50
			Methyl Isobutyl Ketone	2013/11/27	NC		%	50
			Methyl Ethyl Ketone (2-Butanone)	2013/11/27	NC		%	50
			Methyl t-butyl ether (MTBE)	2013/11/27	NC		%	50
			Styrene	2013/11/27	NC		%	50
			1,1,1,2-Tetrachloroethane	2013/11/27	NC		%	50
			1,1,2,2-Tetrachloroethane	2013/11/27	NC		%	50
			Tetrachloroethylene	2013/11/27	NC		%	50
			Toluene	2013/11/27	NC		%	50
			1,1,1-Trichloroethane	2013/11/27	NC		%	50
			1,1,2-Trichloroethane	2013/11/27	NC		%	50
			Trichloroethylene	2013/11/27	NC		%	50
			Vinyl Chloride	2013/11/27	NC		%	50
			p+m-Xylene	2013/11/27	4.5		%	50
			o-Xylene	2013/11/27	NC		%	50
			Xylene (Total)	2013/11/27	6.6		%	50
			Trichlorofluoromethane (FREON 11)	2013/11/27	NC		%	50
3436643	LFE	Matrix Spike	D10-Anthracene	2013/11/27		91	%	50 - 130
			D14-Terphenyl (FS)	2013/11/27		90	%	50 - 130
			D8-Acenaphthylene	2013/11/27		85	%	50 - 130
			Acenaphthene	2013/11/27		95	%	50 - 130
			Acenaphthylene	2013/11/27		89	%	50 - 130
			Anthracene	2013/11/27		89	%	50 - 130
			Benzo(a)anthracene	2013/11/27		90	%	50 - 130
			Benzo(a)pyrene	2013/11/27		84	%	50 - 130
			Benzo(b/j)fluoranthene	2013/11/27		86	%	50 - 130
			Benzo(g,h,i)perylene	2013/11/27		83	%	50 - 130
			Benzo(k)fluoranthene	2013/11/27		90	%	50 - 130
			Chrysene	2013/11/27		89	%	50 - 130
			Dibenz(a,h)anthracene	2013/11/27		95	%	50 - 130
			Fluoranthene	2013/11/27		90	%	50 - 130
			Fluorene	2013/11/27		92	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/11/27		83	%	50 - 130
			1-Methylnaphthalene	2013/11/27		86	%	50 - 130
			2-Methylnaphthalene	2013/11/27		85	%	50 - 130
			Naphthalene	2013/11/27		86	%	50 - 130
			Phenanthrene	2013/11/27		91	%	50 - 130
			Pyrene	2013/11/27		88	%	50 - 130
		Spiked Blank	D10-Anthracene	2013/11/27		88	%	50 - 130
			D14-Terphenyl (FS)	2013/11/27		86	%	50 - 130
			D8-Acenaphthylene	2013/11/27		82	%	50 - 130
			Acenaphthene	2013/11/27		90	%	50 - 130
			Acenaphthylene	2013/11/27		85	%	50 - 130
			Anthracene	2013/11/27		86	%	50 - 130
			Benzo(a)anthracene	2013/11/27		86	%	50 - 130
			Benzo(a)pyrene	2013/11/27		83	%	50 - 130
			Benzo(b/j)fluoranthene	2013/11/27		84	%	50 - 130
			Benzo(g,h,i)perylene	2013/11/27		85	%	50 - 130
			Benzo(k)fluoranthene	2013/11/27		94	%	50 - 130
			Chrysene	2013/11/27		87	%	50 - 130
			Dibenz(a,h)anthracene	2013/11/27		95	%	50 - 130
			Fluoranthene	2013/11/27		87	%	50 - 130

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location: STANLEY PARK

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3364

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3436643	LFE	Spiked Blank	Fluorene	2013/11/27		88	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/11/27		84	%	50 - 130
			1-Methylnaphthalene	2013/11/27		83	%	50 - 130
			2-Methylnaphthalene	2013/11/27		82	%	50 - 130
			Naphthalene	2013/11/27		85	%	50 - 130
			Phenanthrene	2013/11/27		86	%	50 - 130
			Pyrene	2013/11/27		85	%	50 - 130
		Method Blank	D10-Anthracene	2013/11/27		94	%	50 - 130
			D14-Terphenyl (FS)	2013/11/27		83	%	50 - 130
			D8-Acenaphthylene	2013/11/27		84	%	50 - 130
			Acenaphthene	2013/11/27	ND, RDL=0.0050		ug/g	
			Acenaphthylene	2013/11/27	ND, RDL=0.0050		ug/g	
			Anthracene	2013/11/27	ND, RDL=0.0050		ug/g	
			Benzo(a)anthracene	2013/11/27	ND, RDL=0.0050		ug/g	
			Benzo(a)pyrene	2013/11/27	ND, RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2013/11/27	ND, RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2013/11/27	ND, RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2013/11/27	ND, RDL=0.0050		ug/g	
			Chrysene	2013/11/27	ND, RDL=0.0050		ug/g	
			Dibenz(a,h)anthracene	2013/11/27	ND, RDL=0.0050		ug/g	
			Fluoranthene	2013/11/27	ND, RDL=0.0050		ug/g	
			Fluorene	2013/11/27	ND, RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2013/11/27	ND, RDL=0.0050		ug/g	
			1-Methylnaphthalene	2013/11/27	ND, RDL=0.0050		ug/g	
			2-Methylnaphthalene	2013/11/27	ND, RDL=0.0050		ug/g	
			Naphthalene	2013/11/27	ND, RDL=0.0050		ug/g	
			Phenanthrene	2013/11/27	ND, RDL=0.0050		ug/g	
			Pyrene	2013/11/27	ND, RDL=0.0050		ug/g	
		RPD	Acenaphthene	2013/11/27	NC		%	40
			Acenaphthylene	2013/11/27	NC		%	40
			Anthracene	2013/11/27	NC		%	40
			Benzo(a)anthracene	2013/11/27	NC		%	40
			Benzo(a)pyrene	2013/11/27	NC		%	40
			Benzo(b/j)fluoranthene	2013/11/27	NC		%	40
			Benzo(g,h,i)perylene	2013/11/27	NC		%	40
			Benzo(k)fluoranthene	2013/11/27	NC		%	40
			Chrysene	2013/11/27	NC		%	40
			Dibenz(a,h)anthracene	2013/11/27	NC		%	40
			Fluoranthene	2013/11/27	NC		%	40
			Fluorene	2013/11/27	NC		%	40
			Indeno(1,2,3-cd)pyrene	2013/11/27	NC		%	40
			1-Methylnaphthalene	2013/11/27	NC		%	40
			2-Methylnaphthalene	2013/11/27	NC		%	40
			Naphthalene	2013/11/27	NC		%	40
			Phenanthrene	2013/11/27	NC		%	40
			Pyrene	2013/11/27	NC		%	40

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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a

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Stantec Consulting Ltd
Attention: Jill Peters-Dechman
Client Project #: 163401060
P.O. #: 16300R-20
Site Location: STANLEY PARK

Quality Assurance Report (Continued)

Maxxam Job Number: TB3K3364

reliable calculation.

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Validation Signature Page

Maxxam Job #: B3K3364

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

Cristina Carriere, Scientific Services

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

==========

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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Success Through Science®

Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: CUMBERLAND AND RIDEAU STREETS
Your C.O.C. #: 43681403, 436814-03-01

Attention:Jill Peters-Dechman

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/12/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3K8271
Received: 2013/12/03, 08:40

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	2	N/A	2013/12/09	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum	2	N/A	2013/12/10	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	2	2013/12/03	2013/12/03	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil (1)	2	2013/12/05	2013/12/06	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	2	2013/12/06	2013/12/09	CAM SOP-00447	EPA 6020
Moisture (1)	2	N/A	2013/12/05	CAM SOP-00445	R.Carter,1993
PAH Compounds in Soil by GC/MS (SIM) (1)	2	2013/12/04	2013/12/05	CAM SOP - 00318	EPA 8270
pH CaCl2 EXTRACT (1)	2	2013/12/09	2013/12/09	CAM SOP-00413	SM 4500H+ B
Volatile Organic Compounds in Soil	2	2013/12/09	2013/12/09	OTT SOP-00005	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* 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

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Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: CUMBERLAND AND RIDEAU STREETS
Your C.O.C. #: 43681403, 436814-03-01

Attention:Jill Peters-Dechman

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/12/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3K8271
Received: 2013/12/03, 08:40

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573
==========
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Maxxam Job #: B3K8271
Report Date: 2013/12/10

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: JU

RESULTS OF ANALYSES OF SOIL

Maxxam ID		UD2029	UD2030		
Sampling Date		2013/12/02 12:30	2013/12/02 12:45		
COC Number		436814-03-01	436814-03-01		
	Units	BH13-212 SS1	BH13-212 SS2	RDL	QC Batch
Inorganics					
Moisture	%	7.3	8.1	1.0	3447148
Available (CaCl2) pH	pH	7.70	7.75		3450669

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Sampler Initials: JU

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		UD2029	UD2030		
Sampling Date		2013/12/02 12:30	2013/12/02 12:45		
COC Number		436814-03-01	436814-03-01		
	Units	BH13-212 SS1	BH13-212 SS2	RDL	QC Batch
Metals					
Acid Extractable Aluminum (Al)	ug/g	2400	2600	50	3448802
Acid Extractable Antimony (Sb)	ug/g	ND	ND	0.20	3448802
Acid Extractable Arsenic (As)	ug/g	2.7	2.7	1.0	3448802
Acid Extractable Barium (Ba)	ug/g	44	63	0.50	3448802
Acid Extractable Beryllium (Be)	ug/g	ND	0.22	0.20	3448802
Acid Extractable Cadmium (Cd)	ug/g	ND	ND	0.10	3448802
Acid Extractable Calcium (Ca)	ug/g	200000	210000	50	3448802
Acid Extractable Chromium (Cr)	ug/g	7.0	7.5	1.0	3448802
Acid Extractable Cobalt (Co)	ug/g	3.3	3.5	0.10	3448802
Acid Extractable Copper (Cu)	ug/g	5.4	5.1	0.50	3448802
Acid Extractable Iron (Fe)	ug/g	8800	8100	50	3448802
Acid Extractable Lead (Pb)	ug/g	4.9	3.4	1.0	3448802
Acid Extractable Magnesium (Mg)	ug/g	11000	7100	50	3448802
Acid Extractable Manganese (Mn)	ug/g	230	190	1.0	3448802
Acid Extractable Molybdenum (Mo)	ug/g	0.81	0.60	0.50	3448802
Acid Extractable Nickel (Ni)	ug/g	6.5	6.9	0.50	3448802
Acid Extractable Phosphorus (P)	ug/g	700	680	50	3448802
Acid Extractable Potassium (K)	ug/g	750	750	200	3448802
Acid Extractable Selenium (Se)	ug/g	ND	ND	0.50	3448802
Acid Extractable Silver (Ag)	ug/g	ND	ND	0.20	3448802
Acid Extractable Sodium (Na)	ug/g	1100	970	100	3448802
Acid Extractable Strontium (Sr)	ug/g	270	300	1.0	3448802
Acid Extractable Thallium (Tl)	ug/g	0.056	ND	0.050	3448802
Acid Extractable Vanadium (V)	ug/g	11	12	5.0	3448802
Acid Extractable Zinc (Zn)	ug/g	12	20	5.0	3448802

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

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Sampler Initials: JU

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		UD2029	UD2030		
Sampling Date		2013/12/02 12:30	2013/12/02 12:45		
COC Number		436814-03-01	436814-03-01		
	Units	**BH13-212 SS1**	**BH13-212 SS2**	**RDL**	**QC Batch**
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	0.071	3444270

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

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		UD2029	UD2030		
Sampling Date		2013/12/02 12:30	2013/12/02 12:45		
COC Number		436814-03-01	436814-03-01		
	Units	**BH13-212 SS1**	**BH13-212 SS2**	**RDL**	**QC Batch**
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	10	3447056
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	50	3447056
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	50	3447056
Reached Baseline at C50	ug/g	Yes	Yes		3447056
o-Terphenyl	%	90	91		3447056

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

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Report Date: 2013/12/10

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: JU

O'REG 153 PAHS (SOIL)

Maxxam ID		UD2029	UD2030		
Sampling Date		2013/12/02 12:30	2013/12/02 12:45		
COC Number		436814-03-01	436814-03-01		
	Units	BH13-212 SS1	BH13-212 SS2	RDL	QC Batch
Calculated Parameters					
Methylnaphthalene, 2-(1-)	ug/g	ND	ND	0.0071	3444268
Polyaromatic Hydrocarbons					
Acenaphthene	ug/g	ND	ND	0.0050	3446860
Acenaphthylene	ug/g	ND	ND	0.0050	3446860
Anthracene	ug/g	ND	ND	0.0050	3446860
Benzo(a)anthracene	ug/g	ND	ND	0.0050	3446860
Benzo(a)pyrene	ug/g	ND	ND	0.0050	3446860
Benzo(b/j)fluoranthene	ug/g	ND	ND	0.0050	3446860
Benzo(g,h,i)perylene	ug/g	ND	ND	0.0050	3446860
Benzo(k)fluoranthene	ug/g	ND	ND	0.0050	3446860
Chrysene	ug/g	ND	ND	0.0050	3446860
Dibenz(a,h)anthracene	ug/g	ND	ND	0.0050	3446860
Fluoranthene	ug/g	ND	ND	0.0050	3446860
Fluorene	ug/g	ND	ND	0.0050	3446860
Indeno(1,2,3-cd)pyrene	ug/g	ND	ND	0.0050	3446860
1-Methylnaphthalene	ug/g	ND	ND	0.0050	3446860
2-Methylnaphthalene	ug/g	ND	ND	0.0050	3446860
Naphthalene	ug/g	ND	ND	0.0050	3446860
Phenanthrene	ug/g	ND	ND	0.0050	3446860
Pyrene	ug/g	ND	ND	0.0050	3446860
D10-Anthracene	%	90	92		3446860
D14-Terphenyl (FS)	%	92	92		3446860
D8-Acenaphthylene	%	87	85		3446860

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

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Report Date: 2013/12/10

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: JU

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		UD2029	UD2030		
Sampling Date		2013/12/02 12:30	2013/12/02 12:45		
COC Number		436814-03-01	436814-03-01		
	Units	BH13-212 SS1	BH13-212 SS2	RDL	QC Batch
BTEX & F1 Hydrocarbons					
F1 (C6-C10)	ug/g	ND	ND	10	3444173
F1 (C6-C10) - BTEX	ug/g	ND	ND	10	3444173
1,4-Difluorobenzene	%	98	99		3444173
4-Bromofluorobenzene	%	82	80		3444173
D10-Ethylbenzene	%	110	99		3444173
D4-1,2-Dichloroethane	%	95	96		3444173

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

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Your P.O. #: 16300R-20
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O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		UD2029	UD2029	UD2030		
Sampling Date		2013/12/02 12:30	2013/12/02 12:30	2013/12/02 12:45		
COC Number		436814-03-01	436814-03-01	436814-03-01		
	Units	BH13-212 SS1	BH13-212 SS1 Lab-Dup	BH13-212 SS2	RDL	QC Batch
Volatile Organics						
Acetone (2-Propanone)	ug/g	ND	ND	ND	0.50	3451367
Benzene	ug/g	ND	ND	ND	0.020	3451367
Bromodichloromethane	ug/g	ND	ND	ND	0.050	3451367
Bromoform	ug/g	ND	ND	ND	0.050	3451367
Bromomethane	ug/g	ND	ND	ND	0.050	3451367
Carbon Tetrachloride	ug/g	ND	ND	ND	0.050	3451367
Chlorobenzene	ug/g	ND	ND	ND	0.050	3451367
Chloroform	ug/g	ND	ND	ND	0.050	3451367
Dibromochloromethane	ug/g	ND	ND	ND	0.050	3451367
1,2-Dichlorobenzene	ug/g	ND	ND	ND	0.050	3451367
1,3-Dichlorobenzene	ug/g	ND	ND	ND	0.050	3451367
1,4-Dichlorobenzene	ug/g	ND	ND	ND	0.050	3451367
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	0.050	3451367
1,1-Dichloroethane	ug/g	ND	ND	ND	0.050	3451367
1,2-Dichloroethane	ug/g	ND	ND	ND	0.050	3451367
1,1-Dichloroethylene	ug/g	ND	ND	ND	0.050	3451367
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	0.050	3451367
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	0.050	3451367
1,2-Dichloropropane	ug/g	ND	ND	ND	0.050	3451367
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	0.050	3451367
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	0.050	3451367
Ethylbenzene	ug/g	ND	ND	ND	0.020	3451367
Ethylene Dibromide	ug/g	ND	ND	ND	0.050	3451367
Hexane	ug/g	ND	ND	ND	0.050	3451367
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	0.050	3451367
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	0.50	3451367
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	0.50	3451367
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	0.050	3451367
Styrene	ug/g	ND	ND	ND	0.050	3451367
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	0.050	3451367
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	0.050	3451367

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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O'REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		UD2029	UD2029	UD2030		
Sampling Date		2013/12/02 12:30	2013/12/02 12:30	2013/12/02 12:45		
COC Number		436814-03-01	436814-03-01	436814-03-01		
	Units	BH13-212 SS1	BH13-212 SS1 Lab-Dup	BH13-212 SS2	RDL	QC Batch
Tetrachloroethylene	ug/g	ND	ND	ND	0.050	3451367
Toluene	ug/g	ND	ND	ND	0.020	3451367
1,1,1-Trichloroethane	ug/g	ND	ND	ND	0.050	3451367
1,1,2-Trichloroethane	ug/g	ND	ND	ND	0.050	3451367
Trichloroethylene	ug/g	ND	ND	ND	0.050	3451367
Vinyl Chloride	ug/g	ND	ND	ND	0.020	3451367
p+m-Xylene	ug/g	ND	ND	ND	0.020	3451367
o-Xylene	ug/g	ND	ND	ND	0.020	3451367
Xylene (Total)	ug/g	ND	ND	ND	0.020	3451367
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	0.050	3451367
4-Bromofluorobenzene	%	103	102	105		3451367
D4-1,2-Dichloroethane	%	110	107	116		3451367
D8-Toluene	%	94	95	95		3451367

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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TEST SUMMARY

Maxxam ID: UD2029
Sample ID: BH13-212 SS1
Matrix: Soil

Collected: 2013/12/02
Shipped:
Received: 2013/12/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3444268	N/A	2013/12/09	Automated Statchk
1,3-Dichloropropene Sum	CALC	3444270	N/A	2013/12/10	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3444173	2013/12/03	2013/12/03	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3447056	2013/12/05	2013/12/06	Dorina Popa
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3448802	2013/12/06	2013/12/09	Viviana Canzonieri
Moisture	BAL	3447148	N/A	2013/12/05	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3446860	2013/12/04	2013/12/05	Darryl Tiller
pH CaCl2 EXTRACT		3450669	2013/12/09	2013/12/09	Surinder Rai
Volatile Organic Compounds in Soil	P&T/MS	3451367	2013/12/09	2013/12/09	Paul Rubinato

Maxxam ID: UD2029 Dup
Sample ID: BH13-212 SS1
Matrix: Soil

Collected: 2013/12/02
Shipped:
Received: 2013/12/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds in Soil	P&T/MS	3451367	2013/12/09	2013/12/09	Paul Rubinato

Maxxam ID: UD2030
Sample ID: BH13-212 SS2
Matrix: Soil

Collected: 2013/12/02
Shipped:
Received: 2013/12/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3444268	N/A	2013/12/09	Automated Statchk
1,3-Dichloropropene Sum	CALC	3444270	N/A	2013/12/10	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3444173	2013/12/03	2013/12/03	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3447056	2013/12/05	2013/12/06	Dorina Popa
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3448802	2013/12/06	2013/12/09	Viviana Canzonieri
Moisture	BAL	3447148	N/A	2013/12/05	Valentina Kaftani
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3446860	2013/12/04	2013/12/05	Darryl Tiller
pH CaCl2 EXTRACT		3450669	2013/12/09	2013/12/09	Surinder Rai
Volatile Organic Compounds in Soil	P&T/MS	3451367	2013/12/09	2013/12/09	Paul Rubinato

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GENERAL COMMENTS

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

Package 1	2.7°C

Cooler custody seal was present and intact.

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
3444173	LHR	Matrix Spike	1,4-Difluorobenzene	2013/12/03		94	%	60 - 140
	LHR	Matrix Spike	4-Bromofluorobenzene	2013/12/03		82	%	60 - 140
			D10-Ethylbenzene	2013/12/03		86	%	30 - 130
			D4-1,2-Dichloroethane	2013/12/03		97	%	60 - 140
			F1 (C6-C10)	2013/12/03		82	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2013/12/03		99	%	60 - 140
			4-Bromofluorobenzene	2013/12/03		88	%	60 - 140
			D10-Ethylbenzene	2013/12/03		104	%	30 - 130
			D4-1,2-Dichloroethane	2013/12/03		96	%	60 - 140
			F1 (C6-C10)	2013/12/03		109	%	80 - 120
		Method Blank	1,4-Difluorobenzene	2013/12/03		96	%	60 - 140
			4-Bromofluorobenzene	2013/12/03		85	%	60 - 140
			D10-Ethylbenzene	2013/12/03		99	%	30 - 130
			D4-1,2-Dichloroethane	2013/12/03		95	%	60 - 140
			F1 (C6-C10)	2013/12/03	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2013/12/03	ND, RDL=10		ug/g	
		RPD	F1 (C6-C10)	2013/12/03	NC		%	50
			F1 (C6-C10) - BTEX	2013/12/03	NC		%	50
3446860	DTI	Matrix Spike	D10-Anthracene	2013/12/05		87	%	50 - 130
	DTI	Matrix Spike	D14-Terphenyl (FS)	2013/12/05		89	%	50 - 130
			D8-Acenaphthylene	2013/12/05		82	%	50 - 130
			Acenaphthene	2013/12/05		85	%	50 - 130
			Acenaphthylene	2013/12/05		83	%	50 - 130
			Anthracene	2013/12/05		89	%	50 - 130
			Benzo(a)anthracene	2013/12/05		91	%	50 - 130
			Benzo(a)pyrene	2013/12/05		87	%	50 - 130
			Benzo(b/j)fluoranthene	2013/12/05		84	%	50 - 130
			Benzo(g,h,i)perylene	2013/12/05		90	%	50 - 130
			Benzo(k)fluoranthene	2013/12/05		85	%	50 - 130
			Chrysene	2013/12/05		88	%	50 - 130
			Dibenz(a,h)anthracene	2013/12/05		97	%	50 - 130
			Fluoranthene	2013/12/05		89	%	50 - 130
			Fluorene	2013/12/05		85	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/12/05		91	%	50 - 130
			1-Methylnaphthalene	2013/12/05		85	%	50 - 130
			2-Methylnaphthalene	2013/12/05		71	%	50 - 130
			Naphthalene	2013/12/05		83	%	50 - 130
			Phenanthrene	2013/12/05		86	%	50 - 130
			Pyrene	2013/12/05		90	%	50 - 130
		Spiked Blank	D10-Anthracene	2013/12/05		91	%	50 - 130
			D14-Terphenyl (FS)	2013/12/05		93	%	50 - 130
			D8-Acenaphthylene	2013/12/05		85	%	50 - 130
			Acenaphthene	2013/12/05		88	%	50 - 130
			Acenaphthylene	2013/12/05		85	%	50 - 130
			Anthracene	2013/12/05		91	%	50 - 130
			Benzo(a)anthracene	2013/12/05		90	%	50 - 130
			Benzo(a)pyrene	2013/12/05		90	%	50 - 130
			Benzo(b/j)fluoranthene	2013/12/05		89	%	50 - 130
			Benzo(g,h,i)perylene	2013/12/05		89	%	50 - 130
			Benzo(k)fluoranthene	2013/12/05		89	%	50 - 130
			Chrysene	2013/12/05		90	%	50 - 130
			Dibenz(a,h)anthracene	2013/12/05		90	%	50 - 130
			Fluoranthene	2013/12/05		91	%	50 - 130
			Fluorene	2013/12/05		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/12/05		90	%	50 - 130
			1-Methylnaphthalene	2013/12/05		89	%	50 - 130
			2-Methylnaphthalene	2013/12/05		74	%	50 - 130
			Naphthalene	2013/12/05		86	%	50 - 130
			Phenanthrene	2013/12/05		90	%	50 - 130
			Pyrene	2013/12/05		92	%	50 - 130
		Method Blank	D10-Anthracene	2013/12/05		90	%	50 - 130
			D14-Terphenyl (FS)	2013/12/05		92	%	50 - 130
			D8-Acenaphthylene	2013/12/05		83	%	50 - 130

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Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
		Method Blank	Acenaphthene	2013/12/05	ND, RDL=0.0050		ug/g	
			Acenaphthylene	2013/12/05	ND, RDL=0.0050		ug/g	
			Anthracene	2013/12/05	ND, RDL=0.0050		ug/g	
			Benzo(a)anthracene	2013/12/05	ND, RDL=0.0050		ug/g	
			Benzo(a)pyrene	2013/12/05	ND, RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2013/12/05	ND, RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2013/12/05	ND, RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2013/12/05	ND, RDL=0.0050		ug/g	
			Chrysene	2013/12/05	ND, RDL=0.0050		ug/g	
			Dibenz(a,h)anthracene	2013/12/05	ND, RDL=0.0050		ug/g	
			Fluoranthene	2013/12/05	ND, RDL=0.0050		ug/g	
			Fluorene	2013/12/05	ND, RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2013/12/05	ND, RDL=0.0050		ug/g	
			1-Methylnaphthalene	2013/12/05	ND, RDL=0.0050		ug/g	
			2-Methylnaphthalene	2013/12/05	ND, RDL=0.0050		ug/g	
			Naphthalene	2013/12/05	ND, RDL=0.0050		ug/g	
			Phenanthrene	2013/12/05	ND, RDL=0.0050		ug/g	
			Pyrene	2013/12/05	ND, RDL=0.0050		ug/g	
		RPD	Acenaphthene	2013/12/05	NC		%	40
			Acenaphthylene	2013/12/05	NC		%	40
			Anthracene	2013/12/05	NC		%	40
			Benzo(a)anthracene	2013/12/05	NC		%	40
			Benzo(a)pyrene	2013/12/05	NC		%	40
			Benzo(b/j)fluoranthene	2013/12/05	NC		%	40
			Benzo(g,h,i)perylene	2013/12/05	NC		%	40
			Benzo(k)fluoranthene	2013/12/05	NC		%	40
			Chrysene	2013/12/05	NC		%	40
			Dibenz(a,h)anthracene	2013/12/05	NC		%	40
			Fluoranthene	2013/12/05	NC		%	40
			Fluorene	2013/12/05	NC		%	40
			Indeno(1,2,3-cd)pyrene	2013/12/05	NC		%	40
			1-Methylnaphthalene	2013/12/05	NC		%	40
			2-Methylnaphthalene	2013/12/05	NC		%	40
			Naphthalene	2013/12/05	NC		%	40
			Phenanthrene	2013/12/05	NC		%	40
			Pyrene	2013/12/05	NC		%	40
3447056	DPO	Matrix Spike	o-Terphenyl	2013/12/06		89	%	50 - 130
	DPO	Matrix Spike	F2 (C10-C16 Hydrocarbons)	2013/12/06		98	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2013/12/06		96	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2013/12/06		102	%	50 - 130
		Spiked Blank	o-Terphenyl	2013/12/06		88	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2013/12/06		96	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2013/12/06		94	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2013/12/06		100	%	80 - 120
		Method Blank	o-Terphenyl	2013/12/06		88	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2013/12/06	ND, RDL=10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2013/12/06	ND, RDL=50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2013/12/06	ND, RDL=50		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2013/12/06	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2013/12/06	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2013/12/06	NC		%	30
3447148	VPA		Moisture	2013/12/05	1.5		%	20
3448802	VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2013/12/09		NC	%	75 - 125
	VIV	Matrix Spike	Acid Extractable Antimony (Sb)	2013/12/09		95	%	75 - 125
			Acid Extractable Arsenic (As)	2013/12/09		100	%	75 - 125
			Acid Extractable Barium (Ba)	2013/12/09		NC(1)	%	75 - 125
			Acid Extractable Beryllium (Be)	2013/12/09		104	%	75 - 125
			Acid Extractable Cadmium (Cd)	2013/12/09		101	%	75 - 125
			Acid Extractable Calcium (Ca)	2013/12/09		NC	%	75 - 125
			Acid Extractable Chromium (Cr)	2013/12/09		NC(1)	%	75 - 125
			Acid Extractable Cobalt (Co)	2013/12/09		102	%	75 - 125
			Acid Extractable Copper (Cu)	2013/12/09		100	%	75 - 125
			Acid Extractable Iron (Fe)	2013/12/09		NC	%	75 - 125

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Report Date: 2013/12/10

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
		Matrix Spike	Acid Extractable Lead (Pb)	2013/12/09		102	%	75 - 125
			Acid Extractable Magnesium (Mg)	2013/12/09		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2013/12/09		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2013/12/09		102	%	75 - 125
			Acid Extractable Nickel (Ni)	2013/12/09		NC(1)	%	75 - 125
			Acid Extractable Phosphorus (P)	2013/12/09		NC	%	75 - 125
			Acid Extractable Potassium (K)	2013/12/09		NC	%	75 - 125
			Acid Extractable Selenium (Se)	2013/12/09		103	%	75 - 125
			Acid Extractable Silver (Ag)	2013/12/09		103	%	75 - 125
			Acid Extractable Sodium (Na)	2013/12/09		100	%	75 - 125
			Acid Extractable Strontium (Sr)	2013/12/09		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2013/12/09		87	%	75 - 125
			Acid Extractable Vanadium (V)	2013/12/09		NC(1)	%	75 - 125
			Acid Extractable Zinc (Zn)	2013/12/09		NC(1)	%	75 - 125
		Spiked Blank	Acid Extractable Aluminum (Al)	2013/12/09		108	%	80 - 120
			Acid Extractable Antimony (Sb)	2013/12/09		101	%	80 - 120
			Acid Extractable Arsenic (As)	2013/12/09		100	%	80 - 120
			Acid Extractable Barium (Ba)	2013/12/09		100	%	80 - 120
			Acid Extractable Beryllium (Be)	2013/12/09		102	%	80 - 120
			Acid Extractable Cadmium (Cd)	2013/12/09		98	%	80 - 120
			Acid Extractable Calcium (Ca)	2013/12/09		107	%	80 - 120
			Acid Extractable Chromium (Cr)	2013/12/09		100	%	80 - 120
			Acid Extractable Cobalt (Co)	2013/12/09		102	%	80 - 120
			Acid Extractable Copper (Cu)	2013/12/09		100	%	80 - 120
			Acid Extractable Iron (Fe)	2013/12/09		106	%	80 - 120
			Acid Extractable Lead (Pb)	2013/12/09		100	%	80 - 120
			Acid Extractable Magnesium (Mg)	2013/12/09		101	%	80 - 120
			Acid Extractable Manganese (Mn)	2013/12/09		99	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2013/12/09		99	%	80 - 120
			Acid Extractable Nickel (Ni)	2013/12/09		103	%	80 - 120
			Acid Extractable Phosphorus (P)	2013/12/09		116	%	80 - 120
			Acid Extractable Potassium (K)	2013/12/09		99	%	80 - 120
			Acid Extractable Selenium (Se)	2013/12/09		104	%	80 - 120
			Acid Extractable Silver (Ag)	2013/12/09		101	%	80 - 120
			Acid Extractable Sodium (Na)	2013/12/09		100	%	80 - 120
			Acid Extractable Strontium (Sr)	2013/12/09		98	%	80 - 120
			Acid Extractable Thallium (Tl)	2013/12/09		88	%	80 - 120
			Acid Extractable Vanadium (V)	2013/12/09		98	%	80 - 120
			Acid Extractable Zinc (Zn)	2013/12/09		103	%	80 - 120
		Method Blank	Acid Extractable Aluminum (Al)	2013/12/09	ND, RDL=50		ug/g	
			Acid Extractable Antimony (Sb)	2013/12/09	ND, RDL=0.20		ug/g	
			Acid Extractable Arsenic (As)	2013/12/09	ND, RDL=1.0		ug/g	
			Acid Extractable Barium (Ba)	2013/12/09	ND, RDL=0.50		ug/g	
			Acid Extractable Beryllium (Be)	2013/12/09	ND, RDL=0.20		ug/g	
			Acid Extractable Cadmium (Cd)	2013/12/09	ND, RDL=0.10		ug/g	
			Acid Extractable Calcium (Ca)	2013/12/09	ND, RDL=50		ug/g	
			Acid Extractable Chromium (Cr)	2013/12/09	ND, RDL=1.0		ug/g	
			Acid Extractable Cobalt (Co)	2013/12/09	ND, RDL=0.10		ug/g	
			Acid Extractable Copper (Cu)	2013/12/09	ND, RDL=0.50		ug/g	
			Acid Extractable Iron (Fe)	2013/12/09	ND, RDL=50		ug/g	
			Acid Extractable Lead (Pb)	2013/12/09	ND, RDL=1.0		ug/g	
			Acid Extractable Magnesium (Mg)	2013/12/09	ND, RDL=50		ug/g	
			Acid Extractable Manganese (Mn)	2013/12/09	ND, RDL=1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2013/12/09	ND, RDL=0.50		ug/g	
			Acid Extractable Nickel (Ni)	2013/12/09	ND, RDL=0.50		ug/g	
			Acid Extractable Phosphorus (P)	2013/12/09	ND, RDL=50		ug/g	
			Acid Extractable Potassium (K)	2013/12/09	ND, RDL=200		ug/g	
			Acid Extractable Selenium (Se)	2013/12/09	ND, RDL=0.50		ug/g	
			Acid Extractable Silver (Ag)	2013/12/09	ND, RDL=0.20		ug/g	
			Acid Extractable Sodium (Na)	2013/12/09	ND, RDL=100		ug/g	
			Acid Extractable Strontium (Sr)	2013/12/09	ND, RDL=1.0		ug/g	
			Acid Extractable Thallium (Tl)	2013/12/09	ND, RDL=0.050		ug/g	
			Acid Extractable Vanadium (V)	2013/12/09	ND, RDL=5.0		ug/g	

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Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: JU

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
		Method Blank	Acid Extractable Zinc (Zn)	2013/12/09	ND, RDL=5.0		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2013/12/09	NC		%	30
			Acid Extractable Arsenic (As)	2013/12/09	4.3		%	30
			Acid Extractable Barium (Ba)	2013/12/09	2.3		%	30
			Acid Extractable Beryllium (Be)	2013/12/09	NC		%	30
			Acid Extractable Cadmium (Cd)	2013/12/09	NC		%	30
			Acid Extractable Chromium (Cr)	2013/12/09	5.9		%	30
			Acid Extractable Cobalt (Co)	2013/12/09	6.1		%	30
			Acid Extractable Copper (Cu)	2013/12/09	7.6		%	30
			Acid Extractable Lead (Pb)	2013/12/09	NC		%	30
			Acid Extractable Molybdenum (Mo)	2013/12/09	NC		%	30
			Acid Extractable Nickel (Ni)	2013/12/09	3.4		%	30
			Acid Extractable Selenium (Se)	2013/12/09	NC		%	30
			Acid Extractable Silver (Ag)	2013/12/09	NC		%	30
			Acid Extractable Thallium (Tl)	2013/12/09	NC		%	30
			Acid Extractable Vanadium (V)	2013/12/09	4		%	30
			Acid Extractable Zinc (Zn)	2013/12/09	6.3		%	30
3451367	PRB	Matrix Spike [UD2030]	4-Bromofluorobenzene	2013/12/09		105	%	60 - 140
	PRB	Matrix Spike [UD2030]	D4-1,2-Dichloroethane	2013/12/09		110	%	60 - 140
			D8-Toluene	2013/12/09		100	%	60 - 140
			Acetone (2-Propanone)	2013/12/09		123	%	60 - 140
			Benzene	2013/12/09		107	%	60 - 140
			Bromodichloromethane	2013/12/09		113	%	60 - 140
			Bromoform	2013/12/09		104	%	60 - 140
			Bromomethane	2013/12/09		65	%	60 - 140
			Carbon Tetrachloride	2013/12/09		106	%	60 - 140
			Chlorobenzene	2013/12/09		106	%	60 - 140
			Chloroform	2013/12/09		114	%	60 - 140
			Dibromochloromethane	2013/12/09		115	%	60 - 140
			1,2-Dichlorobenzene	2013/12/09		104	%	60 - 140
			1,3-Dichlorobenzene	2013/12/09		106	%	60 - 140
			1,4-Dichlorobenzene	2013/12/09		104	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2013/12/09		89	%	60 - 140
			1,1-Dichloroethane	2013/12/09		129	%	60 - 140
			1,2-Dichloroethane	2013/12/09		115	%	60 - 140
			1,1-Dichloroethylene	2013/12/09		105	%	60 - 140
			cis-1,2-Dichloroethylene	2013/12/09		107	%	60 - 140
			trans-1,2-Dichloroethylene	2013/12/09		117	%	60 - 140
			1,2-Dichloropropane	2013/12/09		110	%	60 - 140
			cis-1,3-Dichloropropene	2013/12/09		97	%	60 - 140
			trans-1,3-Dichloropropene	2013/12/09		99	%	60 - 140
			Ethylbenzene	2013/12/09		103	%	60 - 140
			Ethylene Dibromide	2013/12/09		107	%	60 - 140
			Hexane	2013/12/09		115	%	60 - 140
			Methylene Chloride(Dichloromethane)	2013/12/09		118	%	60 - 140
			Methyl Isobutyl Ketone	2013/12/09		100	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2013/12/09		80	%	60 - 140
			Methyl t-butyl ether (MTBE)	2013/12/09		126	%	60 - 140
			Styrene	2013/12/09		108	%	60 - 140
			1,1,1,2-Tetrachloroethane	2013/12/09		117	%	60 - 140
			1,1,2,2-Tetrachloroethane	2013/12/09		122	%	60 - 140
			Tetrachloroethylene	2013/12/09		116	%	60 - 140
			Toluene	2013/12/09		106	%	60 - 140
			1,1,1-Trichloroethane	2013/12/09		112	%	60 - 140
			1,1,2-Trichloroethane	2013/12/09		114	%	60 - 140
			Trichloroethylene	2013/12/09		116	%	60 - 140
			Vinyl Chloride	2013/12/09		85	%	60 - 140
			p+m-Xylene	2013/12/09		101	%	60 - 140
			o-Xylene	2013/12/09		100	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2013/12/09		96	%	60 - 140
		Spiked Blank	4-Bromofluorobenzene	2013/12/09		106	%	60 - 140
			D4-1,2-Dichloroethane	2013/12/09		106	%	60 - 140
			D8-Toluene	2013/12/09		97	%	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
		Spiked Blank	Acetone (2-Propanone)	2013/12/09		109	%	60 - 140
			Benzene	2013/12/09		94	%	60 - 140
			Bromodichloromethane	2013/12/09		98	%	60 - 140
			Bromoform	2013/12/09		89	%	60 - 140
			Bromomethane	2013/12/09		92	%	60 - 140
			Carbon Tetrachloride	2013/12/09		91	%	60 - 140
			Chlorobenzene	2013/12/09		92	%	60 - 140
			Chloroform	2013/12/09		97	%	60 - 140
			Dibromochloromethane	2013/12/09		100	%	60 - 140
			1,2-Dichlorobenzene	2013/12/09		94	%	60 - 140
			1,3-Dichlorobenzene	2013/12/09		94	%	60 - 140
			1,4-Dichlorobenzene	2013/12/09		93	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2013/12/09		83	%	60 - 140
			1,1-Dichloroethane	2013/12/09		105	%	60 - 140
			1,2-Dichloroethane	2013/12/09		97	%	60 - 140
			1,1-Dichloroethylene	2013/12/09		92	%	60 - 140
			cis-1,2-Dichloroethylene	2013/12/09		93	%	60 - 140
			trans-1,2-Dichloroethylene	2013/12/09		114	%	60 - 140
			1,2-Dichloropropane	2013/12/09		98	%	60 - 140
			cis-1,3-Dichloropropene	2013/12/09		82	%	60 - 140
			trans-1,3-Dichloropropene	2013/12/09		84	%	60 - 140
			Ethylbenzene	2013/12/09		89	%	60 - 140
			Ethylene Dibromide	2013/12/09		94	%	60 - 140
			Hexane	2013/12/09		107	%	60 - 140
			Methylene Chloride(Dichloromethane)	2013/12/09		115	%	60 - 140
			Methyl Isobutyl Ketone	2013/12/09		77	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2013/12/09		77	%	60 - 140
			Methyl t-butyl ether (MTBE)	2013/12/09		132	%	60 - 140
			Styrene	2013/12/09		93	%	60 - 140
			1,1,1,2-Tetrachloroethane	2013/12/09		100	%	60 - 140
			1,1,2,2-Tetrachloroethane	2013/12/09		115	%	60 - 140
			Tetrachloroethylene	2013/12/09		98	%	60 - 140
			Toluene	2013/12/09		91	%	60 - 140
			1,1,1-Trichloroethane	2013/12/09		96	%	60 - 140
			1,1,2-Trichloroethane	2013/12/09		99	%	60 - 140
			Trichloroethylene	2013/12/09		91	%	60 - 140
			Vinyl Chloride	2013/12/09		87	%	60 - 140
			p+m-Xylene	2013/12/09		86	%	60 - 140
			o-Xylene	2013/12/09		86	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2013/12/09		84	%	60 - 140
		Method Blank	4-Bromofluorobenzene	2013/12/09		106	%	60 - 140
			D4-1,2-Dichloroethane	2013/12/09		104	%	60 - 140
			D8-Toluene	2013/12/09		100	%	60 - 140
			Acetone (2-Propanone)	2013/12/09	ND, RDL=0.50		ug/g	
			Benzene	2013/12/09	ND, RDL=0.020		ug/g	
			Bromodichloromethane	2013/12/09	ND, RDL=0.050		ug/g	
			Bromoform	2013/12/09	ND, RDL=0.050		ug/g	
			Bromomethane	2013/12/09	ND, RDL=0.050		ug/g	
			Carbon Tetrachloride	2013/12/09	ND, RDL=0.050		ug/g	
			Chlorobenzene	2013/12/09	ND, RDL=0.050		ug/g	
			Chloroform	2013/12/09	ND, RDL=0.050		ug/g	
			Dibromochloromethane	2013/12/09	ND, RDL=0.050		ug/g	
			1,2-Dichlorobenzene	2013/12/09	ND, RDL=0.050		ug/g	
			1,3-Dichlorobenzene	2013/12/09	ND, RDL=0.050		ug/g	
			1,4-Dichlorobenzene	2013/12/09	ND, RDL=0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2013/12/09	ND, RDL=0.050		ug/g	
			1,1-Dichloroethane	2013/12/09	ND, RDL=0.050		ug/g	
			1,2-Dichloroethane	2013/12/09	ND, RDL=0.050		ug/g	
			1,1-Dichloroethylene	2013/12/09	ND, RDL=0.050		ug/g	
			cis-1,2-Dichloroethylene	2013/12/09	ND, RDL=0.050		ug/g	
			trans-1,2-Dichloroethylene	2013/12/09	ND, RDL=0.050		ug/g	
			1,2-Dichloropropane	2013/12/09	ND, RDL=0.050		ug/g	
			cis-1,3-Dichloropropene	2013/12/09	ND, RDL=0.050		ug/g	

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Stantec Consulting Ltd
Client Project #: 163401060
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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
		Method Blank	trans-1,3-Dichloropropene	2013/12/09	ND, RDL=0.050		ug/g	
			Ethylbenzene	2013/12/09	ND, RDL=0.020		ug/g	
			Ethylene Dibromide	2013/12/09	ND, RDL=0.050		ug/g	
			Hexane	2013/12/09	ND, RDL=0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2013/12/09	ND, RDL=0.050		ug/g	
			Methyl Isobutyl Ketone	2013/12/09	ND, RDL=0.50		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2013/12/09	ND, RDL=0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2013/12/09	ND, RDL=0.050		ug/g	
			Styrene	2013/12/09	ND, RDL=0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2013/12/09	ND, RDL=0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2013/12/09	ND, RDL=0.050		ug/g	
			Tetrachloroethylene	2013/12/09	ND, RDL=0.050		ug/g	
			Toluene	2013/12/09	ND, RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2013/12/09	ND, RDL=0.050		ug/g	
			1,1,2-Trichloroethane	2013/12/09	ND, RDL=0.050		ug/g	
			Trichloroethylene	2013/12/09	ND, RDL=0.050		ug/g	
			Vinyl Chloride	2013/12/09	ND, RDL=0.020		ug/g	
			p+m-Xylene	2013/12/09	ND, RDL=0.020		ug/g	
			o-Xylene	2013/12/09	ND, RDL=0.020		ug/g	
			Xylene (Total)	2013/12/09	ND, RDL=0.020		ug/g	
			Trichlorofluoromethane (FREON 11)	2013/12/09	ND, RDL=0.050		ug/g	
		RPD [UD2029]	Acetone (2-Propanone)	2013/12/09	NC		%	50
			Benzene	2013/12/09	NC		%	50
			Bromodichloromethane	2013/12/09	NC		%	50
			Bromoform	2013/12/09	NC		%	50
			Bromomethane	2013/12/09	NC		%	50
			Carbon Tetrachloride	2013/12/09	NC		%	50
			Chlorobenzene	2013/12/09	NC		%	50
			Chloroform	2013/12/09	NC		%	50
			Dibromochloromethane	2013/12/09	NC		%	50
			1,2-Dichlorobenzene	2013/12/09	NC		%	50
			1,3-Dichlorobenzene	2013/12/09	NC		%	50
			1,4-Dichlorobenzene	2013/12/09	NC		%	50
			Dichlorodifluoromethane (FREON 12)	2013/12/09	NC		%	50
			1,1-Dichloroethane	2013/12/09	NC		%	50
			1,2-Dichloroethane	2013/12/09	NC		%	50
			1,1-Dichloroethylene	2013/12/09	NC		%	50
			cis-1,2-Dichloroethylene	2013/12/09	NC		%	50
			trans-1,2-Dichloroethylene	2013/12/09	NC		%	50
			1,2-Dichloropropane	2013/12/09	NC		%	50
			cis-1,3-Dichloropropene	2013/12/09	NC		%	50
			trans-1,3-Dichloropropene	2013/12/09	NC		%	50
			Ethylbenzene	2013/12/09	NC		%	50
			Ethylene Dibromide	2013/12/09	NC		%	50
			Hexane	2013/12/09	NC		%	50
			Methylene Chloride(Dichloromethane)	2013/12/09	NC		%	50
			Methyl Isobutyl Ketone	2013/12/09	NC		%	50
			Methyl Ethyl Ketone (2-Butanone)	2013/12/09	NC		%	50
			Methyl t-butyl ether (MTBE)	2013/12/09	NC		%	50
			Styrene	2013/12/09	NC		%	50
			1,1,1,2-Tetrachloroethane	2013/12/09	NC		%	50
			1,1,2,2-Tetrachloroethane	2013/12/09	NC		%	50
			Tetrachloroethylene	2013/12/09	NC		%	50
			Toluene	2013/12/09	NC		%	50
			1,1,1-Trichloroethane	2013/12/09	NC		%	50
			1,1,2-Trichloroethane	2013/12/09	NC		%	50
			Trichloroethylene	2013/12/09	NC		%	50
			Vinyl Chloride	2013/12/09	NC		%	50
			p+m-Xylene	2013/12/09	NC		%	50
			o-Xylene	2013/12/09	NC		%	50
			Xylene (Total)	2013/12/09	NC		%	50

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Client Project #: 163401060
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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
		RPD [UD2029]	Trichlorofluoromethane (FREON 11)	2013/12/09	NC		%	50

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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) The recovery in the matrix spike was not calculated (NC). Spiked concentration was less than 2x that native to the sample.

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 #: B3K8271
Report Date: 2013/12/10

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: JU

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

Medhat Riskallah, Manager, Hydrocarbon Department

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

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

Your Project #: MB3M0171

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2013/12/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3B7543
Received: 2013/12/21, 15:20

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Cadmium - low level CCME - Dissolved	5	N/A	2013/12/27	AB SOP-00043	EPA 200.8
Elements by ICP - Dissolved	5	N/A	2013/12/23	AB SOP-00042	EPA 200.7
Elements by ICPMS - Dissolved	5	N/A	2013/12/24	AB SOP-00043	EPA 200.8

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

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Wendy Sears, Project manager
Email: WSears@maxxam.ca
Phone# (403) 291-3077

==========

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.

Total cover pages: 1

Maxxam Job #: B3B7543
Report Date: 2013/12/29

MAXXAM ANALYTICS
Client Project #: MB3M0171

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		II9163	II9164	II9165	II9166		
Sampling Date		2013/12/18 10:30	2013/12/18 13:30	2013/12/18 16:30	2013/12/18 10:45		
	UNITS	**13-207B (UJ0452)**	**13-111B (UJ0453)**	**13-108A (UJ0454)**	**2013-A (UJ0455)**	**RDL**	**QC Batch**
Low Level Elements							
Dissolved Cadmium (Cd)	ug/L	0.034	0.012	0.017	0.028	0.0050	7332043
Elements							
Dissolved Aluminum (Al)	mg/L	0.027	<0.0030	0.077	0.018	0.0030	7335214
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	<0.00060	<0.00060	0.00060	7335214
Dissolved Arsenic (As)	mg/L	0.0012	<0.00020	0.0021	0.0013	0.00020	7335214
Dissolved Barium (Ba)	mg/L	0.35	0.065	0.11	0.35	0.010	7332747
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	7335214
Dissolved Boron (B)	mg/L	0.12	0.037	0.13	0.12	0.020	7332747
Dissolved Calcium (Ca)	mg/L	130	120	110	130	0.30	7332747
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0018	<0.0010	0.0010	7335214
Dissolved Cobalt (Co)	mg/L	0.0037	<0.00030	0.0011	0.0039	0.00030	7335214
Dissolved Copper (Cu)	mg/L	<0.00020	<0.00020	0.00080	<0.00020	0.00020	7335214
Dissolved Iron (Fe)	mg/L	0.49	0.78	2.5	0.50	0.060	7332747
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.0044	<0.00020	0.00020	7335214
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	<0.020	<0.020	0.020	7332747
Dissolved Magnesium (Mg)	mg/L	38	41	21	38	0.20	7332747
Dissolved Manganese (Mn)	mg/L	0.76	0.026	0.60	0.77	0.0040	7332747
Dissolved Molybdenum (Mo)	mg/L	0.0070	0.0027	0.0050	0.0069	0.00020	7335214
Dissolved Nickel (Ni)	mg/L	0.0044	<0.00050	0.0016	0.0047	0.00050	7335214
Dissolved Phosphorus (P)	mg/L	0.17	0.10	1.3	0.14	0.10	7332747
Dissolved Potassium (K)	mg/L	16	6.9	7.5	15	0.30	7332747
Dissolved Selenium (Se)	mg/L	0.00022	<0.00020	0.0021	0.00027	0.00020	7335214
Dissolved Silicon (Si)	mg/L	8.4	14	9.0	8.3	0.10	7332747
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	7335214
Dissolved Sodium (Na)	mg/L	240	120	250	240	0.50	7332747
Dissolved Strontium (Sr)	mg/L	1.1	1.3	1.3	1.1	0.020	7332747
Dissolved Sulphur (S)	mg/L	19	47	55	19	0.20	7332747
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	7335214
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	7335214
Dissolved Titanium (Ti)	mg/L	0.0020	<0.0010	0.019	0.0011	0.0010	7335214
Dissolved Uranium (U)	mg/L	0.0035	0.00038	0.0011	0.0035	0.00010	7335214
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.016	<0.0010	0.0010	7335214

RDL = Reportable Detection Limit

Maxxam Job #: B3B7543
Report Date: 2013/12/29

MAXXAM ANALYTICS
Client Project #: MB3M0171

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		II9163	II9164	II9165	II9166		
Sampling Date		2013/12/18 10:30	2013/12/18 13:30	2013/12/18 16:30	2013/12/18 10:45		
	UNITS	**13-207B (UJ0452)**	**13-111B (UJ0453)**	**13-108A (UJ0454)**	**2013-A (UJ0455)**	**RDL**	**QC Batch**
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	7335214

RDL = Reportable Detection Limit

Maxxam Job #: B3B7543
Report Date: 2013/12/29

MAXXAM ANALYTICS
Client Project #: MB3M0171

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		II9167		
Sampling Date		2013/12/19 14:30		
	UNITS	**13-110C (UJ0456)**	**RDL**	**QC Batch**
Low Level Elements				
Dissolved Cadmium (Cd)	ug/L	0.0082	0.0050	7332043
Elements				
Dissolved Aluminum (Al)	mg/L	0.0053	0.0030	7335214
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	7335214
Dissolved Arsenic (As)	mg/L	0.0018	0.00020	7335214
Dissolved Barium (Ba)	mg/L	0.20	0.010	7332747
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	7335214
Dissolved Boron (B)	mg/L	0.35	0.020	7332747
Dissolved Calcium (Ca)	mg/L	230	0.30	7332747
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	7335214
Dissolved Cobalt (Co)	mg/L	0.0011	0.00030	7335214
Dissolved Copper (Cu)	mg/L	<0.00020	0.00020	7335214
Dissolved Iron (Fe)	mg/L	21	0.060	7332747
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	7335214
Dissolved Lithium (Li)	mg/L	<0.020	0.020	7332747
Dissolved Magnesium (Mg)	mg/L	22	0.20	7332747
Dissolved Manganese (Mn)	mg/L	0.92	0.0040	7332747
Dissolved Molybdenum (Mo)	mg/L	0.0035	0.00020	7335214
Dissolved Nickel (Ni)	mg/L	0.0013	0.00050	7335214
Dissolved Phosphorus (P)	mg/L	0.32	0.10	7332747
Dissolved Potassium (K)	mg/L	13	0.30	7332747
Dissolved Selenium (Se)	mg/L	0.0013	0.00020	7335214
Dissolved Silicon (Si)	mg/L	9.1	0.10	7332747
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	7335214
Dissolved Sodium (Na)	mg/L	39	0.50	7332747
Dissolved Strontium (Sr)	mg/L	1.0	0.020	7332747
Dissolved Sulphur (S)	mg/L	45	0.20	7332747
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	7335214
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	7335214
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	7335214
Dissolved Uranium (U)	mg/L	0.0028	0.00010	7335214
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	7335214

RDL = Reportable Detection Limit

Maxxam Job #: B3B7543
Report Date: 2013/12/29

MAXXAM ANALYTICS
Client Project #: MB3M0171

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		II9167		
Sampling Date		2013/12/19 14:30		
	UNITS	**13-110C (UJ0456)**	**RDL**	**QC Batch**
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	7335214
RDL = Reportable Detection Limit				

Maxxam Job #: B3B7543
Report Date: 2013/12/29

MAXXAM ANALYTICS
Client Project #: MB3M0171

Package 1	1.0°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: MB3M0171
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: CB3B7543

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7332747	MB5	Matrix Spike	Dissolved Barium (Ba)	2013/12/23		95	%	80 - 120
			Dissolved Boron (B)	2013/12/23		107	%	80 - 120
			Dissolved Calcium (Ca)	2013/12/23		NC	%	80 - 120
			Dissolved Iron (Fe)	2013/12/23		96	%	80 - 120
			Dissolved Lithium (Li)	2013/12/23		103	%	80 - 120
			Dissolved Magnesium (Mg)	2013/12/23		NC	%	80 - 120
			Dissolved Manganese (Mn)	2013/12/23		99	%	80 - 120
			Dissolved Phosphorus (P)	2013/12/23		105	%	80 - 120
			Dissolved Potassium (K)	2013/12/23		106	%	80 - 120
			Dissolved Silicon (Si)	2013/12/23		NC	%	80 - 120
			Dissolved Sodium (Na)	2013/12/23		NC	%	80 - 120
			Dissolved Strontium (Sr)	2013/12/23		94	%	80 - 120
		Spiked Blank	Dissolved Barium (Ba)	2013/12/23		100	%	80 - 120
			Dissolved Boron (B)	2013/12/23		109	%	80 - 120
			Dissolved Calcium (Ca)	2013/12/23		104	%	80 - 120
			Dissolved Iron (Fe)	2013/12/23		101	%	80 - 120
			Dissolved Lithium (Li)	2013/12/23		107	%	80 - 120
			Dissolved Magnesium (Mg)	2013/12/23		112	%	80 - 120
			Dissolved Manganese (Mn)	2013/12/23		105	%	80 - 120
			Dissolved Phosphorus (P)	2013/12/23		104	%	80 - 120
			Dissolved Potassium (K)	2013/12/23		111	%	80 - 120
			Dissolved Silicon (Si)	2013/12/23		103	%	80 - 120
			Dissolved Sodium (Na)	2013/12/23		109	%	80 - 120
			Dissolved Strontium (Sr)	2013/12/23		100	%	80 - 120
		Method Blank	Dissolved Barium (Ba)	2013/12/23	<0.010		mg/L	
			Dissolved Boron (B)	2013/12/23	<0.020		mg/L	
			Dissolved Calcium (Ca)	2013/12/23	<0.30		mg/L	
			Dissolved Iron (Fe)	2013/12/23	<0.060		mg/L	
			Dissolved Lithium (Li)	2013/12/23	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2013/12/23	<0.20		mg/L	
			Dissolved Manganese (Mn)	2013/12/23	<0.0040		mg/L	
			Dissolved Phosphorus (P)	2013/12/23	<0.10		mg/L	
			Dissolved Potassium (K)	2013/12/23	<0.30		mg/L	
			Dissolved Silicon (Si)	2013/12/23	<0.10		mg/L	
			Dissolved Sodium (Na)	2013/12/23	<0.50		mg/L	
			Dissolved Strontium (Sr)	2013/12/23	<0.020		mg/L	
			Dissolved Sulphur (S)	2013/12/23	<0.20		mg/L	
		RPD	Dissolved Calcium (Ca)	2013/12/23	0.1		%	20
			Dissolved Iron (Fe)	2013/12/23	NC		%	20
			Dissolved Magnesium (Mg)	2013/12/23	1.9		%	20
			Dissolved Manganese (Mn)	2013/12/23	NC		%	20
			Dissolved Potassium (K)	2013/12/23	1.4		%	20
			Dissolved Sodium (Na)	2013/12/23	2.4		%	20
7335214	HC7	Matrix Spike	Dissolved Aluminum (Al)	2013/12/24		93	%	80 - 120
			Dissolved Antimony (Sb)	2013/12/24		78 (1)	%	80 - 120
			Dissolved Arsenic (As)	2013/12/24		90	%	80 - 120
			Dissolved Beryllium (Be)	2013/12/24		94	%	80 - 120
			Dissolved Chromium (Cr)	2013/12/24		87	%	80 - 120
			Dissolved Cobalt (Co)	2013/12/24		86	%	80 - 120
			Dissolved Copper (Cu)	2013/12/24		87	%	80 - 120
			Dissolved Lead (Pb)	2013/12/24		85	%	80 - 120
			Dissolved Molybdenum (Mo)	2013/12/24		NC	%	80 - 120
			Dissolved Nickel (Ni)	2013/12/24		85	%	80 - 120
			Dissolved Selenium (Se)	2013/12/24		88	%	80 - 120
			Dissolved Silver (Ag)	2013/12/24		78 (1)	%	80 - 120

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: MB3M0171
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB3B7543

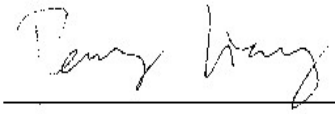
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7335214	HC7	Matrix Spike	Dissolved Thallium (Tl)	2013/12/24		87	%	80 - 120
			Dissolved Tin (Sn)	2013/12/24		88	%	80 - 120
			Dissolved Titanium (Ti)	2013/12/24		94	%	80 - 120
			Dissolved Uranium (U)	2013/12/24		90	%	80 - 120
			Dissolved Vanadium (V)	2013/12/24		87	%	80 - 120
			Dissolved Zinc (Zn)	2013/12/24		87	%	80 - 120
		Spiked Blank	Dissolved Aluminum (Al)	2013/12/24		97	%	80 - 120
			Dissolved Antimony (Sb)	2013/12/24		89	%	80 - 120
			Dissolved Arsenic (As)	2013/12/24		97	%	80 - 120
			Dissolved Beryllium (Be)	2013/12/24		98	%	80 - 120
			Dissolved Chromium (Cr)	2013/12/24		97	%	80 - 120
			Dissolved Cobalt (Co)	2013/12/24		98	%	80 - 120
			Dissolved Copper (Cu)	2013/12/24		98	%	80 - 120
			Dissolved Lead (Pb)	2013/12/24		97	%	80 - 120
			Dissolved Molybdenum (Mo)	2013/12/24		98	%	80 - 120
			Dissolved Nickel (Ni)	2013/12/24		97	%	80 - 120
			Dissolved Selenium (Se)	2013/12/24		100	%	80 - 120
			Dissolved Silver (Ag)	2013/12/24		97	%	80 - 120
			Dissolved Thallium (Tl)	2013/12/24		98	%	80 - 120
			Dissolved Tin (Sn)	2013/12/24		96	%	80 - 120
			Dissolved Titanium (Ti)	2013/12/24		96	%	80 - 120
			Dissolved Uranium (U)	2013/12/24		98	%	80 - 120
			Dissolved Vanadium (V)	2013/12/24		102	%	80 - 120
			Dissolved Zinc (Zn)	2013/12/24		98	%	80 - 120
		Method Blank	Dissolved Aluminum (Al)	2013/12/24	<0.0030		mg/L	
			Dissolved Antimony (Sb)	2013/12/24	<0.00060		mg/L	
			Dissolved Arsenic (As)	2013/12/24	<0.00020		mg/L	
			Dissolved Beryllium (Be)	2013/12/24	<0.0010		mg/L	
			Dissolved Chromium (Cr)	2013/12/24	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2013/12/24	<0.00030		mg/L	
			Dissolved Copper (Cu)	2013/12/24	<0.00020		mg/L	
			Dissolved Lead (Pb)	2013/12/24	<0.00020		mg/L	
			Dissolved Molybdenum (Mo)	2013/12/24	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2013/12/24	<0.00050		mg/L	
			Dissolved Selenium (Se)	2013/12/24	<0.00020		mg/L	
			Dissolved Silver (Ag)	2013/12/24	<0.00010		mg/L	
			Dissolved Thallium (Tl)	2013/12/24	<0.00020		mg/L	
			Dissolved Tin (Sn)	2013/12/24	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2013/12/24	<0.0010		mg/L	
			Dissolved Uranium (U)	2013/12/24	<0.00010		mg/L	
			Dissolved Vanadium (V)	2013/12/24	0.0014, RDL=0.0010		mg/L	
			Dissolved Zinc (Zn)	2013/12/24	<0.0030		mg/L	
		RPD	Dissolved Vanadium (V)	2013/12/24	3.8		%	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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Validation Signature Page

Maxxam Job #: B3B7543

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



Peng Liang, Analyst II

==========

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 ANALYTICS
32 Colonnade Unit 1000
Nepean, Ontario, K2E 7J6
Phone: (613) 274-0573
Fax: (613) 274-0574

Stantec Consulting Ltd - Ottawa
Maxxam PM Parnian Baber

SUBCONTRACTING REQUEST FORM

To: Campo to Calgary Subcontract

Job# B3M0171

☐ Yes ☐ No International Sample/BioHazard (if yes, add copy of Movement Cert., heat treat is required prior to disposal)
☐ Yes ☐ No Special Protocol (if yes, Protocol _____)

Sample ID	Matrix	Test(s) Required	Container	Date Sampled	Date Required
UJ0452-03R \ 13-207B	W	CCME Metals (low Level), dissolved	1(DISM)	2013/12/18 10:30	2013/12/31
UJ0453-03R \ 13-111B	W	CCME Metals (low Level), dissolved	1(DISM)	2013/12/18 13:30	2013/12/31
UJ0454-03R \ 13-108A	W	CCME Metals (low Level), dissolved	1(DISM)	2013/12/18 16:30	2013/12/31
UJ0455-03R \ 2013-A	W	CCME Metals (low Level), dissolved	1(DISM)	2013/12/18 10:45	2013/12/31
UJ0456-03R \ 13-110C	W	CCME Metals (low Level), dissolved	1(DISM)	2013/12/19 14:30	2013/12/31

	Temp. 1	Temp. 2	Temp. 3			
Cooler #1	1	1	1	Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #2				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #3				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO

Receiving Maxxam Location: Campo to Calgary Subcontract JOB # _____

Relinquished by (Sign) Kelsey Pilon (Print) Kelsey Pilon Date and Time 2013/12/20 12:20

Received by (Sign) _____ (Print) Nadeem Cheema Date and Time 2013/12/21 15:20

NOTES:
1) Please call us if due date cannot be met. Please reference Sample ID on your report.
2) Include copy of this completed form, Client COC & signed final report to **scontractor@maxxamanalytics.com**

Reporting Requirements:
National:
Regional:

21-Dec-13 15:20
Carmen McKay
B3B7543
HD0 INS-0010

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Success Through Science®

Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: 400.103
Your C.O.C. #: 44650304, 446503-04-01

Attention:Jill Peters-Dechman

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2013/12/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3M0171
Received: 2013/12/19, 18:00

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	5	N/A	2013/12/27	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum	5	N/A	2013/12/27	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Water	4	N/A	2013/12/23	OTT SOP-00002	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2013/12/24	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	5	2013/12/20	2013/12/21	OTT SOP-00001	CCME Hydrocarbons
PAH Compounds in Water by GC/MS (SIM) (1)	5	2013/12/23	2013/12/24	CAM SOP-00318	EPA 8270
Volatile Organic Compounds in Water	2	N/A	2013/12/23	OTT SOP-00005	EPA 8260 modified
Volatile Organic Compounds in Water	3	N/A	2013/12/24	OTT SOP-00005	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

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

(1) This test was performed by Maxxam Analytics Mississauga

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

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Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573
==========
This report has been generated and distributed using a secure automated process.
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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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		UJ0452	UJ0453	UJ0453	UJ0454	UJ0455	UJ0456		
Sampling Date		2013/12/18 10:30	2013/12/18 13:30	2013/12/18 13:30	2013/12/18 16:30	2013/12/18 10:45	2013/12/19 14:30		
COC Number		446503-04-01	446503-04-01	446503-04-01	446503-04-01	446503-04-01	446503-04-01		
	Units	13-207B	13-111B	13-111B Lab-Dup	13-108A	2013-A	13-110C	RDL	QC Batch
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/L	0.036	ND		0.045	0.033	0.11	0.014	3464560
Polyaromatic Hydrocarbons									
Acenaphthene	ug/L	ND	ND	ND	0.017	ND	0.076	0.010	3467147
Acenaphthylene	ug/L	ND	ND	ND	ND	ND	0.024	0.010	3467147
Anthracene	ug/L	0.010	ND	ND	ND	0.010	0.12	0.010	3467147
Benzo(a)anthracene	ug/L	0.014	ND	ND	0.010	0.013	0.14	0.010	3467147
Benzo(a)pyrene	ug/L	0.013	ND	ND	ND	0.012	0.095	0.010	3467147
Benzo(b/j)fluoranthene	ug/L	0.020	ND	ND	0.010	0.019	0.12	0.010	3467147
Benzo(g,h,i)perylene	ug/L	0.010	ND	ND	ND	ND	0.047	0.010	3467147
Benzo(k)fluoranthene	ug/L	ND	ND	ND	ND	ND	0.047	0.010	3467147
Chrysene	ug/L	0.018	ND	ND	ND	0.014	0.13	0.010	3467147
Dibenz(a,h)anthracene	ug/L	ND	ND	ND	ND	ND	0.011	0.010	3467147
Fluoranthene	ug/L	0.037	ND	ND	0.034	0.038	0.37	0.010	3467147
Fluorene	ug/L	ND	ND	ND	0.014	ND	0.083	0.010	3467147
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	ND	ND	ND	0.049	0.010	3467147
1-Methylnaphthalene	ug/L	0.017	ND	ND	0.026	0.016	0.047	0.010	3467147
2-Methylnaphthalene	ug/L	0.019	ND	ND	0.019	0.018	0.058	0.010	3467147
Naphthalene	ug/L	0.011	ND	ND	0.041	0.010	0.28	0.010	3467147
Phenanthrene	ug/L	0.050	ND	ND	0.042	0.051	0.48	0.010	3467147
Pyrene	ug/L	0.033	ND	ND	0.031	0.034	0.28	0.010	3467147
Surrogate Recovery (%)									
D10-Anthracene	%	95	99	98	93	93	93		3467147
D14-Terphenyl (FS)	%	58	86	83	85	54	74		3467147
D8-Acenaphthylene	%	97	80	68	76	96	84		3467147

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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O'REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		UJ0452	UJ0453	UJ0454	UJ0455	UJ0456		
Sampling Date		2013/12/18 10:30	2013/12/18 13:30	2013/12/18 16:30	2013/12/18 10:45	2013/12/19 14:30		
COC Number		446503-04-01	446503-04-01	446503-04-01	446503-04-01	446503-04-01		
	Units	**13-207B**	**13-111B**	**13-108A**	**2013-A**	**13-110C**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
F1 (C6-C10)	ug/L	ND	ND	ND	ND	ND	25	3464958
F1 (C6-C10) - BTEX	ug/L	ND	ND	ND	ND	ND	25	3464958
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	ND	ND	ND	100	3464542
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	ND	ND	ND	100	3464542
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	ND	ND	ND	100	3464542
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	Yes		3464542
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	96	97	100	99	102		3464958
4-Bromofluorobenzene	%	88	84	94	93	90		3464958
D10-Ethylbenzene	%	104	103	98	107	107		3464958
D4-1,2-Dichloroethane	%	97	98	94	96	99		3464958
o-Terphenyl	%	90	89	82	87	86		3464542

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

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Sampler Initials: LB

O'REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		UJ0452	UJ0453	UJ0454	UJ0455	UJ0456		
Sampling Date		2013/12/18 10:30	2013/12/18 13:30	2013/12/18 16:30	2013/12/18 10:45	2013/12/19 14:30		
COC Number		446503-04-01	446503-04-01	446503-04-01	446503-04-01	446503-04-01		
	Units	**13-207B**	**13-111B**	**13-108A**	**2013-A**	**13-110C**	**RDL**	**QC Batch**
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	ND	ND	ND	0.28	3464698
Volatile Organics								
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	ND	ND	ND	0.50	3463249
Hexane	ug/L	ND	ND	ND	ND	5.4	0.50	3463249
Acetone (2-Propanone)	ug/L	ND	ND	ND	ND	ND	10	3463249
Benzene	ug/L	ND	ND	0.64	ND	0.26	0.10	3463249
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	0.10	3463249
Bromoform	ug/L	ND	ND	ND	ND	ND	0.20	3463249
Bromomethane	ug/L	ND	ND	ND	ND	ND	0.50	3463249
Carbon Tetrachloride	ug/L	ND	ND	ND	ND	ND	0.10	3463249
Chlorobenzene	ug/L	ND	ND	ND	ND	ND	0.10	3463249
Chloroform	ug/L	0.20	ND	ND	0.20	ND	0.10	3463249
Dibromochloromethane	ug/L	ND	ND	ND	ND	ND	0.20	3463249
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	0.20	3463249
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	0.20	3463249
1,4-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	0.20	3463249
1,1-Dichloroethane	ug/L	ND	ND	ND	ND	ND	0.10	3463249
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	0.20	3463249
1,1-Dichloroethylene	ug/L	ND	ND	ND	ND	ND	0.10	3463249
cis-1,2-Dichloroethylene	ug/L	ND	ND	ND	ND	ND	0.10	3463249
trans-1,2-Dichloroethylene	ug/L	ND	ND	ND	ND	ND	0.10	3463249
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	0.10	3463249
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	0.20	3463249
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	0.20	3463249
Ethylbenzene	ug/L	ND	ND	ND	ND	0.19	0.10	3463249
Ethylene Dibromide	ug/L	ND	ND	ND	ND	ND	0.20	3463249
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	ND	ND	ND	0.50	3463249
Methyl Isobutyl Ketone	ug/L	ND	ND	ND	ND	ND	5.0	3463249
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	ND	ND	16	5.0	3463249
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	ND	ND	ND	0.20	3463249
Styrene	ug/L	ND	ND	ND	ND	ND	0.20	3463249
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	0.10	3463249
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	0.20	3463249

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

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Sampler Initials: LB

O'REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		UJ0452	UJ0453	UJ0454	UJ0455	UJ0456		
Sampling Date		2013/12/18 10:30	2013/12/18 13:30	2013/12/18 16:30	2013/12/18 10:45	2013/12/19 14:30		
COC Number		446503-04-01	446503-04-01	446503-04-01	446503-04-01	446503-04-01		
	Units	**13-207B**	**13-111B**	**13-108A**	**2013-A**	**13-110C**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/L	ND	ND	ND	ND	ND	0.10	3463249
Toluene	ug/L	1.8	ND	ND	2.0	0.52	0.20	3463249
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	ND	0.10	3463249
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	0.20	3463249
Trichloroethylene	ug/L	ND	ND	ND	ND	ND	0.10	3463249
Vinyl Chloride	ug/L	ND	ND	ND	ND	ND	0.20	3463249
p+m-Xylene	ug/L	ND	ND	ND	ND	2.4	0.10	3463249
o-Xylene	ug/L	ND	ND	ND	ND	0.56	0.10	3463249
Xylene (Total)	ug/L	ND	ND	ND	ND	3.0	0.10	3463249
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	ND	ND	ND	0.20	3463249
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	85	85	90	84	86		3463249
D4-1,2-Dichloroethane	%	120	120	123	120	107		3463249
D8-Toluene	%	87	87	89	87	95		3463249

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

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TEST SUMMARY

Maxxam ID: UJ0452
Sample ID: 13-207B
Matrix: Water

Collected: 2013/12/18
Shipped:
Received: 2013/12/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3464560	N/A	2013/12/27	Cristina Carriere
1,3-Dichloropropene Sum	CALC	3464698	N/A	2013/12/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3464958	N/A	2013/12/23	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3464542	2013/12/20	2013/12/21	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3467147	2013/12/23	2013/12/24	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3463249	N/A	2013/12/23	Paul Rubinato

Maxxam ID: UJ0453
Sample ID: 13-111B
Matrix: Water

Collected: 2013/12/18
Shipped:
Received: 2013/12/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3464560	N/A	2013/12/27	Cristina Carriere
1,3-Dichloropropene Sum	CALC	3464698	N/A	2013/12/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3464958	N/A	2013/12/23	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3464542	2013/12/20	2013/12/21	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3467147	2013/12/23	2013/12/24	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3463249	N/A	2013/12/23	Paul Rubinato

Maxxam ID: UJ0453 Dup
Sample ID: 13-111B
Matrix: Water

Collected: 2013/12/18
Shipped:
Received: 2013/12/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3467147	2013/12/23	2013/12/24	Darryl Tiller

Maxxam ID: UJ0454
Sample ID: 13-108A
Matrix: Water

Collected: 2013/12/18
Shipped:
Received: 2013/12/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3464560	N/A	2013/12/27	Cristina Carriere
1,3-Dichloropropene Sum	CALC	3464698	N/A	2013/12/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3464958	N/A	2013/12/24	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3464542	2013/12/20	2013/12/21	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3467147	2013/12/23	2013/12/24	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3463249	N/A	2013/12/24	Paul Rubinato

Maxxam ID: UJ0455
Sample ID: 2013-A
Matrix: Water

Collected: 2013/12/18
Shipped:
Received: 2013/12/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3464560	N/A	2013/12/27	Cristina Carriere
1,3-Dichloropropene Sum	CALC	3464698	N/A	2013/12/27	Automated Statchk

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TEST SUMMARY

Maxxam ID: UJ0455
Sample ID: 2013-A
Matrix: Water

Collected: 2013/12/18
Shipped:
Received: 2013/12/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3464958	N/A	2013/12/23	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3464542	2013/12/20	2013/12/21	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3467147	2013/12/23	2013/12/24	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3463249	N/A	2013/12/24	Paul Rubinato

Maxxam ID: UJ0456
Sample ID: 13-110C
Matrix: Water

Collected: 2013/12/19
Shipped:
Received: 2013/12/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3464560	N/A	2013/12/27	Cristina Carriere
1,3-Dichloropropene Sum	CALC	3464698	N/A	2013/12/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3464958	N/A	2013/12/23	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3464542	2013/12/20	2013/12/21	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3467147	2013/12/23	2013/12/24	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3463249	N/A	2013/12/24	Paul Rubinato

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GENERAL COMMENTS

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

Package 1	6.0°C

Custody seal was not present on cooler.

The following vials contained visible sediment.

13-207B: 3 X 40 ml vial for F1/BTEX, 3 X 40 ml vial for VOCs
13-108A: 3 X 40 ml vial for F1/BTEX, 3 X 40 ml vial for VOCs
2013-A: 3 X 40 ml vial for F1/BTEX, 3 X 40 ml vial for VOCs
13-110C: 3 X 40 ml vial for F1/BTEX, 3 X 40 ml vial for VOCs

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
3463249	PRB	Matrix Spike	4-Bromofluorobenzene	2013/12/23		99	%	70 - 130
			D4-1,2-Dichloroethane	2013/12/23		107	%	70 - 130
			D8-Toluene	2013/12/23		106	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2013/12/23		101	%	60 - 140
			Hexane	2013/12/23		113	%	70 - 130
			Acetone (2-Propanone)	2013/12/23		81	%	60 - 140
			Benzene	2013/12/23		103	%	70 - 130
			Bromodichloromethane	2013/12/23		111	%	70 - 130
			Bromoform	2013/12/23		113	%	70 - 130
			Bromomethane	2013/12/23		114	%	60 - 140
			Carbon Tetrachloride	2013/12/23		110	%	70 - 130
			Chlorobenzene	2013/12/23		100	%	70 - 130
			Chloroform	2013/12/23		111	%	70 - 130
			Dibromochloromethane	2013/12/23		116	%	70 - 130
			1,2-Dichlorobenzene	2013/12/23		101	%	70 - 130
			1,3-Dichlorobenzene	2013/12/23		99	%	70 - 130
			1,4-Dichlorobenzene	2013/12/23		103	%	70 - 130
			1,1-Dichloroethane	2013/12/23		114	%	70 - 130
			1,2-Dichloroethane	2013/12/23		107	%	70 - 130
			1,1-Dichloroethylene	2013/12/23		113	%	70 - 130
			cis-1,2-Dichloroethylene	2013/12/23		103	%	70 - 130
			trans-1,2-Dichloroethylene	2013/12/23		117	%	70 - 130
			1,2-Dichloropropane	2013/12/23		105	%	70 - 130
			cis-1,3-Dichloropropene	2013/12/23		100	%	70 - 130
			trans-1,3-Dichloropropene	2013/12/23		94	%	70 - 130
			Ethylbenzene	2013/12/23		98	%	70 - 130
			Ethylene Dibromide	2013/12/23		106	%	70 - 130
			Methylene Chloride(Dichloromethane)	2013/12/23		110	%	70 - 130
			Methyl Isobutyl Ketone	2013/12/23		104	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2013/12/23		78	%	60 - 140
			Methyl t-butyl ether (MTBE)	2013/12/23		105	%	70 - 130
			Styrene	2013/12/23		111	%	70 - 130
			1,1,1,2-Tetrachloroethane	2013/12/23		112	%	70 - 130
			1,1,2,2-Tetrachloroethane	2013/12/23		102	%	70 - 130
			Tetrachloroethylene	2013/12/23		110	%	70 - 130
			Toluene	2013/12/23		110	%	70 - 130
			1,1,1-Trichloroethane	2013/12/23		109	%	70 - 130
			1,1,2-Trichloroethane	2013/12/23		112	%	70 - 130
			Trichloroethylene	2013/12/23		106	%	70 - 130
			Vinyl Chloride	2013/12/23		110	%	70 - 130
			p+m-Xylene	2013/12/23		103	%	70 - 130
			o-Xylene	2013/12/23		84	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2013/12/23		101	%	70 - 130
3463249	PRB	Spiked Blank	4-Bromofluorobenzene	2013/12/23		96	%	70 - 130
			D4-1,2-Dichloroethane	2013/12/23		103	%	70 - 130
			D8-Toluene	2013/12/23		107	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2013/12/23		102	%	60 - 140
			Hexane	2013/12/23		121	%	70 - 130
			Acetone (2-Propanone)	2013/12/23		81	%	60 - 140
			Benzene	2013/12/23		102	%	70 - 130
			Bromodichloromethane	2013/12/23		111	%	70 - 130
			Bromoform	2013/12/23		116	%	70 - 130
			Bromomethane	2013/12/23		113	%	60 - 140
			Carbon Tetrachloride	2013/12/23		111	%	70 - 130
			Chlorobenzene	2013/12/23		102	%	70 - 130
			Chloroform	2013/12/23		109	%	70 - 130
			Dibromochloromethane	2013/12/23		116	%	70 - 130
			1,2-Dichlorobenzene	2013/12/23		101	%	70 - 130
			1,3-Dichlorobenzene	2013/12/23		104	%	70 - 130
			1,4-Dichlorobenzene	2013/12/23		107	%	70 - 130
			1,1-Dichloroethane	2013/12/23		113	%	70 - 130
			1,2-Dichloroethane	2013/12/23		107	%	70 - 130
			1,1-Dichloroethylene	2013/12/23		111	%	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
			cis-1,2-Dichloroethylene	2013/12/23		109	%	70 - 130
			trans-1,2-Dichloroethylene	2013/12/23		120	%	70 - 130
			1,2-Dichloropropane	2013/12/23		106	%	70 - 130
			cis-1,3-Dichloropropene	2013/12/23		101	%	70 - 130
			trans-1,3-Dichloropropene	2013/12/23		96	%	70 - 130
			Ethylbenzene	2013/12/23		97	%	70 - 130
			Ethylene Dibromide	2013/12/23		108	%	70 - 130
			Methylene Chloride(Dichloromethane)	2013/12/23		111	%	70 - 130
			Methyl Isobutyl Ketone	2013/12/23		103	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2013/12/23		83	%	60 - 140
			Methyl t-butyl ether (MTBE)	2013/12/23		106	%	70 - 130
			Styrene	2013/12/23		113	%	70 - 130
			1,1,1,2-Tetrachloroethane	2013/12/23		110	%	70 - 130
			1,1,2,2-Tetrachloroethane	2013/12/23		99	%	70 - 130
			Tetrachloroethylene	2013/12/23		109	%	70 - 130
			Toluene	2013/12/23		108	%	70 - 130
			1,1,1-Trichloroethane	2013/12/23		109	%	70 - 130
			1,1,2-Trichloroethane	2013/12/23		113	%	70 - 130
			Trichloroethylene	2013/12/23		108	%	70 - 130
			Vinyl Chloride	2013/12/23		109	%	70 - 130
			p+m-Xylene	2013/12/23		105	%	70 - 130
			o-Xylene	2013/12/23		81	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2013/12/23		100	%	70 - 130
3463249	PRB	Method Blank	4-Bromofluorobenzene	2013/12/23		86	%	70 - 130
			D4-1,2-Dichloroethane	2013/12/23		113	%	70 - 130
			D8-Toluene	2013/12/23		90	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2013/12/23	ND, RDL=0.50		ug/L	
			Hexane	2013/12/23	ND, RDL=0.50		ug/L	
			Acetone (2-Propanone)	2013/12/23	ND, RDL=10		ug/L	
			Benzene	2013/12/23	ND, RDL=0.10		ug/L	
			Bromodichloromethane	2013/12/23	ND, RDL=0.10		ug/L	
			Bromoform	2013/12/23	ND, RDL=0.20		ug/L	
			Bromomethane	2013/12/23	ND, RDL=0.50		ug/L	
			Carbon Tetrachloride	2013/12/23	ND, RDL=0.10		ug/L	
			Chlorobenzene	2013/12/23	ND, RDL=0.10		ug/L	
			Chloroform	2013/12/23	ND, RDL=0.10		ug/L	
			Dibromochloromethane	2013/12/23	ND, RDL=0.20		ug/L	
			1,2-Dichlorobenzene	2013/12/23	ND, RDL=0.20		ug/L	
			1,3-Dichlorobenzene	2013/12/23	ND, RDL=0.20		ug/L	
			1,4-Dichlorobenzene	2013/12/23	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-Dichloroethane	2013/12/23	ND, RDL=0.10		ug/L	
			1,2-Dichloroethane	2013/12/23	ND, RDL=0.20		ug/L	
			1,1-Dichloroethylene	2013/12/23	ND, RDL=0.10		ug/L	
			cis-1,2-Dichloroethylene	2013/12/23	ND, RDL=0.10		ug/L	
			trans-1,2-Dichloroethylene	2013/12/23	ND, RDL=0.10		ug/L	
			1,2-Dichloropropane	2013/12/23	ND, RDL=0.10		ug/L	
			cis-1,3-Dichloropropene	2013/12/23	ND, RDL=0.20		ug/L	
			trans-1,3-Dichloropropene	2013/12/23	ND, RDL=0.20		ug/L	
			Ethylbenzene	2013/12/23	ND, RDL=0.10		ug/L	
			Ethylene Dibromide	2013/12/23	ND, RDL=0.20		ug/L	
			Methylene Chloride(Dichloromethane)	2013/12/23	ND, RDL=0.50		ug/L	
			Methyl Isobutyl Ketone	2013/12/23	ND, RDL=5.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2013/12/23	ND, RDL=5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2013/12/23	ND, RDL=0.20		ug/L	
			Styrene	2013/12/23	ND, RDL=0.20		ug/L	
			1,1,1,2-Tetrachloroethane	2013/12/23	ND, RDL=0.10		ug/L	
			1,1,2,2-Tetrachloroethane	2013/12/23	ND, RDL=0.20		ug/L	
			Tetrachloroethylene	2013/12/23	ND, RDL=0.10		ug/L	
			Toluene	2013/12/23	ND, RDL=0.20		ug/L	
			1,1,1-Trichloroethane	2013/12/23	ND, RDL=0.10		ug/L	
			1,1,2-Trichloroethane	2013/12/23	ND, RDL=0.20		ug/L	
			Trichloroethylene	2013/12/23	ND, RDL=0.10		ug/L	
			Vinyl Chloride	2013/12/23	ND, RDL=0.20		ug/L	
			p+m-Xylene	2013/12/23	ND, RDL=0.10		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			o-Xylene	2013/12/23	ND, RDL=0.10		ug/L	
			Xylene (Total)	2013/12/23	ND, RDL=0.10		ug/L	
			Trichlorofluoromethane (FREON 11)	2013/12/23	ND, RDL=0.20		ug/L	
3463249	PRB	RPD	Dichlorodifluoromethane (FREON 12)	2013/12/23	NC		%	40
			Hexane	2013/12/23	NC		%	40
			Acetone (2-Propanone)	2013/12/23	NC		%	40
			Benzene	2013/12/23	NC		%	40
			Bromodichloromethane	2013/12/23	NC		%	40
			Bromoform	2013/12/23	NC		%	40
			Bromomethane	2013/12/23	NC		%	40
			Carbon Tetrachloride	2013/12/23	NC		%	40
			Chlorobenzene	2013/12/23	NC		%	40
			Chloroform	2013/12/23	NC		%	40
			Dibromochloromethane	2013/12/23	NC		%	40
			1,2-Dichlorobenzene	2013/12/23	NC		%	40
			1,3-Dichlorobenzene	2013/12/23	NC		%	40
			1,4-Dichlorobenzene	2013/12/23	NC		%	40
			1,1-Dichloroethane	2013/12/23	NC		%	40
			1,2-Dichloroethane	2013/12/23	NC		%	40
			1,1-Dichloroethylene	2013/12/23	NC		%	40
			cis-1,2-Dichloroethylene	2013/12/23	NC		%	40
			trans-1,2-Dichloroethylene	2013/12/23	NC		%	40
			1,2-Dichloropropane	2013/12/23	NC		%	40
			cis-1,3-Dichloropropene	2013/12/23	NC		%	40
			trans-1,3-Dichloropropene	2013/12/23	NC		%	40
			Ethylbenzene	2013/12/23	NC		%	40
			Ethylene Dibromide	2013/12/23	NC		%	40
			Methylene Chloride(Dichloromethane)	2013/12/23	NC		%	40
			Methyl Isobutyl Ketone	2013/12/23	NC		%	40
			Methyl Ethyl Ketone (2-Butanone)	2013/12/23	NC		%	40
			Methyl t-butyl ether (MTBE)	2013/12/23	NC		%	40
			Styrene	2013/12/23	NC		%	40
			1,1,1,2-Tetrachloroethane	2013/12/23	NC		%	40
			1,1,2,2-Tetrachloroethane	2013/12/23	NC		%	40
			Tetrachloroethylene	2013/12/23	NC		%	40
			Toluene	2013/12/23	NC		%	40
			1,1,1-Trichloroethane	2013/12/23	NC		%	40
			1,1,2-Trichloroethane	2013/12/23	NC		%	40
			Trichloroethylene	2013/12/23	NC		%	40
			Vinyl Chloride	2013/12/23	NC		%	40
			p+m-Xylene	2013/12/23	NC		%	40
			o-Xylene	2013/12/23	NC		%	40
			Xylene (Total)	2013/12/23	NC		%	40
			Trichlorofluoromethane (FREON 11)	2013/12/23	NC		%	40
3464542	HES	Matrix Spike	o-Terphenyl	2013/12/21		111	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/12/21		103	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2013/12/21		103	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2013/12/21		103	%	50 - 130
3464542	HES	Spiked Blank	o-Terphenyl	2013/12/21		97	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/12/21		92	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2013/12/21		92	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2013/12/21		92	%	60 - 130
3464542	HES	Method Blank	o-Terphenyl	2013/12/21		96	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2013/12/21	ND, RDL=100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2013/12/21	ND, RDL=100		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
			F4 (C34-C50 Hydrocarbons)	2013/12/21	ND, RDL=100		ug/L	
3464542	HES	RPD	F2 (C10-C16 Hydrocarbons)	2013/12/21	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2013/12/21	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2013/12/21	NC		%	50
3464958	LHR	Matrix Spike	1,4-Difluorobenzene	2013/12/23		98	%	70 - 130
			4-Bromofluorobenzene	2013/12/23		106	%	70 - 130
			D10-Ethylbenzene	2013/12/23		124	%	70 - 130
			D4-1,2-Dichloroethane	2013/12/23		96	%	70 - 130
			F1 (C6-C10)	2013/12/23		106	%	70 - 130
3464958	LHR	Spiked Blank	1,4-Difluorobenzene	2013/12/23		94	%	70 - 130
			4-Bromofluorobenzene	2013/12/23		96	%	70 - 130
			D10-Ethylbenzene	2013/12/23		102	%	70 - 130
			D4-1,2-Dichloroethane	2013/12/23		93	%	70 - 130
			F1 (C6-C10)	2013/12/23		98	%	70 - 130
3464958	LHR	Method Blank	1,4-Difluorobenzene	2013/12/23		95	%	70 - 130
			4-Bromofluorobenzene	2013/12/23		100	%	70 - 130
			D10-Ethylbenzene	2013/12/23		100	%	70 - 130
			D4-1,2-Dichloroethane	2013/12/23		102	%	70 - 130
			F1 (C6-C10)	2013/12/23	ND, RDL=25		ug/L	
			F1 (C6-C10) - BTEX	2013/12/23	ND, RDL=25		ug/L	
3464958	LHR	RPD	F1 (C6-C10)	2013/12/24	NC		%	40
			F1 (C6-C10) - BTEX	2013/12/24	NC		%	40
3467147	DTI	Matrix Spike	D10-Anthracene	2013/12/24		100	%	50 - 130
			D14-Terphenyl (FS)	2013/12/24		91	%	50 - 130
			D8-Acenaphthylene	2013/12/24		90	%	50 - 130
			Acenaphthene	2013/12/24		96	%	50 - 130
			Acenaphthylene	2013/12/24		104	%	50 - 130
			Anthracene	2013/12/24		110	%	50 - 130
			Benzo(a)anthracene	2013/12/24		113	%	50 - 130
			Benzo(a)pyrene	2013/12/24		101	%	50 - 130
			Benzo(b/j)fluoranthene	2013/12/24		95	%	50 - 130
			Benzo(g,h,i)perylene	2013/12/24		89	%	50 - 130
			Benzo(k)fluoranthene	2013/12/24		106	%	50 - 130
			Chrysene	2013/12/24		109	%	50 - 130
			Dibenz(a,h)anthracene	2013/12/24		75	%	50 - 130
			Fluoranthene	2013/12/24		105	%	50 - 130
			Fluorene	2013/12/24		94	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/12/24		97	%	50 - 130
			1-Methylnaphthalene	2013/12/24		84	%	50 - 130
			2-Methylnaphthalene	2013/12/24		81	%	50 - 130
			Naphthalene	2013/12/24		91	%	50 - 130
			Phenanthrene	2013/12/24		101	%	50 - 130
			Pyrene	2013/12/24		105	%	50 - 130
3467147	DTI	Spiked Blank	D10-Anthracene	2013/12/24		101	%	50 - 130
			D14-Terphenyl (FS)	2013/12/24		89	%	50 - 130
			D8-Acenaphthylene	2013/12/24		112	%	50 - 130
			Acenaphthene	2013/12/24		113	%	50 - 130
			Acenaphthylene	2013/12/24		107	%	50 - 130
			Anthracene	2013/12/24		110	%	50 - 130
			Benzo(a)anthracene	2013/12/24		113	%	50 - 130
			Benzo(a)pyrene	2013/12/24		96	%	50 - 130
			Benzo(b/j)fluoranthene	2013/12/24		95	%	50 - 130
			Benzo(g,h,i)perylene	2013/12/24		75	%	50 - 130
			Benzo(k)fluoranthene	2013/12/24		95	%	50 - 130
			Chrysene	2013/12/24		108	%	50 - 130
			Dibenz(a,h)anthracene	2013/12/24		64	%	50 - 130
			Fluoranthene	2013/12/24		107	%	50 - 130
			Fluorene	2013/12/24		98	%	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
			Indeno(1,2,3-cd)pyrene	2013/12/24		89	%	50 - 130
			1-Methylnaphthalene	2013/12/24		87	%	50 - 130
			2-Methylnaphthalene	2013/12/24		84	%	50 - 130
			Naphthalene	2013/12/24		95	%	50 - 130
			Phenanthrene	2013/12/24		105	%	50 - 130
			Pyrene	2013/12/24		106	%	50 - 130
3467147	DTI	Method Blank	D10-Anthracene	2013/12/24		101	%	50 - 130
			D14-Terphenyl (FS)	2013/12/24		90	%	50 - 130
			D8-Acenaphthylene	2013/12/24		88	%	50 - 130
			Acenaphthene	2013/12/24	ND, RDL=0.010		ug/L	
			Acenaphthylene	2013/12/24	ND, RDL=0.010		ug/L	
			Anthracene	2013/12/24	ND, RDL=0.010		ug/L	
			Benzo(a)anthracene	2013/12/24	ND, RDL=0.010		ug/L	
			Benzo(a)pyrene	2013/12/24	ND, RDL=0.010		ug/L	
			Benzo(b/j)fluoranthene	2013/12/24	ND, RDL=0.010		ug/L	
			Benzo(g,h,i)perylene	2013/12/24	ND, RDL=0.010		ug/L	
			Benzo(k)fluoranthene	2013/12/24	ND, RDL=0.010		ug/L	
			Chrysene	2013/12/24	ND, RDL=0.010		ug/L	
			Dibenz(a,h)anthracene	2013/12/24	ND, RDL=0.010		ug/L	
			Fluoranthene	2013/12/24	ND, RDL=0.010		ug/L	
			Fluorene	2013/12/24	ND, RDL=0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2013/12/24	ND, RDL=0.010		ug/L	
			1-Methylnaphthalene	2013/12/24	ND, RDL=0.010		ug/L	
			2-Methylnaphthalene	2013/12/24	ND, RDL=0.010		ug/L	
			Naphthalene	2013/12/24	ND, RDL=0.010		ug/L	
			Phenanthrene	2013/12/24	ND, RDL=0.010		ug/L	
			Pyrene	2013/12/24	ND, RDL=0.010		ug/L	
3467147	DTI	RPD [UJ0453-04]	Acenaphthene	2013/12/24	NC		%	30
			Acenaphthylene	2013/12/24	NC		%	30
			Anthracene	2013/12/24	NC		%	30
			Benzo(a)anthracene	2013/12/24	NC		%	30
			Benzo(a)pyrene	2013/12/24	NC		%	30
			Benzo(b/j)fluoranthene	2013/12/24	NC		%	30
			Benzo(g,h,i)perylene	2013/12/24	NC		%	30
			Benzo(k)fluoranthene	2013/12/24	NC		%	30

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Maxxam Job #: B3M0171
Report Date: 2013/12/30

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Chrysene	2013/12/24	NC		%	30
			Dibenz(a,h)anthracene	2013/12/24	NC		%	30
			Fluoranthene	2013/12/24	NC		%	30
			Fluorene	2013/12/24	NC		%	30
			Indeno(1,2,3-cd)pyrene	2013/12/24	NC		%	30
			1-Methylnaphthalene	2013/12/24	NC		%	30
			2-Methylnaphthalene	2013/12/24	NC		%	30
			Naphthalene	2013/12/24	NC		%	30
			Phenanthrene	2013/12/24	NC		%	30
			Pyrene	2013/12/24	NC		%	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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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 #: B3M0171
Report Date: 2013/12/30

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Scientific Services

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

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

Your Project #: MB403037

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2014/01/14

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B401974
Received: 2014/01/10, 10:18

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Cadmium - low level CCME - Dissolved	3	N/A	2014/01/11	AB SOP-00043	EPA 200.8
Elements by ICP - Dissolved	2	N/A	2014/01/11	AB SOP-00042	EPA 200.7
Elements by ICP - Dissolved	1	N/A	2014/01/13	AB SOP-00042	EPA 200.7
Elements by ICPMS - Dissolved	3	N/A	2014/01/10	AB SOP-00043	EPA 200.8

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

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Wendy Sears, Project manager
Email: WSears@maxxam.ca
Phone# (403) 291-3077

==========

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Total cover pages: 1

Maxxam Job #: B401974
Report Date: 2014/01/14

MAXXAM ANALYTICS
Client Project #: MB403037

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		IK4890	IK4891		IK4892		
Sampling Date		2014/01/08 12:00	2014/01/08 12:00		2014/01/08 09:30		
	UNITS	**13-231C (UM4245-04R)**	**2014-C (UM4246-04R)**	**RDL**	**13-234C (UM4247-04R)**	**RDL**	**QC Batch**
Low Level Elements							
Dissolved Cadmium (Cd)	ug/L	0.049	0.048	0.0050	0.018	0.0050	7346668
Elements							
Dissolved Aluminum (Al)	mg/L	0.016	0.0095	0.0030	0.036	0.0030	7346693
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	<0.00060	0.00060	7346693
Dissolved Arsenic (As)	mg/L	0.00022	0.00021	0.00020	0.0029	0.00020	7346693
Dissolved Barium (Ba)	mg/L	0.12	0.12	0.010	0.17	0.010	7347343
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	<0.0010	0.0010	7346693
Dissolved Boron (B)	mg/L	0.22	0.22	0.020	0.19	0.020	7347343
Dissolved Calcium (Ca)	mg/L	380	410	0.30	43	0.30	7347343
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	<0.0010	0.0010	7346693
Dissolved Cobalt (Co)	mg/L	0.0023	0.0017	0.00030	0.0019	0.00030	7346693
Dissolved Copper (Cu)	mg/L	0.0023	0.0022	0.00020	<0.00020	0.00020	7346693
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	0.16	0.060	7347343
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	<0.00020	0.00020	7346693
Dissolved Lithium (Li)	mg/L	<0.020	0.024	0.020	<0.020	0.020	7347343
Dissolved Magnesium (Mg)	mg/L	140	140	0.20	20	0.20	7347343
Dissolved Manganese (Mn)	mg/L	0.049	0.050	0.0040	0.15	0.0040	7347343
Dissolved Molybdenum (Mo)	mg/L	0.0050	0.0048	0.00020	0.035	0.00020	7346693
Dissolved Nickel (Ni)	mg/L	0.0062	0.0059	0.00050	0.00081	0.00050	7346693
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	<0.10	0.10	7347343
Dissolved Potassium (K)	mg/L	31	31	0.30	13	0.30	7347343
Dissolved Selenium (Se)	mg/L	0.00064	0.00064	0.00020	0.00096	0.00020	7346693
Dissolved Silicon (Si)	mg/L	6.5	6.6	0.10	6.1	0.10	7347343
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	<0.00010	0.00010	7346693
Dissolved Sodium (Na)	mg/L	1100 (1)	950 (1)	2.5	120	0.50	7347343
Dissolved Strontium (Sr)	mg/L	7.1 (1)	6.4 (1)	0.10	0.83	0.020	7347343
Dissolved Sulphur (S)	mg/L	140	140	0.20	3.9	0.20	7347343
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	<0.00020	0.00020	7346693
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	<0.0010	0.0010	7346693
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	0.0015	0.0010	7346693
Dissolved Uranium (U)	mg/L	0.0062	0.0063	0.00010	0.0022	0.00010	7346693
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	<0.0010	0.0010	7346693

RDL = Reportable Detection Limit
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Maxxam Job #: B401974
Report Date: 2014/01/14

MAXXAM ANALYTICS
Client Project #: MB403037

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		IK4890	IK4891		IK4892		
Sampling Date		2014/01/08 12:00	2014/01/08 12:00		2014/01/08 09:30		
	UNITS	**13-231C (UM4245-04R)**	**2014-C (UM4246-04R)**	**RDL**	**13-234C (UM4247-04R)**	**RDL**	**QC Batch**
Dissolved Zinc (Zn)	mg/L	0.0049	<0.0030	0.0030	<0.0030	0.0030	7346693

RDL = Reportable Detection Limit

Maxxam Job #: B401974
Report Date: 2014/01/14

MAXXAM ANALYTICS
Client Project #: MB403037

Package 1	-0.3°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: MB403037
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: CB401974

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7346693	KA3	Matrix Spike	Dissolved Aluminum (Al)	2014/01/10		86	%	80 - 120
			Dissolved Antimony (Sb)	2014/01/10		78 (1)	%	80 - 120
			Dissolved Arsenic (As)	2014/01/10		90	%	80 - 120
			Dissolved Beryllium (Be)	2014/01/10		97	%	80 - 120
			Dissolved Chromium (Cr)	2014/01/10		90	%	80 - 120
			Dissolved Cobalt (Co)	2014/01/10		89	%	80 - 120
			Dissolved Copper (Cu)	2014/01/10		88	%	80 - 120
			Dissolved Lead (Pb)	2014/01/10		84	%	80 - 120
			Dissolved Molybdenum (Mo)	2014/01/10		92	%	80 - 120
			Dissolved Nickel (Ni)	2014/01/10		89	%	80 - 120
			Dissolved Selenium (Se)	2014/01/10		91	%	80 - 120
			Dissolved Silver (Ag)	2014/01/10		89	%	80 - 120
			Dissolved Thallium (Tl)	2014/01/10		85	%	80 - 120
			Dissolved Tin (Sn)	2014/01/10		83	%	80 - 120
			Dissolved Titanium (Ti)	2014/01/10		91	%	80 - 120
			Dissolved Uranium (U)	2014/01/10		88	%	80 - 120
			Dissolved Vanadium (V)	2014/01/10		93	%	80 - 120
			Dissolved Zinc (Zn)	2014/01/10		90	%	80 - 120
		Spiked Blank	Dissolved Aluminum (Al)	2014/01/10		86	%	80 - 120
			Dissolved Antimony (Sb)	2014/01/10		81	%	80 - 120
			Dissolved Arsenic (As)	2014/01/10		89	%	80 - 120
			Dissolved Beryllium (Be)	2014/01/10		95	%	80 - 120
			Dissolved Chromium (Cr)	2014/01/10		89	%	80 - 120
			Dissolved Cobalt (Co)	2014/01/10		90	%	80 - 120
			Dissolved Copper (Cu)	2014/01/10		93	%	80 - 120
			Dissolved Lead (Pb)	2014/01/10		86	%	80 - 120
			Dissolved Molybdenum (Mo)	2014/01/10		90	%	80 - 120
			Dissolved Nickel (Ni)	2014/01/10		91	%	80 - 120
			Dissolved Selenium (Se)	2014/01/10		90	%	80 - 120
			Dissolved Silver (Ag)	2014/01/10		87	%	80 - 120
			Dissolved Thallium (Tl)	2014/01/10		87	%	80 - 120
			Dissolved Tin (Sn)	2014/01/10		84	%	80 - 120
			Dissolved Titanium (Ti)	2014/01/10		92	%	80 - 120
			Dissolved Uranium (U)	2014/01/10		87	%	80 - 120
			Dissolved Vanadium (V)	2014/01/10		91	%	80 - 120
			Dissolved Zinc (Zn)	2014/01/10		93	%	80 - 120
		Method Blank	Dissolved Aluminum (Al)	2014/01/10	<0.0030		mg/L	
			Dissolved Antimony (Sb)	2014/01/10	<0.00060		mg/L	
			Dissolved Arsenic (As)	2014/01/10	<0.00020		mg/L	
			Dissolved Beryllium (Be)	2014/01/10	<0.0010		mg/L	
			Dissolved Chromium (Cr)	2014/01/10	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2014/01/10	<0.00030		mg/L	
			Dissolved Copper (Cu)	2014/01/10	<0.00020		mg/L	
			Dissolved Lead (Pb)	2014/01/10	<0.00020		mg/L	
			Dissolved Molybdenum (Mo)	2014/01/10	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2014/01/10	<0.00050		mg/L	
			Dissolved Selenium (Se)	2014/01/10	<0.00020		mg/L	
			Dissolved Silver (Ag)	2014/01/10	<0.00010		mg/L	
			Dissolved Thallium (Tl)	2014/01/10	<0.00020		mg/L	
			Dissolved Tin (Sn)	2014/01/10	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2014/01/10	<0.0010		mg/L	
			Dissolved Uranium (U)	2014/01/10	<0.00010		mg/L	
			Dissolved Vanadium (V)	2014/01/10	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2014/01/10	<0.0030		mg/L	
		RPD	Dissolved Aluminum (Al)	2014/01/10	NC		%	20

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: MB403037
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB401974

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7346693	KA3	RPD	Dissolved Antimony (Sb)	2014/01/10	NC		%	20
			Dissolved Arsenic (As)	2014/01/10	NC		%	20
			Dissolved Beryllium (Be)	2014/01/10	NC		%	20
			Dissolved Chromium (Cr)	2014/01/10	NC		%	20
			Dissolved Cobalt (Co)	2014/01/10	NC		%	20
			Dissolved Copper (Cu)	2014/01/10	NC		%	20
			Dissolved Lead (Pb)	2014/01/10	NC		%	20
			Dissolved Molybdenum (Mo)	2014/01/10	5.1		%	20
			Dissolved Nickel (Ni)	2014/01/10	NC		%	20
			Dissolved Selenium (Se)	2014/01/10	NC		%	20
			Dissolved Silver (Ag)	2014/01/10	NC		%	20
			Dissolved Thallium (Tl)	2014/01/10	NC		%	20
			Dissolved Tin (Sn)	2014/01/10	NC		%	20
			Dissolved Titanium (Ti)	2014/01/10	NC		%	20
			Dissolved Uranium (U)	2014/01/10	1.1		%	20
			Dissolved Vanadium (V)	2014/01/10	NC		%	20
			Dissolved Zinc (Zn)	2014/01/10	NC		%	20
7347343	STI	Matrix Spike	Dissolved Barium (Ba)	2014/01/11		98	%	80 - 120
			Dissolved Boron (B)	2014/01/11		109	%	80 - 120
			Dissolved Calcium (Ca)	2014/01/11		NC	%	80 - 120
			Dissolved Iron (Fe)	2014/01/11		101	%	80 - 120
			Dissolved Lithium (Li)	2014/01/11		108	%	80 - 120
			Dissolved Magnesium (Mg)	2014/01/11		NC	%	80 - 120
			Dissolved Manganese (Mn)	2014/01/11		100	%	80 - 120
			Dissolved Phosphorus (P)	2014/01/11		106	%	80 - 120
			Dissolved Potassium (K)	2014/01/11		108	%	80 - 120
			Dissolved Silicon (Si)	2014/01/11		100	%	80 - 120
			Dissolved Sodium (Na)	2014/01/11		NC	%	80 - 120
			Dissolved Strontium (Sr)	2014/01/11		NC	%	80 - 120
		Spiked Blank	Dissolved Barium (Ba)	2014/01/11		100	%	80 - 120
			Dissolved Boron (B)	2014/01/11		106	%	80 - 120
			Dissolved Calcium (Ca)	2014/01/11		97	%	80 - 120
			Dissolved Iron (Fe)	2014/01/11		102	%	80 - 120
			Dissolved Lithium (Li)	2014/01/11		108	%	80 - 120
			Dissolved Magnesium (Mg)	2014/01/11		107	%	80 - 120
			Dissolved Manganese (Mn)	2014/01/11		103	%	80 - 120
			Dissolved Phosphorus (P)	2014/01/11		99	%	80 - 120
			Dissolved Potassium (K)	2014/01/11		109	%	80 - 120
			Dissolved Silicon (Si)	2014/01/11		103	%	80 - 120
			Dissolved Sodium (Na)	2014/01/11		106	%	80 - 120
			Dissolved Strontium (Sr)	2014/01/11		103	%	80 - 120
		Method Blank	Dissolved Barium (Ba)	2014/01/11	<0.010		mg/L	
			Dissolved Boron (B)	2014/01/11	<0.020		mg/L	
			Dissolved Calcium (Ca)	2014/01/11	<0.30		mg/L	
			Dissolved Iron (Fe)	2014/01/11	<0.060		mg/L	
			Dissolved Lithium (Li)	2014/01/11	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2014/01/11	<0.20		mg/L	
			Dissolved Manganese (Mn)	2014/01/11	<0.0040		mg/L	
			Dissolved Phosphorus (P)	2014/01/11	<0.10		mg/L	
			Dissolved Potassium (K)	2014/01/11	0.30, RDL=0.30		mg/L	
			Dissolved Silicon (Si)	2014/01/11	<0.10		mg/L	
			Dissolved Sodium (Na)	2014/01/11	<0.50		mg/L	
			Dissolved Strontium (Sr)	2014/01/11	<0.020		mg/L	
			Dissolved Sulphur (S)	2014/01/11	<0.20		mg/L	
		RPD	Dissolved Barium (Ba)	2014/01/11	NC		%	20

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: MB403037
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB401974

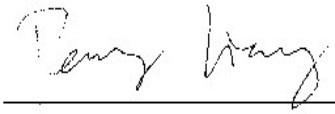
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7347343	STI	RPD	Dissolved Boron (B)	2014/01/11	1.3		%	20
			Dissolved Calcium (Ca)	2014/01/11	0.8		%	20
			Dissolved Iron (Fe)	2014/01/11	NC		%	20
			Dissolved Lithium (Li)	2014/01/11	2.9		%	20
			Dissolved Magnesium (Mg)	2014/01/11	1.0		%	20
			Dissolved Manganese (Mn)	2014/01/11	0.4		%	20
			Dissolved Phosphorus (P)	2014/01/11	NC		%	20
			Dissolved Potassium (K)	2014/01/11	3.0		%	20
			Dissolved Silicon (Si)	2014/01/11	0.5		%	20
			Dissolved Sodium (Na)	2014/01/11	1.6		%	20
			Dissolved Strontium (Sr)	2014/01/11	0.7		%	20
			Dissolved Sulphur (S)	2014/01/11	3.9		%	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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Validation Signature Page

Maxxam Job #: B401974

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



Peng Liang, Analyst II

==========

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140.

MAXXAM ANALYTICS
32 Colonnade Unit 1000
Nepean, Ontario, K2E 7J6
Phone: (613) 274-0573
Fax: (613) 274-0574

Stantec Consulting Ltd - Ottawa
Maxxam PM Parnian Baber

SUBCONTRACTING REQUEST FORM

To: Campo to Calgary Subcontract

Job# B403037

☐ Yes ☐ No International Sample/BioHazard (if yes, add copy of Movement Cert., heat treat is required prior to disposal)
☐ Yes ☐ No Special Protocol (if yes, Protocol _____)

Sample ID	Matrix	Test(s) Required	Container	Date Sampled	Date Required
UM4245-04R \ 13-231C	W	CCME Metals (low Level), dissolved	1(DISM)	2014/01/08 12:00	2014/01/16
UM4246-04R \ 2014-C	W	CCME Metals (low Level), dissolved	1(DISM)	2014/01/08 12:00	2014/01/16
UM4247-04R \ 13-234C	W	CCME Metals (low Level), dissolved	1(DISM)	2014/01/08 09:30	2014/01/16

	Temp. 1	Temp. 2	Temp. 3			
Cooler #1	0	0	-1	Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #2				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #3				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO

Receiving Maxxam Location: Campo to Calgary Subcontract JOB # _____

Relinquished by (Sign) _____ (Print) C. Bergeron Date and Time 2014/01/09 11:15

Received by (Sign) _____ (Print) SHERRY WANG Date and Time 2014/01/10 10:18

NOTES:
1) Please call us if due date cannot be met. Please reference Sample ID on your report.
2) Include copy of this completed form, Client COC & signed final report to **scontractor@maxxamanalytics.com**

Reporting Requirements:
National:
Regional:

10-Jan-14 10:18
Carmen McKay
B401974
AT8 INS-0009

SHIPPING INSTRUCTIONS
☐ Ship Immediately (highlight Yellow)
☐ Requires 9am
☐ Requires Sat. Delivery
☐ Regular Ship next available day
☐ Ship Cold
☐ Ship Room Temp
☐ Ship Frozen
☐ COC Must be Attached
Sender (Print) _____ Initial _____

SHIPPING DEPARTMENT CHECKLIST
☐ Correct Shipping location
☐ Correct Sample Ids (Paperwork vs Bottles)
☐ Yes ☐ No Special-Cooler, Ice, Tape-custody seal, Date&Sign
Date Shipped _____ Number of coolers _____
Shipper (Print) _____ Initial _____

Your Project #: DB404748
Your C.O.C. #: 1 of 1

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2014/01/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B402745
Received: 2014/01/14, 10:00

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Cadmium - low level CCME - Dissolved	3	N/A	2014/01/16	AB SOP-00043	EPA 200.8
Elements by ICP - Dissolved	3	N/A	2014/01/16	AB SOP-00042	EPA 200.7
Elements by ICPMS - Dissolved	3	N/A	2014/01/15	AB SOP-00043	EPA 200.8

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

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Wendy Sears, Project manager
Email: WSears@maxxam.ca
Phone# (403) 291-3077

==========

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.

Total cover pages: 1

Maxxam Job #: B402745
Report Date: 2014/01/16

MAXXAM ANALYTICS
Client Project #: DB404748

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		IL0937	IL0938	IL0939		
Sampling Date		2014/01/10 10:30	2014/01/10 10:30	2014/01/10 12:00		
COC Number		1 of 1	1 of 1	1 of 1		
	UNITS	**2014-D (UN2443-04R)**	**13-205B (UN2444-04R)**	**13-104C (UN2445-04R)**	**RDL**	**QC Batch**
Low Level Elements						
Dissolved Cadmium (Cd)	ug/L	0.0088	0.0063	0.025	0.0050	7348894
Elements						
Dissolved Aluminum (Al)	mg/L	<0.0030	<0.0030	0.0050	0.0030	7350410
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	<0.00060	0.00060	7350410
Dissolved Arsenic (As)	mg/L	<0.00020	<0.00020	0.00085	0.00020	7350410
Dissolved Barium (Ba)	mg/L	1.2	1.2	0.14	0.010	7351552
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	<0.0010	0.0010	7350410
Dissolved Boron (B)	mg/L	0.076	0.074	0.051	0.020	7351552
Dissolved Calcium (Ca)	mg/L	130	130	220	0.30	7351552
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	<0.0010	0.0010	7350410
Dissolved Cobalt (Co)	mg/L	0.00081	0.0012	0.0012	0.00030	7350410
Dissolved Copper (Cu)	mg/L	0.00040	0.00047	<0.00020	0.00020	7350410
Dissolved Iron (Fe)	mg/L	1.1	1.1	1.4	0.060	7351552
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	<0.00020	0.00020	7350410
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	<0.020	0.020	7351552
Dissolved Magnesium (Mg)	mg/L	28	28	89	0.20	7351552
Dissolved Manganese (Mn)	mg/L	0.19	0.19	0.29	0.0040	7351552
Dissolved Molybdenum (Mo)	mg/L	0.0026	0.0028	0.029	0.00020	7350410
Dissolved Nickel (Ni)	mg/L	0.00088	0.00095	0.0033	0.00050	7350410
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	<0.10	0.10	7351552
Dissolved Potassium (K)	mg/L	9.5	9.4	16	0.30	7351552
Dissolved Selenium (Se)	mg/L	<0.00020	<0.00020	0.00029	0.00020	7350410
Dissolved Silicon (Si)	mg/L	12	12	5.0	0.10	7351552
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	<0.00010	0.00010	7350410
Dissolved Sodium (Na)	mg/L	140	140	300	0.50	7351552
Dissolved Strontium (Sr)	mg/L	1.1	1.1	1.9	0.020	7351552
Dissolved Sulphur (S)	mg/L	26	26	38	0.20	7351552
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	<0.00020	0.00020	7350410
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	<0.0010	0.0010	7350410
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	<0.0010	0.0010	7350410
Dissolved Uranium (U)	mg/L	0.00031	0.00033	0.00076	0.00010	7350410
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	<0.0010	0.0010	7350410

RDL = Reportable Detection Limit

Maxxam Job #: B402745
Report Date: 2014/01/16

MAXXAM ANALYTICS
Client Project #: DB404748

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		IL0937	IL0938	IL0939		
Sampling Date		2014/01/10 10:30	2014/01/10 10:30	2014/01/10 12:00		
COC Number		1 of 1	1 of 1	1 of 1		
	UNITS	**2014-D (UN2443-04R)**	**13-205B (UN2444-04R)**	**13-104C (UN2445-04R)**	**RDL**	**QC Batch**
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	0.016	0.0030	7350410

RDL = Reportable Detection Limit

Maxxam Job #: B402745
Report Date: 2014/01/16

MAXXAM ANALYTICS
Client Project #: DB404748

Package 1	2.3°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: DB404748
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: CB402745

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7350410	TDB	Matrix Spike	Dissolved Aluminum (Al)	2014/01/15		114	%	80 - 120
			Dissolved Antimony (Sb)	2014/01/15		93	%	80 - 120
			Dissolved Arsenic (As)	2014/01/15		99	%	80 - 120
			Dissolved Beryllium (Be)	2014/01/15		112	%	80 - 120
			Dissolved Chromium (Cr)	2014/01/15		98	%	80 - 120
			Dissolved Cobalt (Co)	2014/01/15		96	%	80 - 120
			Dissolved Copper (Cu)	2014/01/15		99	%	80 - 120
			Dissolved Lead (Pb)	2014/01/15		99	%	80 - 120
			Dissolved Molybdenum (Mo)	2014/01/15		101	%	80 - 120
			Dissolved Nickel (Ni)	2014/01/15		100	%	80 - 120
			Dissolved Selenium (Se)	2014/01/15		101	%	80 - 120
			Dissolved Silver (Ag)	2014/01/15		90	%	80 - 120
			Dissolved Thallium (Tl)	2014/01/15		103	%	80 - 120
			Dissolved Tin (Sn)	2014/01/15		96	%	80 - 120
			Dissolved Titanium (Ti)	2014/01/15		100	%	80 - 120
			Dissolved Uranium (U)	2014/01/15		103	%	80 - 120
			Dissolved Vanadium (V)	2014/01/15		99	%	80 - 120
			Dissolved Zinc (Zn)	2014/01/15		107	%	80 - 120
		Spiked Blank	Dissolved Aluminum (Al)	2014/01/15		113	%	80 - 120
			Dissolved Antimony (Sb)	2014/01/15		92	%	80 - 120
			Dissolved Arsenic (As)	2014/01/15		95	%	80 - 120
			Dissolved Beryllium (Be)	2014/01/15		108	%	80 - 120
			Dissolved Chromium (Cr)	2014/01/15		96	%	80 - 120
			Dissolved Cobalt (Co)	2014/01/15		94	%	80 - 120
			Dissolved Copper (Cu)	2014/01/15		97	%	80 - 120
			Dissolved Lead (Pb)	2014/01/15		96	%	80 - 120
			Dissolved Molybdenum (Mo)	2014/01/15		99	%	80 - 120
			Dissolved Nickel (Ni)	2014/01/15		98	%	80 - 120
			Dissolved Selenium (Se)	2014/01/15		94	%	80 - 120
			Dissolved Silver (Ag)	2014/01/15		88	%	80 - 120
			Dissolved Thallium (Tl)	2014/01/15		98	%	80 - 120
			Dissolved Tin (Sn)	2014/01/15		98	%	80 - 120
			Dissolved Titanium (Ti)	2014/01/15		95	%	80 - 120
			Dissolved Uranium (U)	2014/01/15		100	%	80 - 120
			Dissolved Vanadium (V)	2014/01/15		97	%	80 - 120
			Dissolved Zinc (Zn)	2014/01/15		97	%	80 - 120
		Method Blank	Dissolved Aluminum (Al)	2014/01/15	<0.0030		mg/L	
			Dissolved Antimony (Sb)	2014/01/15	<0.00060		mg/L	
			Dissolved Arsenic (As)	2014/01/15	<0.00020		mg/L	
			Dissolved Beryllium (Be)	2014/01/15	<0.0010		mg/L	
			Dissolved Chromium (Cr)	2014/01/15	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2014/01/15	<0.00030		mg/L	
			Dissolved Copper (Cu)	2014/01/15	<0.00020		mg/L	
			Dissolved Lead (Pb)	2014/01/15	<0.00020		mg/L	
			Dissolved Molybdenum (Mo)	2014/01/15	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2014/01/15	<0.00050		mg/L	
			Dissolved Selenium (Se)	2014/01/15	<0.00020		mg/L	
			Dissolved Silver (Ag)	2014/01/15	<0.00010		mg/L	
			Dissolved Thallium (Tl)	2014/01/15	<0.00020		mg/L	
			Dissolved Tin (Sn)	2014/01/15	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2014/01/15	<0.0010		mg/L	
			Dissolved Uranium (U)	2014/01/15	<0.00010		mg/L	
			Dissolved Vanadium (V)	2014/01/15	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2014/01/15	<0.0030		mg/L	
		RPD	Dissolved Aluminum (Al)	2014/01/15	NC		%	20

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: DB404748
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB402745

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7350410	TDB	RPD	Dissolved Antimony (Sb)	2014/01/15	NC		%	20
			Dissolved Arsenic (As)	2014/01/15	NC		%	20
			Dissolved Beryllium (Be)	2014/01/15	NC		%	20
			Dissolved Chromium (Cr)	2014/01/15	NC		%	20
			Dissolved Cobalt (Co)	2014/01/15	NC		%	20
			Dissolved Copper (Cu)	2014/01/15	NC		%	20
			Dissolved Lead (Pb)	2014/01/15	NC		%	20
			Dissolved Molybdenum (Mo)	2014/01/15	NC		%	20
			Dissolved Nickel (Ni)	2014/01/15	NC		%	20
			Dissolved Selenium (Se)	2014/01/15	NC		%	20
			Dissolved Silver (Ag)	2014/01/15	NC		%	20
			Dissolved Thallium (Tl)	2014/01/15	NC		%	20
			Dissolved Tin (Sn)	2014/01/15	NC		%	20
			Dissolved Titanium (Ti)	2014/01/15	NC		%	20
			Dissolved Uranium (U)	2014/01/15	NC		%	20
			Dissolved Vanadium (V)	2014/01/15	NC		%	20
			Dissolved Zinc (Zn)	2014/01/15	NC		%	20
7351552	STI	Matrix Spike	Dissolved Barium (Ba)	2014/01/16		97	%	80 - 120
			Dissolved Boron (B)	2014/01/16		105	%	80 - 120
			Dissolved Calcium (Ca)	2014/01/16		NC	%	80 - 120
			Dissolved Iron (Fe)	2014/01/16		NC	%	80 - 120
			Dissolved Lithium (Li)	2014/01/16		99	%	80 - 120
			Dissolved Magnesium (Mg)	2014/01/16		NC	%	80 - 120
			Dissolved Manganese (Mn)	2014/01/16		NC	%	80 - 120
			Dissolved Phosphorus (P)	2014/01/16		108	%	80 - 120
			Dissolved Potassium (K)	2014/01/16		106	%	80 - 120
			Dissolved Silicon (Si)	2014/01/16		NC	%	80 - 120
			Dissolved Sodium (Na)	2014/01/16		NC	%	80 - 120
			Dissolved Strontium (Sr)	2014/01/16		NC	%	80 - 120
		Spiked Blank	Dissolved Barium (Ba)	2014/01/16		96	%	80 - 120
			Dissolved Boron (B)	2014/01/16		99	%	80 - 120
			Dissolved Calcium (Ca)	2014/01/16		100	%	80 - 120
			Dissolved Iron (Fe)	2014/01/16		99	%	80 - 120
			Dissolved Lithium (Li)	2014/01/16		96	%	80 - 120
			Dissolved Magnesium (Mg)	2014/01/16		101	%	80 - 120
			Dissolved Manganese (Mn)	2014/01/16		98	%	80 - 120
			Dissolved Phosphorus (P)	2014/01/16		97	%	80 - 120
			Dissolved Potassium (K)	2014/01/16		104	%	80 - 120
			Dissolved Silicon (Si)	2014/01/16		96	%	80 - 120
			Dissolved Sodium (Na)	2014/01/16		99	%	80 - 120
			Dissolved Strontium (Sr)	2014/01/16		95	%	80 - 120
		Method Blank	Dissolved Barium (Ba)	2014/01/16	<0.010		mg/L	
			Dissolved Boron (B)	2014/01/16	<0.020		mg/L	
			Dissolved Calcium (Ca)	2014/01/16	<0.30		mg/L	
			Dissolved Iron (Fe)	2014/01/16	<0.060		mg/L	
			Dissolved Lithium (Li)	2014/01/16	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2014/01/16	<0.20		mg/L	
			Dissolved Manganese (Mn)	2014/01/16	<0.0040		mg/L	
			Dissolved Phosphorus (P)	2014/01/16	<0.10		mg/L	
			Dissolved Potassium (K)	2014/01/16	<0.30		mg/L	
			Dissolved Silicon (Si)	2014/01/16	<0.10		mg/L	
			Dissolved Sodium (Na)	2014/01/16	<0.50		mg/L	
			Dissolved Strontium (Sr)	2014/01/16	<0.020		mg/L	
			Dissolved Sulphur (S)	2014/01/16	<0.20		mg/L	
		RPD	Dissolved Barium (Ba)	2014/01/16	0.1		%	20

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: DB404748
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB402745

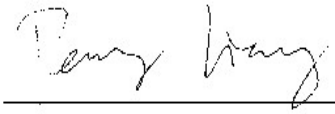
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7351552	STI	RPD	Dissolved Boron (B)	2014/01/16	NC		%	20
			Dissolved Calcium (Ca)	2014/01/16	0.7		%	20
			Dissolved Iron (Fe)	2014/01/16	0.3		%	20
			Dissolved Lithium (Li)	2014/01/16	NC		%	20
			Dissolved Magnesium (Mg)	2014/01/16	0.7		%	20
			Dissolved Manganese (Mn)	2014/01/16	0.5		%	20
			Dissolved Phosphorus (P)	2014/01/16	NC		%	20
			Dissolved Potassium (K)	2014/01/16	0.9		%	20
			Dissolved Silicon (Si)	2014/01/16	0.3		%	20
			Dissolved Sodium (Na)	2014/01/16	0.02		%	20
			Dissolved Strontium (Sr)	2014/01/16	0.07		%	20
			Dissolved Sulphur (S)	2014/01/16	0.9		%	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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B402745

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



Peng Liang, Analyst II

==========

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1 - 209

MAXXAM ANALYTICS
32 Colonnade Unit 1000
Nepean, Ontario, K2E 7J6
Phone: (613) 274-0573
Fax: (613) 274-0574

Maxxam

SUBCONTRACTING REQUEST FORM

Stantec Consulting Ltd - Ottawa
Maxxam PM Parnian Baber

To: Campo to Calgary Subcontract

Job# B404748

☐ Yes ☐ No International Sample/BioHazard (if yes, add copy of Movement Cert., heat treat is required prior to disposal)
☐ Yes ☐ No Special Protocol (if yes, Protocol _____)

Sample ID	Matrix	Test(s) Required	Container	Date Sampled	Date Required
UN2443-04R \ 2014-D	W	CCME Metals (low Level), dissolved	1(DISM)	2014/01/10 10:30	2014/01/20
UN2444-04R \ 13-205B	W	CCME Metals (low Level), dissolved	1(DISM)	2014/01/10 10:30	2014/01/20
UN2445-04R \ 13-104C	W	CCME Metals (low Level), dissolved	1(DISM)	2014/01/10 12:00	2014/01/20

	Temp. 1	Temp. 2	Temp. 3			
Cooler #1	2	2	3	Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #2				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #3				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO

Receiving Maxxam Location: Campo to Calgary Subcontract JOB # _____

Relinquished by (Sign) Kelsey Pilon (Print) Kelsey Pilon Date and Time 2014/01/13 11:35

Received by (Sign) Jasbirjit Kaur (Print) JASBIRJIT KAUR Date and Time 2014/01/14 10:00

NOTES:
1) Please call us if due date cannot be met. Please reference Sample ID on your report.
2) Include copy of this completed form, Client COC & signed final report to **scontractor@maxxamanalytics.com**

14-Jan-14 10:00

Reporting Requirements:
National:
Regional:

B402745
JF9

INS-0110

SHIPPING INSTRUCTIONS

☐ Ship Immediately (highlight Yellow)
☐ Requires 9am
☐ Requires Sat. Delivery
☐ Regular Ship next available day
☐ Ship Cold
☐ Ship Room Temp
☐ Ship Frozen
☐ COC Must be Attached

Sender (Print) _____ Initial _____

SHIPPING DEPARTMENT CHECKLIST

☐ Correct Shipping location
☐ Correct Sample Ids (Paperwork vs Bottles)
☐ Yes ☐ No Special-Cooler, Ice, Tape-custody seal, Date&Sign
Date Shipped _____ Number of coolers _____
Shipper (Print) _____ Initial _____

Success Through Science®

Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: 400.103
Your C.O.C. #: 44650303, 446503-03-01

Attention:Jill Peters-Dechman

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2014/01/20
Report #: R2781962
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B404748
Received: 2014/01/13, 10:28

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	3	N/A	2014/01/16	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum	3	N/A	2014/01/20	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Water	3	N/A	2014/01/14	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	2014/01/14	2014/01/14	OTT SOP-00001	CCME Hydrocarbons
PAH Compounds in Water by GC/MS (SIM) (1)	3	2014/01/15	2014/01/16	CAM SOP-00318	EPA 8270
Volatile Organic Compounds in Water	3	N/A	2014/01/17	OTT SOP-00005	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

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

(1) This test was performed by Maxxam Analytics Mississauga

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

Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: 400.103
Your C.O.C. #: 44650303, 446503-03-01

Attention:Jill Peters-Dechman

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2014/01/20
Report #: R2781962
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B404748
Received: 2014/01/13, 10:28

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573
==========
This report has been generated and distributed using a secure automated process.
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 #: B404748
Report Date: 2014/01/20

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		UN2443	UN2444	UN2444	UN2445		
Sampling Date		2014/01/10 10:30	2014/01/10 10:30	2014/01/10 10:30	2014/01/10 12:00		
COC Number		446503-03-01	446503-03-01	446503-03-01	446503-03-01		
	Units	2014-D	13-205B	13-205B Lab-Dup	13-104C	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	ND	ND		ND	0.014	3480008
Polyaromatic Hydrocarbons							
Acenaphthene	ug/L	ND	ND	ND	ND	0.010	3483068
Acenaphthylene	ug/L	ND	ND	ND	ND	0.010	3483068
Anthracene	ug/L	ND	ND	ND	ND	0.010	3483068
Benzo(a)anthracene	ug/L	ND	ND	ND	ND	0.010	3483068
Benzo(a)pyrene	ug/L	ND	ND	ND	ND	0.010	3483068
Benzo(b/j)fluoranthene	ug/L	ND	ND	ND	ND	0.010	3483068
Benzo(g,h,i)perylene	ug/L	ND	ND	ND	ND	0.010	3483068
Benzo(k)fluoranthene	ug/L	ND	ND	ND	ND	0.010	3483068
Chrysene	ug/L	ND	ND	ND	ND	0.010	3483068
Dibenz(a,h)anthracene	ug/L	ND	ND	ND	ND	0.010	3483068
Fluoranthene	ug/L	ND	ND	ND	ND	0.010	3483068
Fluorene	ug/L	ND	ND	ND	ND	0.010	3483068
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	ND	ND	0.010	3483068
1-Methylnaphthalene	ug/L	ND	ND	ND	ND	0.010	3483068
2-Methylnaphthalene	ug/L	ND	ND	ND	ND	0.010	3483068
Naphthalene	ug/L	0.011	0.011	ND	ND	0.010	3483068
Phenanthrene	ug/L	ND	ND	ND	ND	0.010	3483068
Pyrene	ug/L	ND	ND	ND	ND	0.010	3483068
Surrogate Recovery (%)							
D10-Anthracene	%	92	90	87	81		3483068
D14-Terphenyl (FS)	%	86	90	81	79		3483068
D8-Acenaphthylene	%	87	87	81	73		3483068

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Maxxam Job #: B404748
Report Date: 2014/01/20

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

O'REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		UN2443	UN2443	UN2444	UN2445		
Sampling Date		2014/01/10 10:30	2014/01/10 10:30	2014/01/10 10:30	2014/01/10 12:00		
COC Number		446503-03-01	446503-03-01	446503-03-01	446503-03-01		
	Units	2014-D	2014-D Lab-Dup	13-205B	13-104C	RDL	QC Batch
BTEX & F1 Hydrocarbons							
F1 (C6-C10)	ug/L	ND		ND	ND	25	3481388
F1 (C6-C10) - BTEX	ug/L	ND		ND	ND	25	3481388
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	ND	ND	100	3480930
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	ND	ND	100	3480930
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	ND	ND	100	3480930
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes		3480930
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	95		91	86		3481388
4-Bromofluorobenzene	%	114		106	109		3481388
D10-Ethylbenzene	%	112		88	110		3481388
D4-1,2-Dichloroethane	%	95		93	89		3481388
o-Terphenyl	%	85	84	80	81		3480930

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

O'REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		UN2443	UN2443	UN2444	UN2445		
Sampling Date		2014/01/10 10:30	2014/01/10 10:30	2014/01/10 10:30	2014/01/10 12:00		
COC Number		446503-03-01	446503-03-01	446503-03-01	446503-03-01		
	Units	2014-D	2014-D Lab-Dup	13-205B	13-104C	RDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/L	ND		ND	ND	0.28	3480009
Volatile Organics							
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	ND	ND	0.50	3485557
Hexane	ug/L	ND	ND	ND	ND	0.50	3485557
Acetone (2-Propanone)	ug/L	ND	ND	ND	ND	10	3485557
Benzene	ug/L	ND	ND	ND	ND	0.10	3485557
Bromodichloromethane	ug/L	ND	ND	ND	ND	0.10	3485557
Bromoform	ug/L	ND	ND	ND	ND	0.20	3485557
Bromomethane	ug/L	ND	ND	ND	ND	0.50	3485557
Carbon Tetrachloride	ug/L	ND	ND	ND	ND	0.10	3485557
Chlorobenzene	ug/L	ND	ND	ND	ND	0.10	3485557
Chloroform	ug/L	1.0	1.1	1.0	ND	0.10	3485557
Dibromochloromethane	ug/L	ND	ND	ND	ND	0.20	3485557
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	0.20	3485557
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	0.20	3485557
1,4-Dichlorobenzene	ug/L	ND	ND	ND	ND	0.20	3485557
1,1-Dichloroethane	ug/L	ND	ND	ND	ND	0.10	3485557
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	0.20	3485557
1,1-Dichloroethylene	ug/L	ND	ND	ND	ND	0.10	3485557
cis-1,2-Dichloroethylene	ug/L	ND	ND	ND	ND	0.10	3485557
trans-1,2-Dichloroethylene	ug/L	ND	ND	ND	ND	0.10	3485557
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	0.10	3485557
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	0.20	3485557
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	0.20	3485557
Ethylbenzene	ug/L	ND	ND	ND	ND	0.10	3485557
Ethylene Dibromide	ug/L	ND	ND	ND	ND	0.20	3485557
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	ND	ND	0.50	3485557
Methyl Isobutyl Ketone	ug/L	ND	ND	ND	ND	5.0	3485557
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	ND	ND	5.0	3485557
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	ND	ND	0.20	3485557
Styrene	ug/L	ND	ND	ND	ND	0.20	3485557
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	0.10	3485557

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Sampler Initials: LB

O'REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		UN2443	UN2443	UN2444	UN2445		
Sampling Date		2014/01/10 10:30	2014/01/10 10:30	2014/01/10 10:30	2014/01/10 12:00		
COC Number		446503-03-01	446503-03-01	446503-03-01	446503-03-01		
	Units	**2014-D**	**2014-D Lab-Dup**	**13-205B**	**13-104C**	**RDL**	**QC Batch**
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	0.20	3485557
Tetrachloroethylene	ug/L	ND	ND	ND	ND	0.10	3485557
Toluene	ug/L	ND	ND	ND	ND	0.20	3485557
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	0.10	3485557
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	0.20	3485557
Trichloroethylene	ug/L	ND	ND	ND	ND	0.10	3485557
Vinyl Chloride	ug/L	ND	ND	ND	ND	0.20	3485557
p+m-Xylene	ug/L	ND	ND	ND	0.12	0.10	3485557
o-Xylene	ug/L	ND	ND	ND	ND	0.10	3485557
Xylene (Total)	ug/L	ND	ND	ND	0.12	0.10	3485557
Chloroethane	ug/L	ND	ND	ND	ND	0.20	3485557
Chloromethane	ug/L	ND	ND	ND	ND	0.50	3485557
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	ND	ND	0.20	3485557
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	88	93	89	89		3485557
D4-1,2-Dichloroethane	%	114	125	111	112		3485557
D8-Toluene	%	83	82	84	84		3485557

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Maxxam Job #: B404748
Report Date: 2014/01/20

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

TEST SUMMARY

Maxxam ID: UN2443
Sample ID: 2014-D
Matrix: Water

Collected: 2014/01/10
Shipped:
Received: 2014/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3480008	N/A	2014/01/16	Automated Statchk
1,3-Dichloropropene Sum	CALC	3480009	N/A	2014/01/20	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3481388	N/A	2014/01/14	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3480930	2014/01/14	2014/01/14	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3483068	2014/01/15	2014/01/16	Yuan Zhou
Volatile Organic Compounds in Water	P&T/MS	3485557	N/A	2014/01/17	Paul Rubinato

Maxxam ID: UN2443 Dup
Sample ID: 2014-D
Matrix: Water

Collected: 2014/01/10
Shipped:
Received: 2014/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3480930	2014/01/14	2014/01/14	Habiba Essak
Volatile Organic Compounds in Water	P&T/MS	3485557	N/A	2014/01/17	Paul Rubinato

Maxxam ID: UN2444
Sample ID: 13-205B
Matrix: Water

Collected: 2014/01/10
Shipped:
Received: 2014/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3480008	N/A	2014/01/16	Automated Statchk
1,3-Dichloropropene Sum	CALC	3480009	N/A	2014/01/20	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3481388	N/A	2014/01/14	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3480930	2014/01/14	2014/01/14	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3483068	2014/01/15	2014/01/16	Yuan Zhou
Volatile Organic Compounds in Water	P&T/MS	3485557	N/A	2014/01/17	Paul Rubinato

Maxxam ID: UN2444 Dup
Sample ID: 13-205B
Matrix: Water

Collected: 2014/01/10
Shipped:
Received: 2014/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3483068	2014/01/15	2014/01/16	Yuan Zhou

Maxxam ID: UN2445
Sample ID: 13-104C
Matrix: Water

Collected: 2014/01/10
Shipped:
Received: 2014/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3480008	N/A	2014/01/16	Automated Statchk
1,3-Dichloropropene Sum	CALC	3480009	N/A	2014/01/20	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3481388	N/A	2014/01/14	Steve Roberts
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3480930	2014/01/14	2014/01/14	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3483068	2014/01/15	2014/01/16	Yuan Zhou
Volatile Organic Compounds in Water	P&T/MS	3485557	N/A	2014/01/17	Paul Rubinato

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GENERAL COMMENTS

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

Package 1	0.0°C

Custody seal was present and intact on cooler.

Sample 13-104C had visible sediment which was included in the analysis for the following bottles:

2X 500 ml amber glass bottles for F2-F4, 2 X 500 ml amber glass bottles for PAH.

Sample 13-104C had visible sediment which was present for the following vials.

3X 40 ml vials for F1/BTEX, 3 X 40 ml vials for VOCs.

O'REG 153 PETROLEUM HYDROCARBONS (WATER)

Petroleum Hydro. CCME F1 & BTEX in Water: Matrix spiked recoveries for some compounds were not calculated due to high concentration of target compounds in the parent sample.

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
3480930	HES	Matrix Spike [UN2444-01]	o-Terphenyl	2014/01/14		89	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2014/01/14		76	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/01/14		76	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/01/14		76	%	50 - 130
3480930	HES	Spiked Blank	o-Terphenyl	2014/01/14		86	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2014/01/14		86	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/01/14		86	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/01/14		86	%	60 - 130
3480930	HES	Method Blank	o-Terphenyl	2014/01/14		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2014/01/14	ND, RDL=100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/01/14	ND, RDL=100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/01/14	ND, RDL=100		ug/L	
3480930	HES	RPD [UN2443-01]	F2 (C10-C16 Hydrocarbons)	2014/01/14	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2014/01/14	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2014/01/14	NC		%	50
3481388	STE	Matrix Spike	1,4-Difluorobenzene	2014/01/14		109	%	70 - 130
			4-Bromofluorobenzene	2014/01/14		118	%	70 - 130
			D10-Ethylbenzene	2014/01/14		112	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/14		111	%	70 - 130
			F1 (C6-C10)	2014/01/14		93	%	70 - 130
3481388	STE	Spiked Blank	1,4-Difluorobenzene	2014/01/14		88	%	70 - 130
			4-Bromofluorobenzene	2014/01/14		101	%	70 - 130
			D10-Ethylbenzene	2014/01/14		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/14		87	%	70 - 130
			F1 (C6-C10)	2014/01/14		101	%	70 - 130
3481388	STE	Method Blank	1,4-Difluorobenzene	2014/01/14		90	%	70 - 130
			4-Bromofluorobenzene	2014/01/14		101	%	70 - 130
			D10-Ethylbenzene	2014/01/14		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/14		89	%	70 - 130
			F1 (C6-C10)	2014/01/14	ND, RDL=25		ug/L	
			F1 (C6-C10) - BTEX	2014/01/14	ND, RDL=25		ug/L	
3481388	STE	RPD	F1 (C6-C10)	2014/01/14	NC		%	40
			F1 (C6-C10) - BTEX	2014/01/14	NC		%	40
3483068	YZ	Matrix Spike	D10-Anthracene	2014/01/16		81	%	50 - 130
			D14-Terphenyl (FS)	2014/01/16		85	%	50 - 130
			D8-Acenaphthylene	2014/01/16		78	%	50 - 130
			Acenaphthene	2014/01/16		88	%	50 - 130
			Acenaphthylene	2014/01/16		87	%	50 - 130
			Anthracene	2014/01/16		87	%	50 - 130
			Benzo(a)anthracene	2014/01/16		93	%	50 - 130
			Benzo(a)pyrene	2014/01/16		91	%	50 - 130
			Benzo(b/j)fluoranthene	2014/01/16		93	%	50 - 130
			Benzo(g,h,i)perylene	2014/01/16		93	%	50 - 130
			Benzo(k)fluoranthene	2014/01/16		91	%	50 - 130
			Chrysene	2014/01/16		93	%	50 - 130
			Dibenz(a,h)anthracene	2014/01/16		88	%	50 - 130
			Fluoranthene	2014/01/16		97	%	50 - 130
			Fluorene	2014/01/16		89	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/01/16		94	%	50 - 130
			1-Methylnaphthalene	2014/01/16		80	%	50 - 130
			2-Methylnaphthalene	2014/01/16		76	%	50 - 130
			Naphthalene	2014/01/16		85	%	50 - 130
			Phenanthrene	2014/01/16		91	%	50 - 130
			Pyrene	2014/01/16		98	%	50 - 130
3483068	YZ	Spiked Blank	D10-Anthracene	2014/01/15		92	%	50 - 130

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Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			D14-Terphenyl (FS)	2014/01/15		91	%	50 - 130
			D8-Acenaphthylene	2014/01/15		90	%	50 - 130
			Acenaphthene	2014/01/15		98	%	50 - 130
			Acenaphthylene	2014/01/15		96	%	50 - 130
			Anthracene	2014/01/15		96	%	50 - 130
			Benzo(a)anthracene	2014/01/15		100	%	50 - 130
			Benzo(a)pyrene	2014/01/15		96	%	50 - 130
			Benzo(b/j)fluoranthene	2014/01/15		98	%	50 - 130
			Benzo(g,h,i)perylene	2014/01/15		94	%	50 - 130
			Benzo(k)fluoranthene	2014/01/15		99	%	50 - 130
			Chrysene	2014/01/15		103	%	50 - 130
			Dibenz(a,h)anthracene	2014/01/15		86	%	50 - 130
			Fluoranthene	2014/01/15		106	%	50 - 130
			Fluorene	2014/01/15		100	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/01/15		98	%	50 - 130
			1-Methylnaphthalene	2014/01/15		97	%	50 - 130
			2-Methylnaphthalene	2014/01/15		94	%	50 - 130
			Naphthalene	2014/01/15		89	%	50 - 130
			Phenanthrene	2014/01/15		102	%	50 - 130
			Pyrene	2014/01/15		107	%	50 - 130
3483068	YZ	Method Blank	D10-Anthracene	2014/01/15		94	%	50 - 130
			D14-Terphenyl (FS)	2014/01/15		85	%	50 - 130
			D8-Acenaphthylene	2014/01/15		91	%	50 - 130
			Acenaphthene	2014/01/15	ND, RDL=0.010		ug/L	
			Acenaphthylene	2014/01/15	ND, RDL=0.010		ug/L	
			Anthracene	2014/01/15	ND, RDL=0.010		ug/L	
			Benzo(a)anthracene	2014/01/15	ND, RDL=0.010		ug/L	
			Benzo(a)pyrene	2014/01/15	ND, RDL=0.010		ug/L	
			Benzo(b/j)fluoranthene	2014/01/15	ND, RDL=0.010		ug/L	
			Benzo(g,h,i)perylene	2014/01/15	ND, RDL=0.010		ug/L	
			Benzo(k)fluoranthene	2014/01/15	ND, RDL=0.010		ug/L	
			Chrysene	2014/01/15	ND, RDL=0.010		ug/L	
			Dibenz(a,h)anthracene	2014/01/15	ND, RDL=0.010		ug/L	
			Fluoranthene	2014/01/15	ND, RDL=0.010		ug/L	
			Fluorene	2014/01/15	ND, RDL=0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2014/01/15	ND, RDL=0.010		ug/L	
			1-Methylnaphthalene	2014/01/15	ND, RDL=0.010		ug/L	
			2-Methylnaphthalene	2014/01/15	ND, RDL=0.010		ug/L	

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Report Date: 2014/01/20

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Naphthalene	2014/01/15	ND, RDL=0.010		ug/L	
			Phenanthrene	2014/01/15	ND, RDL=0.010		ug/L	
			Pyrene	2014/01/15	ND, RDL=0.010		ug/L	
3483068	YZ	RPD [UN2444-03]	Acenaphthene	2014/01/16	NC		%	30
			Acenaphthylene	2014/01/16	NC		%	30
			Anthracene	2014/01/16	NC		%	30
			Benzo(a)anthracene	2014/01/16	NC		%	30
			Benzo(a)pyrene	2014/01/16	NC		%	30
			Benzo(b/j)fluoranthene	2014/01/16	NC		%	30
			Benzo(g,h,i)perylene	2014/01/16	NC		%	30
			Benzo(k)fluoranthene	2014/01/16	NC		%	30
			Chrysene	2014/01/16	NC		%	30
			Dibenz(a,h)anthracene	2014/01/16	NC		%	30
			Fluoranthene	2014/01/16	NC		%	30
			Fluorene	2014/01/16	NC		%	30
			Indeno(1,2,3-cd)pyrene	2014/01/16	NC		%	30
			1-Methylnaphthalene	2014/01/16	NC		%	30
			2-Methylnaphthalene	2014/01/16	NC		%	30
			Naphthalene	2014/01/16	NC		%	30
			Phenanthrene	2014/01/16	NC		%	30
			Pyrene	2014/01/16	NC		%	30
3485557	PRB	Matrix Spike [UN2444-05]	4-Bromofluorobenzene	2014/01/17		104	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/17		94	%	70 - 130
			D8-Toluene	2014/01/17		104	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/01/17		127	%	60 - 140
			Hexane	2014/01/17		124	%	70 - 130
			Acetone (2-Propanone)	2014/01/17		93	%	60 - 140
			Benzene	2014/01/17		95	%	70 - 130
			Bromodichloromethane	2014/01/17		107	%	70 - 130
			Bromoform	2014/01/17		105	%	70 - 130
			Bromomethane	2014/01/17		127	%	60 - 140
			Carbon Tetrachloride	2014/01/17		116	%	70 - 130
			Chlorobenzene	2014/01/17		106	%	70 - 130
			Chloroform	2014/01/17		105	%	70 - 130
			Dibromochloromethane	2014/01/17		108	%	70 - 130
			1,2-Dichlorobenzene	2014/01/17		104	%	70 - 130
			1,3-Dichlorobenzene	2014/01/17		104	%	70 - 130
			1,4-Dichlorobenzene	2014/01/17		108	%	70 - 130
			1,1-Dichloroethane	2014/01/17		113	%	70 - 130
			1,2-Dichloroethane	2014/01/17		101	%	70 - 130
			1,1-Dichloroethylene	2014/01/17		112	%	70 - 130
			cis-1,2-Dichloroethylene	2014/01/17		97	%	70 - 130
			trans-1,2-Dichloroethylene	2014/01/17		124	%	70 - 130
			1,2-Dichloropropane	2014/01/17		109	%	70 - 130
			cis-1,3-Dichloropropene	2014/01/17		109	%	70 - 130
			trans-1,3-Dichloropropene	2014/01/17		91	%	70 - 130
			Ethylbenzene	2014/01/17		105	%	70 - 130
			Ethylene Dibromide	2014/01/17		99	%	70 - 130
			Methylene Chloride(Dichloromethane)	2014/01/17		109	%	70 - 130
			Methyl Isobutyl Ketone	2014/01/17		99	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2014/01/17		79	%	60 - 140
			Methyl t-butyl ether (MTBE)	2014/01/17		96	%	70 - 130
			Styrene	2014/01/17		108	%	70 - 130
			1,1,1,2-Tetrachloroethane	2014/01/17		99	%	70 - 130
			1,1,2,2-Tetrachloroethane	2014/01/17		99	%	70 - 130
			Tetrachloroethylene	2014/01/17		113	%	70 - 130
			Toluene	2014/01/17		113	%	70 - 130
			1,1,1-Trichloroethane	2014/01/17		110	%	70 - 130

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Client Project #: 163401060
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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			1,1,2-Trichloroethane	2014/01/17		98	%	70 - 130
			Trichloroethylene	2014/01/17		114	%	70 - 130
			Vinyl Chloride	2014/01/17		116	%	70 - 130
			p+m-Xylene	2014/01/17		121	%	70 - 130
			o-Xylene	2014/01/17		84	%	70 - 130
			Chloroethane	2014/01/17		117	%	70 - 130
			Chloromethane	2014/01/17		118	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2014/01/17		117	%	70 - 130
3485557	PRB	Spiked Blank	4-Bromofluorobenzene	2014/01/17		103	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/17		100	%	70 - 130
			D8-Toluene	2014/01/17		101	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/01/17		80	%	60 - 140
			Hexane	2014/01/17		72	%	70 - 130
			Acetone (2-Propanone)	2014/01/17		70	%	60 - 140
			Benzene	2014/01/17		70	%	70 - 130
			Bromodichloromethane	2014/01/17		76	%	70 - 130
			Bromoform	2014/01/17		75	%	70 - 130
			Bromomethane	2014/01/17		86	%	60 - 140
			Carbon Tetrachloride	2014/01/17		76	%	70 - 130
			Chlorobenzene	2014/01/17		72	%	70 - 130
			Chloroform	2014/01/17		74	%	70 - 130
			Dibromochloromethane	2014/01/17		78	%	70 - 130
			1,2-Dichlorobenzene	2014/01/17		71	%	70 - 130
			1,3-Dichlorobenzene	2014/01/17		75	%	70 - 130
			1,4-Dichlorobenzene	2014/01/17		71	%	70 - 130
			1,1-Dichloroethane	2014/01/17		76	%	70 - 130
			1,2-Dichloroethane	2014/01/17		118	%	70 - 130
			1,1-Dichloroethylene	2014/01/17		74	%	70 - 130
			cis-1,2-Dichloroethylene	2014/01/17		73	%	70 - 130
			trans-1,2-Dichloroethylene	2014/01/17		79	%	70 - 130
			1,2-Dichloropropane	2014/01/17		74	%	70 - 130
			cis-1,3-Dichloropropene	2014/01/17		75	%	70 - 130
			trans-1,3-Dichloropropene	2014/01/17		74	%	70 - 130
			Ethylbenzene	2014/01/17		64	%	70 - 130
			Ethylene Dibromide	2014/01/17		71	%	70 - 130
			Methylene Chloride(Dichloromethane)	2014/01/17		79	%	70 - 130
			Methyl Isobutyl Ketone	2014/01/17		73	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2014/01/17		111	%	60 - 140
			Methyl t-butyl ether (MTBE)	2014/01/17		70	%	70 - 130
			Styrene	2014/01/17		71	%	70 - 130
			1,1,1,2-Tetrachloroethane	2014/01/17		117	%	70 - 130
			1,1,2,2-Tetrachloroethane	2014/01/17		73	%	70 - 130
			Tetrachloroethylene	2014/01/17		69	%	70 - 130
			Toluene	2014/01/17		70	%	70 - 130
			1,1,1-Trichloroethane	2014/01/17		128	%	70 - 130
			1,1,2-Trichloroethane	2014/01/17		70	%	70 - 130
			Trichloroethylene	2014/01/17		72	%	70 - 130
			Vinyl Chloride	2014/01/17		76	%	70 - 130
			p+m-Xylene	2014/01/17		83	%	70 - 130
			o-Xylene	2014/01/17		73	%	70 - 130
			Chloroethane	2014/01/17		80	%	70 - 130
			Chloromethane	2014/01/17		83	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2014/01/17		75	%	70 - 130
3485557	PRB	Method Blank	4-Bromofluorobenzene	2014/01/17		89	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/17		81	%	70 - 130
			D8-Toluene	2014/01/17		89	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/01/17	ND, RDL=0.50		ug/L	
			Hexane	2014/01/17	ND, RDL=0.50		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Acetone (2-Propanone)	2014/01/17	ND, RDL=10		ug/L	
			Benzene	2014/01/17	ND, RDL=0.10		ug/L	
			Bromodichloromethane	2014/01/17	ND, RDL=0.10		ug/L	
			Bromoform	2014/01/17	ND, RDL=0.20		ug/L	
			Bromomethane	2014/01/17	ND, RDL=0.50		ug/L	
			Carbon Tetrachloride	2014/01/17	ND, RDL=0.10		ug/L	
			Chlorobenzene	2014/01/17	ND, RDL=0.10		ug/L	
			Chloroform	2014/01/17	ND, RDL=0.10		ug/L	
			Dibromochloromethane	2014/01/17	ND, RDL=0.20		ug/L	
			1,2-Dichlorobenzene	2014/01/17	ND, RDL=0.20		ug/L	
			1,3-Dichlorobenzene	2014/01/17	ND, RDL=0.20		ug/L	
			1,4-Dichlorobenzene	2014/01/17	ND, RDL=0.20		ug/L	
			1,1-Dichloroethane	2014/01/17	ND, RDL=0.10		ug/L	
			1,2-Dichloroethane	2014/01/17	ND, RDL=0.20		ug/L	
			1,1-Dichloroethylene	2014/01/17	ND, RDL=0.10		ug/L	
			cis-1,2-Dichloroethylene	2014/01/17	ND, RDL=0.10		ug/L	
			trans-1,2-Dichloroethylene	2014/01/17	ND, RDL=0.10		ug/L	
			1,2-Dichloropropane	2014/01/17	ND, RDL=0.10		ug/L	
			cis-1,3-Dichloropropene	2014/01/17	ND, RDL=0.20		ug/L	
			trans-1,3-Dichloropropene	2014/01/17	ND, RDL=0.20		ug/L	
			Ethylbenzene	2014/01/17	ND, RDL=0.10		ug/L	
			Ethylene Dibromide	2014/01/17	ND, RDL=0.20		ug/L	
			Methylene Chloride(Dichloromethane)	2014/01/17	ND, RDL=0.50		ug/L	
			Methyl Isobutyl Ketone	2014/01/17	ND, RDL=5.0		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
			Methyl Ethyl Ketone (2-Butanone)	2014/01/17	ND, RDL=5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2014/01/17	ND, RDL=0.20		ug/L	
			Styrene	2014/01/17	ND, RDL=0.20		ug/L	
			1,1,1,2-Tetrachloroethane	2014/01/17	ND, RDL=0.10		ug/L	
			1,1,2,2-Tetrachloroethane	2014/01/17	ND, RDL=0.20		ug/L	
			Tetrachloroethylene	2014/01/17	ND, RDL=0.10		ug/L	
			Toluene	2014/01/17	ND, RDL=0.20		ug/L	
			1,1,1-Trichloroethane	2014/01/17	ND, RDL=0.10		ug/L	
			1,1,2-Trichloroethane	2014/01/17	ND, RDL=0.20		ug/L	
			Trichloroethylene	2014/01/17	ND, RDL=0.10		ug/L	
			Vinyl Chloride	2014/01/17	ND, RDL=0.20		ug/L	
			p+m-Xylene	2014/01/17	ND, RDL=0.10		ug/L	
			o-Xylene	2014/01/17	ND, RDL=0.10		ug/L	
			Xylene (Total)	2014/01/17	ND, RDL=0.10		ug/L	
			Chloroethane	2014/01/17	ND, RDL=0.20		ug/L	
			Chloromethane	2014/01/17	ND, RDL=0.50		ug/L	
			Trichlorofluoromethane (FREON 11)	2014/01/17	ND, RDL=0.20		ug/L	
3485557	PRB	RPD [UN2443-05]	Dichlorodifluoromethane (FREON 12)	2014/01/17	NC		%	40
			Hexane	2014/01/17	NC		%	40
			Acetone (2-Propanone)	2014/01/17	NC		%	40
			Benzene	2014/01/17	NC		%	40
			Bromodichloromethane	2014/01/17	NC		%	40
			Bromoform	2014/01/17	NC		%	40
			Bromomethane	2014/01/17	NC		%	40
			Carbon Tetrachloride	2014/01/17	NC		%	40
			Chlorobenzene	2014/01/17	NC		%	40
			Chloroform	2014/01/17	7.5		%	40
			Dibromochloromethane	2014/01/17	NC		%	40
			1,2-Dichlorobenzene	2014/01/17	NC		%	40
			1,3-Dichlorobenzene	2014/01/17	NC		%	40
			1,4-Dichlorobenzene	2014/01/17	NC		%	40
			1,1-Dichloroethane	2014/01/17	NC		%	40
			1,2-Dichloroethane	2014/01/17	NC		%	40
			1,1-Dichloroethylene	2014/01/17	NC		%	40
			cis-1,2-Dichloroethylene	2014/01/17	NC		%	40
			trans-1,2-Dichloroethylene	2014/01/17	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
			1,2-Dichloropropane	2014/01/17	NC		%	40
			cis-1,3-Dichloropropene	2014/01/17	NC		%	40
			trans-1,3-Dichloropropene	2014/01/17	NC		%	40
			Ethylbenzene	2014/01/17	NC		%	40
			Ethylene Dibromide	2014/01/17	NC		%	40
			Methylene Chloride(Dichloromethane)	2014/01/17	NC		%	40
			Methyl Isobutyl Ketone	2014/01/17	NC		%	40
			Methyl Ethyl Ketone (2-Butanone)	2014/01/17	NC		%	40
			Methyl t-butyl ether (MTBE)	2014/01/17	NC		%	40
			Styrene	2014/01/17	NC		%	40
			1,1,1,2-Tetrachloroethane	2014/01/17	NC		%	40
			1,1,2,2-Tetrachloroethane	2014/01/17	NC		%	40
			Tetrachloroethylene	2014/01/17	NC		%	40
			Toluene	2014/01/17	NC		%	40
			1,1,1-Trichloroethane	2014/01/17	NC		%	40
			1,1,2-Trichloroethane	2014/01/17	NC		%	40
			Trichloroethylene	2014/01/17	NC		%	40
			Vinyl Chloride	2014/01/17	NC		%	40
			p+m-Xylene	2014/01/17	NC		%	40
			o-Xylene	2014/01/17	NC		%	40
			Xylene (Total)	2014/01/17	NC		%	40
			Chloroethane	2014/01/17	NC		%	40
			Chloromethane	2014/01/17	NC		%	40
			Trichlorofluoromethane (FREON 11)	2014/01/17	NC		%	40

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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Scientific Services

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

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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Your Project #: MB409136
Your C.O.C. #: 1 OF 1

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2014/01/28
Report #: R1506958
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B404674
Received: 2014/01/21, 08:25

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Cadmium - low level CCME - Dissolved	3	N/A	2014/01/23	AB SOP-00043	EPA 200.8
Sulphide (as H2S)	3	N/A	2014/01/22	CAL SOP-00062	SM 4500-S2 D
Elements by ICP - Dissolved	3	N/A	2014/01/22	AB SOP-00042	EPA 200.7
Elements by ICPMS - Dissolved	2	N/A	2014/01/21	AB SOP-00043	EPA 200.8
Elements by ICPMS - Dissolved	1	N/A	2014/01/22	AB SOP-00043	EPA 200.8
Sulphide	3	N/A	2014/01/22	CAL SOP-00062	SM 4500-S2 D

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

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Wendy Sears, Project manager
Email: WSears@maxxam.ca
Phone# (403) 291-3077

==========

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Total cover pages: 1

Maxxam Job #: B404674
Report Date: 2014/01/28

MAXXAM ANALYTICS
Client Project #: MB409136

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		IM2332	IM2336		IM2337		
Sampling Date		2014/01/17 14:00	2014/01/17 12:00		2014/01/16 11:30		
COC Number		1 OF 1	1 OF 1		1 OF 1		
	UNITS	**13-107A (UP3885-04R)**	**13-218C (UP3889-04R)**	**RDL**	**13-106C (UP3891-03R)**	**RDL**	**QC Batch**
Low Level Elements							
Dissolved Cadmium (Cd)	ug/L	0.017	0.044	0.0050	0.067	0.025	7355473
Elements							
Dissolved Aluminum (Al)	mg/L	0.0063	0.0048	0.0030	1.0	0.015	7356489
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	<0.0030	0.0030	7356489
Dissolved Arsenic (As)	mg/L	0.00040	0.00031	0.00020	0.0011	0.0010	7356489
Dissolved Barium (Ba)	mg/L	0.071	0.22	0.010	0.095	0.010	7357240
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	<0.0050	0.0050	7356489
Dissolved Boron (B)	mg/L	0.030	0.11	0.020	0.17	0.020	7357240
Dissolved Calcium (Ca)	mg/L	100	200	0.30	470	0.30	7357240
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	<0.0050	0.0050	7356489
Dissolved Cobalt (Co)	mg/L	0.0015	0.0014	0.00030	0.0035	0.0015	7356489
Dissolved Copper (Cu)	mg/L	0.0036	0.0024	0.00020	0.0061	0.0010	7356489
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	2.8	0.060	7357240
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	0.0026	0.0010	7356489
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	0.020	0.034	0.020	7357240
Dissolved Magnesium (Mg)	mg/L	15	98	0.20	110	0.20	7357240
Dissolved Manganese (Mn)	mg/L	0.13	0.14	0.0040	0.39	0.0040	7357240
Dissolved Molybdenum (Mo)	mg/L	0.0024	0.0032	0.00020	0.0074	0.0010	7356489
Dissolved Nickel (Ni)	mg/L	0.0025	0.0058	0.00050	0.011	0.0025	7356489
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	0.18	0.10	7357240
Dissolved Potassium (K)	mg/L	1.6	11	0.30	24	0.30	7357240
Dissolved Selenium (Se)	mg/L	0.00046	<0.00020	0.00020	<0.0010	0.0010	7356489
Dissolved Silicon (Si)	mg/L	4.1	12	0.10	13	0.10	7357240
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	<0.00050	0.00050	7356489
Dissolved Sodium (Na)	mg/L	21	170	0.50	1100 (1)	2.5	7357240
Dissolved Strontium (Sr)	mg/L	0.41	2.0	0.020	16 (1)	0.10	7357240
Dissolved Sulphur (S)	mg/L	8.2	48	0.20	160	0.20	7357240
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	<0.0010	0.0010	7356489
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	<0.0050	0.0050	7356489
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	0.076	0.0050	7356489
Dissolved Uranium (U)	mg/L	0.0012	0.0040	0.00010	0.0027	0.00050	7356489

RDL = Reportable Detection Limit
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Maxxam Job #: B404674
Report Date: 2014/01/28

MAXXAM ANALYTICS
Client Project #: MB409136

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		IM2332	IM2336		IM2337		
Sampling Date		2014/01/17 14:00	2014/01/17 12:00		2014/01/16 11:30		
COC Number		1 OF 1	1 OF 1		1 OF 1		
	UNITS	**13-107A (UP3885-04R)**	**13-218C (UP3889-04R)**	**RDL**	**13-106C (UP3891-03R)**	**RDL**	**QC Batch**
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	<0.0050	0.0050	7356489
Dissolved Zinc (Zn)	mg/L	0.0043	<0.0030	0.0030	<0.015	0.015	7356489

RDL = Reportable Detection Limit

Maxxam Job #: B404674
Report Date: 2014/01/28

MAXXAM ANALYTICS
Client Project #: MB409136

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		IM2333	IM2334	IM2335		
Sampling Date		2014/01/16 11:00	2014/01/15 13:00	2014/01/15 13:00		
COC Number		1 OF 1	1 OF 1	1 OF 1		
	UNITS	**13-211 (UP3886-04R)**	**13-107 (UP3887-04R)**	**2014-E (UP3888-04R)**	**RDL**	**QC Batch**
Calculated Parameters						
Hydrogen Sulphide (H2S)	mg/L	1.0	0.20	0.26	0.021	7355816
Anions						
Sulphide	mg/L	0.99 (1)	0.19 (2)	0.25 (2)	0.020	7357227

RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference.
(2) Detection limits raised due to sample matrix.

Maxxam Job #: B404674
Report Date: 2014/01/28

MAXXAM ANALYTICS
Client Project #: MB409136

Package 1	4.0°C

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

REGULATED METALS (CCME/AT1) - DISSOLVED Comments

Sample IM2337-01 Elements by ICPMS - Dissolved: Detection limits raised due to matrix interference.

Results relate only to the items tested.

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: MB409136
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: CB404674

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7356489	TDB	Matrix Spike	Dissolved Aluminum (Al)	2014/01/21		101	%	80 - 120
			Dissolved Antimony (Sb)	2014/01/21		85	%	80 - 120
			Dissolved Arsenic (As)	2014/01/21		101	%	80 - 120
			Dissolved Beryllium (Be)	2014/01/21		94	%	80 - 120
			Dissolved Chromium (Cr)	2014/01/21		96	%	80 - 120
			Dissolved Cobalt (Co)	2014/01/21		90	%	80 - 120
			Dissolved Copper (Cu)	2014/01/21		89	%	80 - 120
			Dissolved Lead (Pb)	2014/01/21		90	%	80 - 120
			Dissolved Molybdenum (Mo)	2014/01/21		104	%	80 - 120
			Dissolved Nickel (Ni)	2014/01/21		95	%	80 - 120
			Dissolved Selenium (Se)	2014/01/21		103	%	80 - 120
			Dissolved Silver (Ag)	2014/01/21		87	%	80 - 120
			Dissolved Thallium (Tl)	2014/01/21		95	%	80 - 120
			Dissolved Tin (Sn)	2014/01/21		98	%	80 - 120
			Dissolved Titanium (Ti)	2014/01/21		102	%	80 - 120
			Dissolved Uranium (U)	2014/01/21		100	%	80 - 120
			Dissolved Vanadium (V)	2014/01/21		100	%	80 - 120
			Dissolved Zinc (Zn)	2014/01/21		95	%	80 - 120
		Spiked Blank	Dissolved Aluminum (Al)	2014/01/21		109	%	80 - 120
			Dissolved Antimony (Sb)	2014/01/21		92	%	80 - 120
			Dissolved Arsenic (As)	2014/01/21		96	%	80 - 120
			Dissolved Beryllium (Be)	2014/01/21		110	%	80 - 120
			Dissolved Chromium (Cr)	2014/01/21		96	%	80 - 120
			Dissolved Cobalt (Co)	2014/01/21		92	%	80 - 120
			Dissolved Copper (Cu)	2014/01/21		96	%	80 - 120
			Dissolved Lead (Pb)	2014/01/21		95	%	80 - 120
			Dissolved Molybdenum (Mo)	2014/01/21		98	%	80 - 120
			Dissolved Nickel (Ni)	2014/01/21		97	%	80 - 120
			Dissolved Selenium (Se)	2014/01/21		95	%	80 - 120
			Dissolved Silver (Ag)	2014/01/21		94	%	80 - 120
			Dissolved Thallium (Tl)	2014/01/21		98	%	80 - 120
			Dissolved Tin (Sn)	2014/01/21		97	%	80 - 120
			Dissolved Titanium (Ti)	2014/01/21		95	%	80 - 120
			Dissolved Uranium (U)	2014/01/21		100	%	80 - 120
			Dissolved Vanadium (V)	2014/01/21		98	%	80 - 120
			Dissolved Zinc (Zn)	2014/01/21		96	%	80 - 120
		Method Blank	Dissolved Aluminum (Al)	2014/01/21	<0.0030		mg/L	
			Dissolved Antimony (Sb)	2014/01/21	<0.00060		mg/L	
			Dissolved Arsenic (As)	2014/01/21	<0.00020		mg/L	
			Dissolved Beryllium (Be)	2014/01/21	<0.0010		mg/L	
			Dissolved Chromium (Cr)	2014/01/21	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2014/01/21	<0.00030		mg/L	
			Dissolved Copper (Cu)	2014/01/21	<0.00020		mg/L	
			Dissolved Lead (Pb)	2014/01/21	<0.00020		mg/L	
			Dissolved Molybdenum (Mo)	2014/01/21	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2014/01/21	<0.00050		mg/L	
			Dissolved Selenium (Se)	2014/01/21	<0.00020		mg/L	
			Dissolved Silver (Ag)	2014/01/21	<0.00010		mg/L	
			Dissolved Thallium (Tl)	2014/01/21	<0.00020		mg/L	
			Dissolved Tin (Sn)	2014/01/21	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2014/01/21	<0.0010		mg/L	
			Dissolved Uranium (U)	2014/01/21	<0.00010		mg/L	
			Dissolved Vanadium (V)	2014/01/21	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2014/01/21	<0.0030		mg/L	
		RPD	Dissolved Aluminum (Al)	2014/01/21	NC		%	20

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: MB409136
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB404674

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7356489	TDB	RPD	Dissolved Antimony (Sb)	2014/01/21	NC		%	20
			Dissolved Arsenic (As)	2014/01/21	NC		%	20
			Dissolved Beryllium (Be)	2014/01/21	NC		%	20
			Dissolved Chromium (Cr)	2014/01/21	NC		%	20
			Dissolved Cobalt (Co)	2014/01/21	NC		%	20
			Dissolved Copper (Cu)	2014/01/21	NC		%	20
			Dissolved Lead (Pb)	2014/01/21	NC		%	20
			Dissolved Molybdenum (Mo)	2014/01/21	NC		%	20
			Dissolved Nickel (Ni)	2014/01/21	NC		%	20
			Dissolved Selenium (Se)	2014/01/21	NC		%	20
			Dissolved Silver (Ag)	2014/01/21	NC		%	20
			Dissolved Thallium (Tl)	2014/01/21	NC		%	20
			Dissolved Tin (Sn)	2014/01/21	NC		%	20
			Dissolved Titanium (Ti)	2014/01/21	NC		%	20
			Dissolved Uranium (U)	2014/01/21	5.4		%	20
			Dissolved Vanadium (V)	2014/01/21	NC		%	20
			Dissolved Zinc (Zn)	2014/01/21	NC		%	20
7357227	LS0	Spiked Blank	Sulphide	2014/01/22		110	%	80 - 120
		Method Blank	Sulphide	2014/01/22	<0.0020		mg/L	
		RPD	Sulphide	2014/01/22	NC		%	20
7357240	KSF	Matrix Spike	Dissolved Barium (Ba)	2014/01/22		86	%	80 - 120
			Dissolved Boron (B)	2014/01/22		91	%	80 - 120
			Dissolved Calcium (Ca)	2014/01/22		NC	%	80 - 120
			Dissolved Iron (Fe)	2014/01/22		89	%	80 - 120
			Dissolved Lithium (Li)	2014/01/22		88	%	80 - 120
			Dissolved Magnesium (Mg)	2014/01/22		NC	%	80 - 120
			Dissolved Manganese (Mn)	2014/01/22		89	%	80 - 120
			Dissolved Phosphorus (P)	2014/01/22		91	%	80 - 120
			Dissolved Potassium (K)	2014/01/22		94	%	80 - 120
			Dissolved Silicon (Si)	2014/01/22		90	%	80 - 120
			Dissolved Sodium (Na)	2014/01/22		NC	%	80 - 120
			Dissolved Strontium (Sr)	2014/01/22		85	%	80 - 120
		Spiked Blank	Dissolved Barium (Ba)	2014/01/22		89	%	80 - 120
			Dissolved Boron (B)	2014/01/22		92	%	80 - 120
			Dissolved Calcium (Ca)	2014/01/22		93	%	80 - 120
			Dissolved Iron (Fe)	2014/01/22		91	%	80 - 120
			Dissolved Lithium (Li)	2014/01/22		89	%	80 - 120
			Dissolved Magnesium (Mg)	2014/01/22		93	%	80 - 120
			Dissolved Manganese (Mn)	2014/01/22		92	%	80 - 120
			Dissolved Phosphorus (P)	2014/01/22		89	%	80 - 120
			Dissolved Potassium (K)	2014/01/22		94	%	80 - 120
			Dissolved Silicon (Si)	2014/01/22		92	%	80 - 120
			Dissolved Sodium (Na)	2014/01/22		93	%	80 - 120
			Dissolved Strontium (Sr)	2014/01/22		90	%	80 - 120
		Method Blank	Dissolved Barium (Ba)	2014/01/22	<0.010		mg/L	
			Dissolved Boron (B)	2014/01/22	<0.020		mg/L	
			Dissolved Calcium (Ca)	2014/01/22	<0.30		mg/L	
			Dissolved Iron (Fe)	2014/01/22	<0.060		mg/L	
			Dissolved Lithium (Li)	2014/01/22	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2014/01/22	<0.20		mg/L	
			Dissolved Manganese (Mn)	2014/01/22	<0.0040		mg/L	
			Dissolved Phosphorus (P)	2014/01/22	<0.10		mg/L	
			Dissolved Potassium (K)	2014/01/22	<0.30		mg/L	
			Dissolved Silicon (Si)	2014/01/22	<0.10		mg/L	
			Dissolved Sodium (Na)	2014/01/22	<0.50		mg/L	

MAXXAM ANALYTICS
Attention: SUB CONTRACTOR
Client Project #: MB409136
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: CB404674

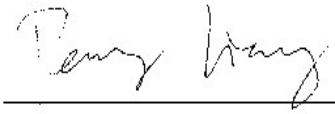
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7357240	KSF	Method Blank	Dissolved Strontium (Sr)	2014/01/22	<0.020		mg/L	
			Dissolved Sulphur (S)	2014/01/22	<0.20		mg/L	
		RPD	Dissolved Barium (Ba)	2014/01/22	0.2		%	20
			Dissolved Boron (B)	2014/01/22	NC		%	20
			Dissolved Lithium (Li)	2014/01/22	0.09		%	20
			Dissolved Phosphorus (P)	2014/01/22	NC		%	20
			Dissolved Silicon (Si)	2014/01/22	0.7		%	20
			Dissolved Strontium (Sr)	2014/01/22	0.08		%	20
			Dissolved Sulphur (S)	2014/01/22	0.03		%	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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B404674

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



Peng Liang, Analyst II

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

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MAXXAM ANALYTICS
32 Colonnade Unit 1000
Nepean, Ontario, K2E 7J6
Phone: (613) 274-0573
Fax: (613) 274-0574

Stantec Consulting Ltd - Ottawa
Maxxam PM Parnian Baber

SUBCONTRACTING REQUEST FORM

To: Campo to Calgary Subcontract

Job# B409136

☐ Yes ☐ No International Sample/BioHazard (if yes, add copy of Movement Cert., heat treat is required prior to disposal)
☐ Yes ☐ No Special Protocol (if yes, Protocol _____)

Sample ID	Matrix	Test(s) Required	Container	Date Sampled	Date Required
UP3885-04R \ 13-107A	W	CCME Metals (low Level), dissolved	1(DISM)	2014/01/17 14:00	2014/01/27
UP3886-04R \ 13-211	W	CCME Low Level Sulphide in Water	1(SUL)	2014/01/16 11:00	2014/01/27
UP3887-04R \ 13-107	W	CCME Low Level Sulphide in Water	1(SUL)	2014/01/15 13:00	2014/01/27
UP3888-04R \ 2014-E	W	CCME Low Level Sulphide in Water	1(SUL)	2014/01/15 13:00	2014/01/27
UP3889-04R \ 13-218C	W	CCME Metals (low Level), dissolved	1(DISM)	2014/01/17 12:00	2014/01/27
UP3891-03R \ 13-106C	W	CCME Metals (low Level), dissolved	1(DISM)	2014/01/16 11:30	2014/01/27

	Temp. 1	Temp. 2	Temp. 3			
Cooler #1	4	4	4	Custody Seal Present	~~YES~~	NO
				Custody Seal Intact	~~YES~~	NO
				Ice Present Upon Receipt	~~YES~~	NO
Cooler #2				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #3				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO

Receiving Maxxam Location: Campo to Calgary Subcontract JOB #

Relinquished by (Sign) _____ (Print) C. Bergeron Date and Time 2014/01/20 12:20

Received by (Sign) _____ (Print) SHERRY HAAS Date and Time 2014/01/21 0825

NOTES:
1) Please call us if due date cannot be met. Please reference Sample ID on your report.
2) Include copy of this completed form, Client COC & signed final report to **scontractor@maxxamanalytics.com**

Reporting Requirements:
National:
Regional:

21-Jan-14 08:25
Carmen McKay
B404674
NC4
INS-0045

Maxxam

Success Through Science®

Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: 400.103
Your C.O.C. #: 44650302, 446503-02-01

Attention:Jill Peters-Dechman

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2014/01/28
Report #: R2809426
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B409136
Received: 2014/01/20, 10:25

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	3	N/A	2014/01/22	CAM SOP-00301	EPA 8270
Alkalinity (1)	3	N/A	2014/01/21	CAM SOP-00448	SM 2320B
Chloride by Automated Colourimetry (1)	3	N/A	2014/01/23	CAM SOP-00463	EPA 325.2
Petroleum Hydro. CCME F1 & BTEX in Water	3	N/A	2014/01/23	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	2014/01/21	2014/01/22	OTT SOP-00001	CCME Hydrocarbons
Hardness (calculated as CaCO3) (1)	1	N/A	2014/01/23	CAM SOP 00102	SM 2340 B
Hardness (calculated as CaCO3) (1)	2	N/A	2014/01/24	CAM SOP 00102	SM 2340 B
Dissolved Calcium and Magnesium (1)	1	2014/01/23	2014/01/23	CAM SOP-00408	SW-846 6010C
Dissolved Calcium and Magnesium (1)	2	2014/01/23	2014/01/24	CAM SOP-00408	SW-846 6010C
Total Ammonia-N (1)	3	N/A	2014/01/23	CAM SOP-00441	US GS I-2522-90
PAH Compounds in Water by GC/MS (SIM) (1)	3	2014/01/21	2014/01/22	CAM SOP-00318	EPA 8270
Sulphate by Automated Colourimetry (1)	3	N/A	2014/01/23	CAM SOP-00464	EPA 375.4
Total Dissolved Solids (1)	3	N/A	2014/01/22	CAM SOP-00428	APHA 2540C
Volatile Organic Compounds in Water (1)	3	N/A	2014/01/22	CAM SOP-00226	EPA 8260 modified
Non-Routine Volatile Organic Compounds (1)	3	N/A	2014/01/22	CAM SOP-00226	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

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

Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: 400.103
Your C.O.C. #: 44650302, 446503-02-01

Attention:Jill Peters-Dechman

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2014/01/28
Report #: R2809426
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B409136
Received: 2014/01/20, 10:25

* 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.
Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

This report has been generated and distributed using a secure automated process.
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 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 #: B409136
Report Date: 2014/01/28

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

RESULTS OF ANALYSES OF WATER

Maxxam ID		UP3886		UP3887	UP3888		
Sampling Date		2014/01/16 11:00		2014/01/15 13:00	2014/01/15 13:00		
COC Number		446503-02-01		446503-02-01	446503-02-01		
	Units	13-211	RDL	13-107	2014-E	RDL	QC Batch
Calculated Parameters							
Hardness (CaCO3)	mg/L	890	1.0	380	400	1.0	3486992
Inorganics							
Total Ammonia-N	mg/L	1.6	0.050	1.7	1.7	0.050	3489702
Total Dissolved Solids	mg/L	6680	20	660	650	10	3489869
Dissolved Sulphate (SO4)	mg/L	140	1	ND	1	1	3489575
Alkalinity (Total as CaCO3)	mg/L	190	1.0	480	480	1.0	3488932
Dissolved Chloride (Cl)	mg/L	3600	40	160	150	2	3489574

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

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Sampler Initials: LB

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		UP3886		UP3887	UP3887		UP3888		
Sampling Date		2014/01/16 11:00		2014/01/15 13:00	2014/01/15 13:00		2014/01/15 13:00		
COC Number		446503-02-01		446503-02-01	446503-02-01		446503-02-01		
	Units	**13-211**	**QC Batch**	**13-107**	**13-107 Lab-Dup**	**QC Batch**	**2014-E**	**RDL**	**QC Batch**
Metals									
Dissolved Calcium (Ca)	mg/L	243	3490964	96.9	96.0	3490872	104	0.0500	3490964
Dissolved Magnesium (Mg)	mg/L	69.0	3490964	33.0	32.7	3490872	34.8	0.0500	3490964

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

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		UP3885	UP3889	UP3890		
Sampling Date		2014/01/17 14:00	2014/01/17 12:00	2014/01/17 13:00		
COC Number		446503-02-01	446503-02-01	446503-02-01		
	Units	13-107A	13-218C	13-106C	RDL	QC Batch
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/L	ND	ND	0.20	0.014	3487262
Polyaromatic Hydrocarbons						
Acenaphthene	ug/L	ND	ND	ND	0.010	3488983
Acenaphthylene	ug/L	ND	ND	ND	0.010	3488983
Anthracene	ug/L	ND	ND	ND	0.010	3488983
Benzo(a)anthracene	ug/L	ND	ND	ND	0.010	3488983
Benzo(a)pyrene	ug/L	ND	ND	ND	0.010	3488983
Benzo(b/j)fluoranthene	ug/L	ND	ND	ND	0.010	3488983
Benzo(g,h,i)perylene	ug/L	ND	ND	ND	0.010	3488983
Benzo(k)fluoranthene	ug/L	ND	ND	ND	0.010	3488983
Chrysene	ug/L	ND	ND	ND	0.010	3488983
Dibenz(a,h)anthracene	ug/L	ND	ND	ND	0.010	3488983
Fluoranthene	ug/L	ND	ND	ND	0.010	3488983
Fluorene	ug/L	ND	ND	0.019	0.010	3488983
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	ND	0.010	3488983
1-Methylnaphthalene	ug/L	ND	ND	0.079	0.010	3488983
2-Methylnaphthalene	ug/L	ND	ND	0.12	0.010	3488983
Naphthalene	ug/L	ND	ND	0.033	0.010	3488983
Phenanthrene	ug/L	ND	ND	0.026	0.010	3488983
Pyrene	ug/L	ND	ND	0.011	0.010	3488983
Surrogate Recovery (%)						
D10-Anthracene	%	80	76	65		3488983
D14-Terphenyl (FS)	%	79	75	47 (1)		3488983
D8-Acenaphthylene	%	73	66	58		3488983

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected
(1) Surrogate recovery was below the lower control limit due to matrix interference (sediment). This may represent a low bias in some results.

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Sampler Initials: LB

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		UP3885	UP3889	UP3889		UP3891		
Sampling Date		2014/01/17 14:00	2014/01/17 12:00	2014/01/17 12:00		2014/01/16 11:30		
COC Number		446503-02-01	446503-02-01	446503-02-01		446503-02-01		
	Units	13-107A	13-218C	13-218C Lab-Dup	RDL	13-106C	RDL	QC Batch
Volatile Organics								
Acetone (2-Propanone)	ug/L	ND	ND	ND	10	ND	20	3488123
Benzene	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
Bromodichloromethane	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
Bromoform	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
Bromomethane	ug/L	ND	ND	ND	0.50	ND	1.0	3488123
Carbon Tetrachloride	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
Chlorobenzene	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
Chloroform	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
Dibromochloromethane	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
1,2-Dichlorobenzene	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
1,3-Dichlorobenzene	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
1,4-Dichlorobenzene	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	ND	0.50	ND	1.0	3488123
1,1-Dichloroethane	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
1,2-Dichloroethane	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
1,1-Dichloroethylene	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
cis-1,2-Dichloroethylene	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
trans-1,2-Dichloroethylene	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
1,2-Dichloropropane	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
Ethylbenzene	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
Ethylene Dibromide	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
Hexane	ug/L	ND	ND	ND	0.50	ND	1.0	3488123
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	ND	0.50	ND	1.0	3488123
Methyl Isobutyl Ketone	ug/L	ND	ND	ND	5.0	ND	10	3488123
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	ND	5.0	ND	10	3488123
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
Styrene	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
Tetrachloroethylene	ug/L	ND	ND	ND	0.10	ND	0.20	3488123

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Sampler Initials: LB

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		UP3885	UP3889	UP3889		UP3891		
Sampling Date		2014/01/17 14:00	2014/01/17 12:00	2014/01/17 12:00		2014/01/16 11:30		
COC Number		446503-02-01	446503-02-01	446503-02-01		446503-02-01		
	Units	**13-107A**	**13-218C**	**13-218C Lab-Dup**	**RDL**	**13-106C**	**RDL**	**QC Batch**
Toluene	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
1,1,1-Trichloroethane	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
1,3,5-Trimethylbenzene	ug/L	ND	ND	ND	0.20	ND	0.40	3488108
1,1,2-Trichloroethane	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
Trichloroethylene	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
Vinyl Chloride	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
p+m-Xylene	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
o-Xylene	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
Xylene (Total)	ug/L	ND	ND	ND	0.10	ND	0.20	3488123
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	ND	0.20	ND	0.40	3488123
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	99	98	96		104		3488123
D4-1,2-Dichloroethane	%	86	87	88		88		3488123
D8-Toluene	%	95	95	97		95		3488123

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Sampler Initials: LB

O'REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		UP3885	UP3885	UP3889	UP3891		
Sampling Date		2014/01/17 14:00	2014/01/17 14:00	2014/01/17 12:00	2014/01/16 11:30		
COC Number		446503-02-01	446503-02-01	446503-02-01	446503-02-01		
	Units	13-107A	13-107A Lab-Dup	13-218C	13-106C	RDL	QC Batch
BTEX & F1 Hydrocarbons							
F1 (C6-C10)	ug/L	ND	ND	ND	ND	25	3489807
F1 (C6-C10) - BTEX	ug/L	ND	ND	ND	ND	25	3489807
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	ND		ND	ND	100	3488228
F3 (C16-C34 Hydrocarbons)	ug/L	ND		ND	ND	100	3488228
F4 (C34-C50 Hydrocarbons)	ug/L	ND		ND	ND	100	3488228
Reached Baseline at C50	ug/L	Yes		Yes	Yes		3488228
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	101	103	106	110		3489807
4-Bromofluorobenzene	%	99	102	84	102		3489807
D10-Ethylbenzene	%	100	103	116	107		3489807
D4-1,2-Dichloroethane	%	112	121	117	122		3489807
o-Terphenyl	%	95		96	98		3488228

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Report Date: 2014/01/28

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

TEST SUMMARY

Maxxam ID: UP3885
Sample ID: 13-107A
Matrix: Water

Collected: 2014/01/17
Shipped:
Received: 2014/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3487262	N/A	2014/01/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3489807	N/A	2014/01/23	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3488228	2014/01/21	2014/01/22	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3488983	2014/01/21	2014/01/22	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3488123	N/A	2014/01/22	Sarah Lam
Non-Routine Volatile Organic Compounds	P&T/MS	3488108	N/A	2014/01/22	Sarah Lam

Maxxam ID: UP3885 Dup
Sample ID: 13-107A
Matrix: Water

Collected: 2014/01/17
Shipped:
Received: 2014/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3489807	N/A	2014/01/23	Lyndsey Hart

Maxxam ID: UP3886
Sample ID: 13-211
Matrix: Water

Collected: 2014/01/16
Shipped:
Received: 2014/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	PH	3488932	N/A	2014/01/21	Surinder Rai
Chloride by Automated Colourimetry	AC	3489574	N/A	2014/01/23	Alina Dobreanu
Hardness (calculated as CaCO3)		3486992	N/A	2014/01/24	Automated Statchk
Dissolved Calcium and Magnesium	ICP	3490964	2014/01/23	2014/01/24	Jolly John
Total Ammonia-N	LACH/NH4	3489702	N/A	2014/01/23	Charles Opoku-Ware
Sulphate by Automated Colourimetry	AC	3489575	N/A	2014/01/23	Alina Dobreanu
Total Dissolved Solids	SLDS	3489869	N/A	2014/01/22	Subhashchandra Patel

Maxxam ID: UP3887
Sample ID: 13-107
Matrix: Water

Collected: 2014/01/15
Shipped:
Received: 2014/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	PH	3488932	N/A	2014/01/21	Surinder Rai
Chloride by Automated Colourimetry	AC	3489574	N/A	2014/01/23	Alina Dobreanu
Hardness (calculated as CaCO3)		3486992	N/A	2014/01/23	Automated Statchk
Dissolved Calcium and Magnesium	ICP	3490872	2014/01/23	2014/01/23	Jolly John
Total Ammonia-N	LACH/NH4	3489702	N/A	2014/01/23	Charles Opoku-Ware
Sulphate by Automated Colourimetry	AC	3489575	N/A	2014/01/23	Alina Dobreanu
Total Dissolved Solids	SLDS	3489869	N/A	2014/01/22	Subhashchandra Patel

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TEST SUMMARY

Maxxam ID: UP3887 Dup
Sample ID: 13-107
Matrix: Water

Collected: 2014/01/15
Shipped:
Received: 2014/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Calcium and Magnesium	ICP	3490872	2014/01/23	2014/01/23	Jolly John

Maxxam ID: UP3888
Sample ID: 2014-E
Matrix: Water

Collected: 2014/01/15
Shipped:
Received: 2014/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	PH	3488932	N/A	2014/01/21	Surinder Rai
Chloride by Automated Colourimetry	AC	3489574	N/A	2014/01/23	Alina Dobreanu
Hardness (calculated as CaCO3)		3486992	N/A	2014/01/24	Automated Statchk
Dissolved Calcium and Magnesium	ICP	3490964	2014/01/23	2014/01/24	Jolly John
Total Ammonia-N	LACH/NH4	3489702	N/A	2014/01/23	Charles Opoku-Ware
Sulphate by Automated Colourimetry	AC	3489575	N/A	2014/01/23	Alina Dobreanu
Total Dissolved Solids	SLDS	3489869	N/A	2014/01/22	Subhashchandra Patel

Maxxam ID: UP3889
Sample ID: 13-218C
Matrix: Water

Collected: 2014/01/17
Shipped:
Received: 2014/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3487262	N/A	2014/01/22	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3489807	N/A	2014/01/23	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3488228	2014/01/21	2014/01/22	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3488983	2014/01/21	2014/01/22	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3488123	N/A	2014/01/22	Sarah Lam
Non-Routine Volatile Organic Compounds	P&T/MS	3488108	N/A	2014/01/22	Sarah Lam

Maxxam ID: UP3889 Dup
Sample ID: 13-218C
Matrix: Water

Collected: 2014/01/17
Shipped:
Received: 2014/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	3488123	N/A	2014/01/22	Sarah Lam
Non-Routine Volatile Organic Compounds	P&T/MS	3488108	N/A	2014/01/22	Sarah Lam

Maxxam ID: UP3890
Sample ID: 13-106C
Matrix: Water

Collected: 2014/01/17
Shipped:
Received: 2014/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3487262	N/A	2014/01/22	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3488983	2014/01/21	2014/01/22	Darryl Tiller

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TEST SUMMARY

Maxxam ID: UP3891
Sample ID: 13-106C
Matrix: Water

Collected: 2014/01/16
Shipped:
Received: 2014/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3489807	N/A	2014/01/23	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3488228	2014/01/21	2014/01/22	Habiba Essak
Volatile Organic Compounds in Water	P&T/MS	3488123	N/A	2014/01/22	Sarah Lam
Non-Routine Volatile Organic Compounds	P&T/MS	3488108	N/A	2014/01/22	Sarah Lam

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GENERAL COMMENTS

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

Package 1	2.7°C

Custody seals were not present on the cooler.

For sample 13-107A, the following sample bottles contained visible sediment, which was included in the extraction:

2x 500mL amber glass bottles for F2-F4

For sample 13-211, the following sample bottes contained visible sediment, which was included in the analysis:

1x 500mL unpreserved plastic bottle for General Chemistry with 1.1cm of sediment
1x 500mL unpreserver plastic bottle for Solids with 2cm of sediment
1x 200mL plastic bottle for Nutrients
1x 120mL plastic bottle for Sulphide

For sample 13-107,the following sample bottes contained visible sediment, which was included in the analysis:

1x 500mL unpreserved plastic bottle for General Chemistry
1x 500mL unpreserver plastic bottle for Solids
1x 200mL plastic bottle for Nutrients
1x 120mL plastic bottle for Sulphide

For sample 2014-E,the following sample bottes contained visible sediment, which was included in the analysis:

1x 500mL unpreserved plastic bottle for General Chemistry
1x 500mL unpreserver plastic bottle for Solids
1x 200mL plastic bottle for Nutrients
1x 120mL plastic bottle for Sulphide

For sample 13-218C, the following sample bottles contained visible sediment, which was included in the extraction:

2x 500mL amber glass bottles for F2-F4
3x 40mL glass vials for F1/BTEX
2x 500mL amber glass bottles for PAHs
3x 40mL glass vials for VOCs

For sample 13-106C (sampled on 2014/01/17), the following samples contained visible sediment, which was included in the extraction:

2x 500mL amber glass bottles for PAHs

For sample 13-106C (sampled on 2014/01/16), the following samples contained visible sediment, which was included in the extraction:

1x 500mL amber glass bottle for F2-F4
2x 40mL glass vials for F1/BTEX
2x 40mL glass vials for VOCs

Sample UP3891-01 : VOC Water Analysis: Due to foaming, sample required dilution. The detection limits were adjusted accordingly.

F2-F4 analysis: Sample amber bottle was defective and thereby decanted into a new bottle. The sample volume recorded at 240mL, as per S_0

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
3488108	SLM	Matrix Spike	1,3,5-Trimethylbenzene	2014/01/22		97	%	60 - 140
3488108	SLM	Spiked Blank	1,3,5-Trimethylbenzene	2014/01/22		116	%	60 - 140
3488108	SLM	Method Blank	1,3,5-Trimethylbenzene	2014/01/22	ND, RDL=0.20		ug/L	
3488108	SLM	RPD [UP3889-05]	1,3,5-Trimethylbenzene	2014/01/22	NC		%	30
3488123	SLM	Matrix Spike [UP3885-05]	4-Bromofluorobenzene	2014/01/22		101	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/22		81	%	70 - 130
			D8-Toluene	2014/01/22		101	%	70 - 130
			Acetone (2-Propanone)	2014/01/22		62	%	60 - 140
			Benzene	2014/01/22		97	%	70 - 130
			Bromodichloromethane	2014/01/22		81	%	70 - 130
			Bromoform	2014/01/22		74	%	70 - 130
			Bromomethane	2014/01/22		98	%	60 - 140
			Carbon Tetrachloride	2014/01/22		88	%	70 - 130
			Chlorobenzene	2014/01/22		93	%	70 - 130
			Chloroform	2014/01/22		87	%	70 - 130
			Dibromochloromethane	2014/01/22		81	%	70 - 130
			1,2-Dichlorobenzene	2014/01/22		90	%	70 - 130
			1,3-Dichlorobenzene	2014/01/22		92	%	70 - 130
			1,4-Dichlorobenzene	2014/01/22		92	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/01/22		81	%	60 - 140
			1,1-Dichloroethane	2014/01/22		97	%	70 - 130
			1,2-Dichloroethane	2014/01/22		76	%	70 - 130
			1,1-Dichloroethylene	2014/01/22		102	%	70 - 130
			cis-1,2-Dichloroethylene	2014/01/22		94	%	70 - 130
			trans-1,2-Dichloroethylene	2014/01/22		99	%	70 - 130
			1,2-Dichloropropane	2014/01/22		98	%	70 - 130
			cis-1,3-Dichloropropene	2014/01/22		82	%	70 - 130
			trans-1,3-Dichloropropene	2014/01/22		82	%	70 - 130
			Ethylbenzene	2014/01/22		90	%	70 - 130
			Ethylene Dibromide	2014/01/22		82	%	70 - 130
			Hexane	2014/01/22		93	%	70 - 130
			Methylene Chloride(Dichloromethane)	2014/01/22		97	%	70 - 130
			Methyl Isobutyl Ketone	2014/01/22		67 (1)	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2014/01/22		66	%	60 - 140
			Methyl t-butyl ether (MTBE)	2014/01/22		71	%	70 - 130
			Styrene	2014/01/22		91	%	70 - 130
			1,1,1,2-Tetrachloroethane	2014/01/22		87	%	70 - 130
			1,1,2,2-Tetrachloroethane	2014/01/22		79	%	70 - 130
			Tetrachloroethylene	2014/01/22		106	%	70 - 130
			Toluene	2014/01/22		92	%	70 - 130
			1,1,1-Trichloroethane	2014/01/22		87	%	70 - 130
			1,1,2-Trichloroethane	2014/01/22		82	%	70 - 130
			Trichloroethylene	2014/01/22		100	%	70 - 130
			Vinyl Chloride	2014/01/22		91	%	70 - 130
			p+m-Xylene	2014/01/22		88	%	70 - 130
			o-Xylene	2014/01/22		85	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2014/01/22		86	%	70 - 130
3488123	SLM	Spiked Blank	4-Bromofluorobenzene	2014/01/22		101	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/22		87	%	70 - 130
			D8-Toluene	2014/01/22		98	%	70 - 130
			Acetone (2-Propanone)	2014/01/22		82	%	60 - 140
			Benzene	2014/01/22		99	%	70 - 130
			Bromodichloromethane	2014/01/22		89	%	70 - 130
			Bromoform	2014/01/22		85	%	70 - 130
			Bromomethane	2014/01/22		104	%	60 - 140
			Carbon Tetrachloride	2014/01/22		89	%	70 - 130
			Chlorobenzene	2014/01/22		94	%	70 - 130
			Chloroform	2014/01/22		90	%	70 - 130
			Dibromochloromethane	2014/01/22		89	%	70 - 130
			1,2-Dichlorobenzene	2014/01/22		93	%	70 - 130
			1,3-Dichlorobenzene	2014/01/22		92	%	70 - 130

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Report Date: 2014/01/28

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
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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	2014/01/22		92	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/01/22		83	%	60 - 140
			1,1-Dichloroethane	2014/01/22		98	%	70 - 130
			1,2-Dichloroethane	2014/01/22		85	%	70 - 130
			1,1-Dichloroethylene	2014/01/22		102	%	70 - 130
			cis-1,2-Dichloroethylene	2014/01/22		96	%	70 - 130
			trans-1,2-Dichloroethylene	2014/01/22		100	%	70 - 130
			1,2-Dichloropropane	2014/01/22		103	%	70 - 130
			cis-1,3-Dichloropropene	2014/01/22		89	%	70 - 130
			trans-1,3-Dichloropropene	2014/01/22		88	%	70 - 130
			Ethylbenzene	2014/01/22		87	%	70 - 130
			Ethylene Dibromide	2014/01/22		91	%	70 - 130
			Hexane	2014/01/22		99	%	70 - 130
			Methylene Chloride(Dichloromethane)	2014/01/22		102	%	70 - 130
			Methyl Isobutyl Ketone	2014/01/22		82	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2014/01/22		85	%	60 - 140
			Methyl t-butyl ether (MTBE)	2014/01/22		86	%	70 - 130
			Styrene	2014/01/22		92	%	70 - 130
			1,1,1,2-Tetrachloroethane	2014/01/22		90	%	70 - 130
			1,1,2,2-Tetrachloroethane	2014/01/22		91	%	70 - 130
			Tetrachloroethylene	2014/01/22		100	%	70 - 130
			Toluene	2014/01/22		90	%	70 - 130
			1,1,1-Trichloroethane	2014/01/22		88	%	70 - 130
			1,1,2-Trichloroethane	2014/01/22		90	%	70 - 130
			Trichloroethylene	2014/01/22		100	%	70 - 130
			Vinyl Chloride	2014/01/22		92	%	70 - 130
			p+m-Xylene	2014/01/22		85	%	70 - 130
			o-Xylene	2014/01/22		84	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2014/01/22		88	%	70 - 130
3488123	SLM	Method Blank	4-Bromofluorobenzene	2014/01/22		95	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/22		85	%	70 - 130
			D8-Toluene	2014/01/22		97	%	70 - 130
			Acetone (2-Propanone)	2014/01/22	ND, RDL=10		ug/L	
			Benzene	2014/01/22	ND, RDL=0.10		ug/L	
			Bromodichloromethane	2014/01/22	ND, RDL=0.10		ug/L	
			Bromoform	2014/01/22	ND, RDL=0.20		ug/L	
			Bromomethane	2014/01/22	ND, RDL=0.50		ug/L	
			Carbon Tetrachloride	2014/01/22	ND, RDL=0.10		ug/L	
			Chlorobenzene	2014/01/22	ND, RDL=0.10		ug/L	
			Chloroform	2014/01/22	ND, RDL=0.10		ug/L	
			Dibromochloromethane	2014/01/22	ND, RDL=0.20		ug/L	
			1,2-Dichlorobenzene	2014/01/22	ND, RDL=0.20		ug/L	
			1,3-Dichlorobenzene	2014/01/22	ND, RDL=0.20		ug/L	
			1,4-Dichlorobenzene	2014/01/22	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
			Dichlorodifluoromethane (FREON 12)	2014/01/22	ND, RDL=0.50		ug/L	
			1,1-Dichloroethane	2014/01/22	ND, RDL=0.10		ug/L	
			1,2-Dichloroethane	2014/01/22	ND, RDL=0.20		ug/L	
			1,1-Dichloroethylene	2014/01/22	ND, RDL=0.10		ug/L	
			cis-1,2-Dichloroethylene	2014/01/22	ND, RDL=0.10		ug/L	
			trans-1,2-Dichloroethylene	2014/01/22	ND, RDL=0.10		ug/L	
			1,2-Dichloropropane	2014/01/22	ND, RDL=0.10		ug/L	
			cis-1,3-Dichloropropene	2014/01/22	ND, RDL=0.20		ug/L	
			trans-1,3-Dichloropropene	2014/01/22	ND, RDL=0.20		ug/L	
			Ethylbenzene	2014/01/22	ND, RDL=0.10		ug/L	
			Ethylene Dibromide	2014/01/22	ND, RDL=0.20		ug/L	
			Hexane	2014/01/22	ND, RDL=0.50		ug/L	
			Methylene Chloride(Dichloromethane)	2014/01/22	ND, RDL=0.50		ug/L	
			Methyl Isobutyl Ketone	2014/01/22	ND, RDL=5.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2014/01/22	ND, RDL=5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2014/01/22	ND, RDL=0.20		ug/L	
			Styrene	2014/01/22	ND, RDL=0.20		ug/L	
			1,1,1,2-Tetrachloroethane	2014/01/22	ND, RDL=0.20		ug/L	
			1,1,2,2-Tetrachloroethane	2014/01/22	ND, RDL=0.20		ug/L	
			Tetrachloroethylene	2014/01/22	ND, RDL=0.10		ug/L	
			Toluene	2014/01/22	ND, RDL=0.20		ug/L	
			1,1,1-Trichloroethane	2014/01/22	ND, RDL=0.10		ug/L	
			1,1,2-Trichloroethane	2014/01/22	ND, RDL=0.20		ug/L	
			Trichloroethylene	2014/01/22	ND, RDL=0.10		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Vinyl Chloride	2014/01/22	ND, RDL=0.20		ug/L	
			p+m-Xylene	2014/01/22	ND, RDL=0.10		ug/L	
			o-Xylene	2014/01/22	ND, RDL=0.10		ug/L	
			Xylene (Total)	2014/01/22	ND, RDL=0.10		ug/L	
			Trichlorofluoromethane (FREON 11)	2014/01/22	ND, RDL=0.20		ug/L	
3488123	SLM	RPD [UP3889-05]	Acetone (2-Propanone)	2014/01/22	NC		%	30
			Benzene	2014/01/22	NC		%	30
			Bromodichloromethane	2014/01/22	NC		%	30
			Bromoform	2014/01/22	NC		%	30
			Bromomethane	2014/01/22	NC		%	30
			Carbon Tetrachloride	2014/01/22	NC		%	30
			Chlorobenzene	2014/01/22	NC		%	30
			Chloroform	2014/01/22	NC		%	30
			Dibromochloromethane	2014/01/22	NC		%	30
			1,2-Dichlorobenzene	2014/01/22	NC		%	30
			1,3-Dichlorobenzene	2014/01/22	NC		%	30
			1,4-Dichlorobenzene	2014/01/22	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2014/01/22	NC		%	30
			1,1-Dichloroethane	2014/01/22	NC		%	30
			1,2-Dichloroethane	2014/01/22	NC		%	30
			1,1-Dichloroethylene	2014/01/22	NC		%	30
			cis-1,2-Dichloroethylene	2014/01/22	NC		%	30
			trans-1,2-Dichloroethylene	2014/01/22	NC		%	30
			1,2-Dichloropropane	2014/01/22	NC		%	30
			cis-1,3-Dichloropropene	2014/01/22	NC		%	30
			trans-1,3-Dichloropropene	2014/01/22	NC		%	30
			Ethylbenzene	2014/01/22	NC		%	30
			Ethylene Dibromide	2014/01/22	NC		%	30
			Hexane	2014/01/22	NC		%	30
			Methylene Chloride(Dichloromethane)	2014/01/22	NC		%	30
			Methyl Isobutyl Ketone	2014/01/22	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2014/01/22	NC		%	30
			Methyl t-butyl ether (MTBE)	2014/01/22	NC		%	30
			Styrene	2014/01/22	NC		%	30
			1,1,1,2-Tetrachloroethane	2014/01/22	NC		%	30
			1,1,2,2-Tetrachloroethane	2014/01/22	NC		%	30
			Tetrachloroethylene	2014/01/22	NC		%	30
			Toluene	2014/01/22	NC		%	30
			1,1,1-Trichloroethane	2014/01/22	NC		%	30
			1,1,2-Trichloroethane	2014/01/22	NC		%	30
			Trichloroethylene	2014/01/22	NC		%	30
			Vinyl Chloride	2014/01/22	NC		%	30
			p+m-Xylene	2014/01/22	NC		%	30
			o-Xylene	2014/01/22	NC		%	30
			Xylene (Total)	2014/01/22	NC		%	30
			Trichlorofluoromethane (FREON 11)	2014/01/22	NC		%	30
3488228	HES	Matrix Spike	o-Terphenyl	2014/01/22		104	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2014/01/22		83	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/01/22		83	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/01/22		83	%	50 - 130
3488228	HES	Spiked Blank	o-Terphenyl	2014/01/22		97	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2014/01/22		81	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/01/22		81	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/01/22		81	%	60 - 130
3488228	HES	Method Blank	o-Terphenyl	2014/01/22		96	%	30 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			F2 (C10-C16 Hydrocarbons)	2014/01/22	ND, RDL=100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/01/22	ND, RDL=100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/01/22	ND, RDL=100		ug/L	
3488228	HES	RPD	F2 (C10-C16 Hydrocarbons)	2014/01/22	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2014/01/22	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2014/01/22	NC		%	50
3488932	SAU	Spiked Blank	Alkalinity (Total as CaCO3)	2014/01/21		94	%	85 - 115
3488932	SAU	Method Blank	Alkalinity (Total as CaCO3)	2014/01/21	ND, RDL=1.0		mg/L	
3488932	SAU	RPD	Alkalinity (Total as CaCO3)	2014/01/21	1.1		%	25
3488983	DTI	Matrix Spike	D10-Anthracene	2014/01/22		77	%	50 - 130
			D14-Terphenyl (FS)	2014/01/22		79	%	50 - 130
			D8-Acenaphthylene	2014/01/22		72	%	50 - 130
			Acenaphthene	2014/01/22		84	%	50 - 130
			Acenaphthylene	2014/01/22		79	%	50 - 130
			Anthracene	2014/01/22		84	%	50 - 130
			Benzo(a)anthracene	2014/01/22		94	%	50 - 130
			Benzo(a)pyrene	2014/01/22		97	%	50 - 130
			Benzo(b/j)fluoranthene	2014/01/22		97	%	50 - 130
			Benzo(g,h,i)perylene	2014/01/22		94	%	50 - 130
			Benzo(k)fluoranthene	2014/01/22		105	%	50 - 130
			Chrysene	2014/01/22		96	%	50 - 130
			Dibenz(a,h)anthracene	2014/01/22		89	%	50 - 130
			Fluoranthene	2014/01/22		94	%	50 - 130
			Fluorene	2014/01/22		85	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/01/22		94	%	50 - 130
			1-Methylnaphthalene	2014/01/22		75	%	50 - 130
			2-Methylnaphthalene	2014/01/22		70	%	50 - 130
			Naphthalene	2014/01/22		76	%	50 - 130
			Phenanthrene	2014/01/22		87	%	50 - 130
			Pyrene	2014/01/22		94	%	50 - 130
3488983	DTI	Spiked Blank	D10-Anthracene	2014/01/22		82	%	50 - 130
			D14-Terphenyl (FS)	2014/01/22		81	%	50 - 130
			D8-Acenaphthylene	2014/01/22		78	%	50 - 130
			Acenaphthene	2014/01/22		92	%	50 - 130
			Acenaphthylene	2014/01/22		88	%	50 - 130
			Anthracene	2014/01/22		89	%	50 - 130
			Benzo(a)anthracene	2014/01/22		94	%	50 - 130
			Benzo(a)pyrene	2014/01/22		97	%	50 - 130
			Benzo(b/j)fluoranthene	2014/01/22		102	%	50 - 130
			Benzo(g,h,i)perylene	2014/01/22		88	%	50 - 130
			Benzo(k)fluoranthene	2014/01/22		100	%	50 - 130
			Chrysene	2014/01/22		99	%	50 - 130
			Dibenz(a,h)anthracene	2014/01/22		78	%	50 - 130
			Fluoranthene	2014/01/22		97	%	50 - 130
			Fluorene	2014/01/22		93	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/01/22		92	%	50 - 130
			1-Methylnaphthalene	2014/01/22		84	%	50 - 130
			2-Methylnaphthalene	2014/01/22		77	%	50 - 130
			Naphthalene	2014/01/22		85	%	50 - 130
			Phenanthrene	2014/01/22		95	%	50 - 130
			Pyrene	2014/01/22		97	%	50 - 130
3488983	DTI	Method Blank	D10-Anthracene	2014/01/21		82	%	50 - 130
			D14-Terphenyl (FS)	2014/01/21		80	%	50 - 130
			D8-Acenaphthylene	2014/01/21		77	%	50 - 130
			Acenaphthene	2014/01/21	ND, RDL=0.010		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
			Acenaphthylene	2014/01/21	ND, RDL=0.010		ug/L	
			Anthracene	2014/01/21	ND, RDL=0.010		ug/L	
			Benzo(a)anthracene	2014/01/21	ND, RDL=0.010		ug/L	
			Benzo(a)pyrene	2014/01/21	ND, RDL=0.010		ug/L	
			Benzo(b/j)fluoranthene	2014/01/21	ND, RDL=0.010		ug/L	
			Benzo(g,h,i)perylene	2014/01/21	ND, RDL=0.010		ug/L	
			Benzo(k)fluoranthene	2014/01/21	ND, RDL=0.010		ug/L	
			Chrysene	2014/01/21	ND, RDL=0.010		ug/L	
			Dibenz(a,h)anthracene	2014/01/21	ND, RDL=0.010		ug/L	
			Fluoranthene	2014/01/21	ND, RDL=0.010		ug/L	
			Fluorene	2014/01/21	ND, RDL=0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2014/01/21	ND, RDL=0.010		ug/L	
			1-Methylnaphthalene	2014/01/21	ND, RDL=0.010		ug/L	
			2-Methylnaphthalene	2014/01/21	ND, RDL=0.010		ug/L	
			Naphthalene	2014/01/21	ND, RDL=0.010		ug/L	
			Phenanthrene	2014/01/21	ND, RDL=0.010		ug/L	
			Pyrene	2014/01/21	ND, RDL=0.010		ug/L	
3488983	DTI	RPD	Acenaphthene	2014/01/22	NC		%	30
			Acenaphthylene	2014/01/22	NC		%	30
			Anthracene	2014/01/22	NC		%	30
			Benzo(a)anthracene	2014/01/22	NC		%	30
			Benzo(a)pyrene	2014/01/22	NC		%	30
			Benzo(b/j)fluoranthene	2014/01/22	NC		%	30
			Benzo(g,h,i)perylene	2014/01/22	NC		%	30
			Benzo(k)fluoranthene	2014/01/22	NC		%	30
			Chrysene	2014/01/22	NC		%	30
			Dibenz(a,h)anthracene	2014/01/22	NC		%	30
			Fluoranthene	2014/01/22	NC		%	30
			Fluorene	2014/01/22	NC		%	30
			Indeno(1,2,3-cd)pyrene	2014/01/22	NC		%	30
			1-Methylnaphthalene	2014/01/22	NC		%	30
			2-Methylnaphthalene	2014/01/22	NC		%	30
			Naphthalene	2014/01/22	NC		%	30
			Phenanthrene	2014/01/22	NC		%	30
			Pyrene	2014/01/22	NC		%	30
3489574	ADB	Matrix Spike	Dissolved Chloride (Cl)	2014/01/23		NC	%	80 - 120

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Maxxam Job #: B409136
Report Date: 2014/01/28

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3489574	ADB	Spiked Blank	Dissolved Chloride (Cl)	2014/01/23		101	%	80 - 120
3489574	ADB	Method Blank	Dissolved Chloride (Cl)	2014/01/23	ND, RDL=1		mg/L	
3489574	ADB	RPD	Dissolved Chloride (Cl)	2014/01/23	1		%	20
3489575	ADB	Matrix Spike	Dissolved Sulphate (SO4)	2014/01/23		NC	%	75 - 125
3489575	ADB	Spiked Blank	Dissolved Sulphate (SO4)	2014/01/23		101	%	80 - 120
3489575	ADB	Method Blank	Dissolved Sulphate (SO4)	2014/01/23	ND, RDL=1		mg/L	
3489575	ADB	RPD	Dissolved Sulphate (SO4)	2014/01/23	17.3		%	20
3489702	COP	Matrix Spike	Total Ammonia-N	2014/01/23		97	%	80 - 120
3489702	COP	Spiked Blank	Total Ammonia-N	2014/01/23		95	%	85 - 115
3489702	COP	Method Blank	Total Ammonia-N	2014/01/23	ND, RDL=0.050		mg/L	
3489702	COP	RPD	Total Ammonia-N	2014/01/23	2.3		%	20
3489807	LHR	Matrix Spike [UP3889-02]	1,4-Difluorobenzene	2014/01/23		99	%	70 - 130
			4-Bromofluorobenzene	2014/01/23		87	%	70 - 130
			D10-Ethylbenzene	2014/01/23		118	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/23		108	%	70 - 130
			F1 (C6-C10)	2014/01/23		100	%	70 - 130
3489807	LHR	Spiked Blank	1,4-Difluorobenzene	2014/01/23		101	%	70 - 130
			4-Bromofluorobenzene	2014/01/23		96	%	70 - 130
			D10-Ethylbenzene	2014/01/23		120	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/23		123	%	70 - 130
			F1 (C6-C10)	2014/01/23		99	%	70 - 130
3489807	LHR	Method Blank	1,4-Difluorobenzene	2014/01/23		108	%	70 - 130
			4-Bromofluorobenzene	2014/01/23		96	%	70 - 130
			D10-Ethylbenzene	2014/01/23		115	%	70 - 130
			D4-1,2-Dichloroethane	2014/01/23		117	%	70 - 130
			F1 (C6-C10)	2014/01/23	ND, RDL=25		ug/L	
			F1 (C6-C10) - BTEX	2014/01/23	ND, RDL=25		ug/L	
3489807	LHR	RPD [UP3885-02]	F1 (C6-C10)	2014/01/23	NC		%	40
			F1 (C6-C10) - BTEX	2014/01/23	NC		%	40
3489869	SUP	QC Standard	Total Dissolved Solids	2014/01/22		97	%	90 - 110
3489869	SUP	Method Blank	Total Dissolved Solids	2014/01/22	ND, RDL=10		mg/L	
3489869	SUP	RPD	Total Dissolved Solids	2014/01/22	2.6		%	25
3490872	JOH	Matrix Spike [UP3887-01]	Dissolved Calcium (Ca)	2014/01/23		NC	%	80 - 120
			Dissolved Magnesium (Mg)	2014/01/23		NC	%	80 - 120
3490872	JOH	Spiked Blank	Dissolved Calcium (Ca)	2014/01/23		103	%	80 - 120
			Dissolved Magnesium (Mg)	2014/01/23		103	%	80 - 120
3490872	JOH	Method Blank	Dissolved Calcium (Ca)	2014/01/23	ND, RDL=0.0500		mg/L	
			Dissolved Magnesium (Mg)	2014/01/23	ND, RDL=0.0500		mg/L	
3490872	JOH	RPD [UP3887-01]	Dissolved Calcium (Ca)	2014/01/23	1		%	25
			Dissolved Magnesium (Mg)	2014/01/23	0.9		%	25
3490964	JOH	Matrix Spike	Dissolved Calcium (Ca)	2014/01/24		NC	%	80 - 120
			Dissolved Magnesium (Mg)	2014/01/24		93	%	80 - 120
3490964	JOH	Spiked Blank	Dissolved Calcium (Ca)	2014/01/24		103	%	80 - 120
			Dissolved Magnesium (Mg)	2014/01/24		102	%	80 - 120
3490964	JOH	Method Blank	Dissolved Calcium (Ca)	2014/01/24	ND, RDL=0.0500		mg/L	

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Report Date: 2014/01/28

Stantec Consulting Ltd
Client Project #: 163401060
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Dissolved Magnesium (Mg)	2014/01/24	ND, RDL=0.0500		mg/L	

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.

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 not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) 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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VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Scientific Services

Paul Rubinato, Analyst, Maxxam Analytics

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Success Through Science®

Your P.O. #: 16300R-20
Your Project #: 163401060
Site Location: CSST
Your C.O.C. #: 22266

Attention:Jean-Philippe Gobeil

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2014/02/04
Report #: R2837229
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B416574
Received: 2014/01/31, 16:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
1,3-Dichloropropene Sum (1)	1	N/A	2014/02/04	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2014/02/03	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	1	2014/02/03	2014/02/03	OTT SOP-00001	CCME Hydrocarbons
PAH Compounds in Water by GC/MS (SIM) (1)	1	2014/02/03	2014/02/03	CAM SOP-00318	EPA 8270
Volatile Organic Compounds in Water (1)	1	N/A	2014/02/04	CAM SOP-00226	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* 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

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Your P.O. #: 16300R-20
Your Project #: 163401060
Site Location: CSST
Your C.O.C. #: 22266

Attention:Jean-Philippe Gobeil

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2014/02/04
Report #: R2837229
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B416574
Received: 2014/01/31, 16:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

This report has been generated and distributed using a secure automated process.
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Maxxam Job #: B416574
Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		UT1812	UT1812		
Sampling Date		2014/01/31 14:00	2014/01/31 14:00		
COC Number		22266	22266		
	Units	13-229	13-229 Lab-Dup	RDL	QC Batch
Polyaromatic Hydrocarbons					
Acenaphthene	ug/L	ND	ND	0.010	3501133
Acenaphthylene	ug/L	ND	ND	0.010	3501133
Anthracene	ug/L	ND	ND	0.010	3501133
Benzo(a)anthracene	ug/L	ND	ND	0.010	3501133
Benzo(a)pyrene	ug/L	ND	ND	0.010	3501133
Benzo(b/j)fluoranthene	ug/L	ND	ND	0.010	3501133
Benzo(g,h,i)perylene	ug/L	ND	ND	0.010	3501133
Benzo(k)fluoranthene	ug/L	ND	ND	0.010	3501133
Chrysene	ug/L	ND	ND	0.010	3501133
Dibenz(a,h)anthracene	ug/L	ND	ND	0.010	3501133
Fluoranthene	ug/L	0.015	0.013	0.010	3501133
Fluorene	ug/L	ND	ND	0.010	3501133
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	0.010	3501133
1-Methylnaphthalene	ug/L	ND	ND	0.010	3501133
2-Methylnaphthalene	ug/L	ND	ND	0.010	3501133
Naphthalene	ug/L	ND	ND	0.010	3501133
Phenanthrene	ug/L	0.017	0.012	0.010	3501133
Pyrene	ug/L	0.023	0.020	0.010	3501133
Surrogate Recovery (%)					
D10-Anthracene	%	59	62		3501133
D14-Terphenyl (FS)	%	48 (1)	54		3501133
D8-Acenaphthylene	%	53	57		3501133

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected
(1) Surrogate recovery was below the lower control limit due to matrix interference. This may represent a low bias in some results.

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Maxxam Job #: B416574
Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

O'REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		UT1812		
Sampling Date		2014/01/31 14:00		
COC Number		22266		
	Units	**13-229**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
Benzene	ug/L	ND	0.20	3499303
Toluene	ug/L	0.37	0.20	3499303
Ethylbenzene	ug/L	ND	0.20	3499303
o-Xylene	ug/L	0.28	0.20	3499303
p+m-Xylene	ug/L	0.63	0.40	3499303
Total Xylenes	ug/L	0.90	0.40	3499303
F1 (C6-C10)	ug/L	ND	25	3499303
F1 (C6-C10) - BTEX	ug/L	ND	25	3499303
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	ND	100	3501145
F3 (C16-C34 Hydrocarbons)	ug/L	ND	100	3501145
F4 (C34-C50 Hydrocarbons)	ug/L	ND	100	3501145
Reached Baseline at C50	ug/L	Yes		3501145
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	104		3499303
4-Bromofluorobenzene	%	108		3499303
D10-Ethylbenzene	%	97		3499303
D4-1,2-Dichloroethane	%	89		3499303
o-Terphenyl	%	80		3501145

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

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Maxxam Job #: B416574
Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
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Sampler Initials: LB

O'REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		UT1812	UT1812		
Sampling Date		2014/01/31 14:00	2014/01/31 14:00		
COC Number		22266	22266		
	Units	13-229	13-229 Lab-Dup	RDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/L	ND		0.28	3499823
Volatile Organics					
Acetone (2-Propanone)	ug/L	14	14	10	3498625
Benzene	ug/L	ND	ND	0.10	3498625
Bromodichloromethane	ug/L	ND	ND	0.10	3498625
Bromoform	ug/L	ND	ND	0.20	3498625
Bromomethane	ug/L	ND	ND	0.50	3498625
Carbon Tetrachloride	ug/L	ND	ND	0.10	3498625
Chlorobenzene	ug/L	ND	ND	0.10	3498625
Chloroform	ug/L	0.32	0.30	0.10	3498625
Dibromochloromethane	ug/L	ND	ND	0.20	3498625
1,2-Dichlorobenzene	ug/L	ND	ND	0.20	3498625
1,3-Dichlorobenzene	ug/L	ND	ND	0.20	3498625
1,4-Dichlorobenzene	ug/L	ND	ND	0.20	3498625
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	0.50	3498625
1,1-Dichloroethane	ug/L	ND	ND	0.10	3498625
1,2-Dichloroethane	ug/L	ND	ND	0.20	3498625
1,1-Dichloroethylene	ug/L	ND	ND	0.10	3498625
cis-1,2-Dichloroethylene	ug/L	ND	ND	0.10	3498625
trans-1,2-Dichloroethylene	ug/L	ND	ND	0.10	3498625
1,2-Dichloropropane	ug/L	ND	ND	0.10	3498625
cis-1,3-Dichloropropene	ug/L	ND	ND	0.20	3498625
trans-1,3-Dichloropropene	ug/L	ND	ND	0.20	3498625
Ethylbenzene	ug/L	ND	ND	0.10	3498625
Ethylene Dibromide	ug/L	ND	ND	0.20	3498625
Hexane	ug/L	ND	ND	0.50	3498625
Methylene Chloride(Dichloromethane)	ug/L	1.1	1.1	0.50	3498625
Methyl Isobutyl Ketone	ug/L	ND	ND	5.0	3498625
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	5.0	3498625
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	0.20	3498625
Styrene	ug/L	ND	ND	0.20	3498625

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Maxxam Job #: B416574
Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

O'REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		UT1812	UT1812		
Sampling Date		2014/01/31 14:00	2014/01/31 14:00		
COC Number		22266	22266		
	Units	**13-229**	**13-229 Lab-Dup**	**RDL**	**QC Batch**
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	0.20	3498625
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	0.20	3498625
Tetrachloroethylene	ug/L	ND	ND	0.10	3498625
Toluene	ug/L	0.28	0.29	0.20	3498625
1,1,1-Trichloroethane	ug/L	ND	ND	0.10	3498625
1,1,2-Trichloroethane	ug/L	ND	ND	0.20	3498625
Trichloroethylene	ug/L	ND	ND	0.10	3498625
Vinyl Chloride	ug/L	ND	ND	0.20	3498625
p+m-Xylene	ug/L	0.48	0.47	0.10	3498625
o-Xylene	ug/L	0.19	0.19	0.10	3498625
Xylene (Total)	ug/L	0.67	0.66	0.10	3498625
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	0.20	3498625
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	99	100		3498625
D4-1,2-Dichloroethane	%	99	99		3498625
D8-Toluene	%	97	96		3498625

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Maxxam Job #: B416574
Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

TEST SUMMARY

Maxxam ID: UT1812
Sample ID: 13-229
Matrix: Water

Collected: 2014/01/31
Shipped:
Received: 2014/01/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	3499823	N/A	2014/02/04	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3499303	N/A	2014/02/03	Lyndsey Hart
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3501145	2014/02/03	2014/02/03	Habiba Essak
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3501133	2014/02/03	2014/02/03	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3498625	N/A	2014/02/04	Blair Gannon

Maxxam ID: UT1812 Dup
Sample ID: 13-229
Matrix: Water

Collected: 2014/01/31
Shipped:
Received: 2014/01/31

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Water by GC/MS (SIM)	GC/MS	3501133	2014/02/03	2014/02/03	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3498625	N/A	2014/02/04	Blair Gannon

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Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

GENERAL COMMENTS

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

Package 1	4.0°C

Custody seal was not present or intact on cooler.

The following bottles for sample 13-229 contained visible sediment which was included in the analysis.
2 X500 ml glass amber bottles for F2-F4, 3 X 40 ml vial for F1, 2X 500 ml glass amber bottles for PAHs, 3 X 40 ml bottles for VOCs.

Results relate only to the items tested.

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Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3498625	BG1	Matrix Spike	4-Bromofluorobenzene	2014/02/04		103	%	70 - 130
			D4-1,2-Dichloroethane	2014/02/04		95	%	70 - 130
			D8-Toluene	2014/02/04		100	%	70 - 130
			Acetone (2-Propanone)	2014/02/04		87	%	60 - 140
			Benzene	2014/02/04		91	%	70 - 130
			Bromodichloromethane	2014/02/04		92	%	70 - 130
			Bromoform	2014/02/04		93	%	70 - 130
			Bromomethane	2014/02/04		94	%	60 - 140
			Carbon Tetrachloride	2014/02/04		91	%	70 - 130
			Chlorobenzene	2014/02/04		91	%	70 - 130
			Chloroform	2014/02/04		89	%	70 - 130
			Dibromochloromethane	2014/02/04		94	%	70 - 130
			1,2-Dichlorobenzene	2014/02/04		92	%	70 - 130
			1,3-Dichlorobenzene	2014/02/04		91	%	70 - 130
			1,4-Dichlorobenzene	2014/02/04		88	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/02/04		77	%	60 - 140
			1,1-Dichloroethane	2014/02/04		90	%	70 - 130
			1,2-Dichloroethane	2014/02/04		89	%	70 - 130
			1,1-Dichloroethylene	2014/02/04		97	%	70 - 130
			cis-1,2-Dichloroethylene	2014/02/04		89	%	70 - 130
			trans-1,2-Dichloroethylene	2014/02/04		86	%	70 - 130
			1,2-Dichloropropane	2014/02/04		91	%	70 - 130
			cis-1,3-Dichloropropene	2014/02/04		87	%	70 - 130
			trans-1,3-Dichloropropene	2014/02/04		93	%	70 - 130
			Ethylbenzene	2014/02/04		92	%	70 - 130
			Ethylene Dibromide	2014/02/04		93	%	70 - 130
			Hexane	2014/02/04		87	%	70 - 130
			Methylene Chloride(Dichloromethane)	2014/02/04		92	%	70 - 130
			Methyl Isobutyl Ketone	2014/02/04		95	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2014/02/04		90	%	60 - 140
			Methyl t-butyl ether (MTBE)	2014/02/04		88	%	70 - 130
			Styrene	2014/02/04		100	%	70 - 130
			1,1,1,2-Tetrachloroethane	2014/02/04		91	%	70 - 130
			1,1,2,2-Tetrachloroethane	2014/02/04		94	%	70 - 130
			Tetrachloroethylene	2014/02/04		94	%	70 - 130
			Toluene	2014/02/04		87	%	70 - 130
			1,1,1-Trichloroethane	2014/02/04		91	%	70 - 130
			1,1,2-Trichloroethane	2014/02/04		89	%	70 - 130
			Trichloroethylene	2014/02/04		92	%	70 - 130
			Vinyl Chloride	2014/02/04		79	%	70 - 130
			p+m-Xylene	2014/02/04		NC	%	70 - 130
			o-Xylene	2014/02/04		NC	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2014/02/04		89	%	70 - 130
3498625	BG1	Spiked Blank	4-Bromofluorobenzene	2014/02/04		103	%	70 - 130
			D4-1,2-Dichloroethane	2014/02/04		97	%	70 - 130
			D8-Toluene	2014/02/04		100	%	70 - 130
			Acetone (2-Propanone)	2014/02/04		88	%	60 - 140
			Benzene	2014/02/04		97	%	70 - 130
			Bromodichloromethane	2014/02/04		100	%	70 - 130
			Bromoform	2014/02/04		101	%	70 - 130
			Bromomethane	2014/02/04		101	%	60 - 140
			Carbon Tetrachloride	2014/02/04		98	%	70 - 130
			Chlorobenzene	2014/02/04		100	%	70 - 130
			Chloroform	2014/02/04		96	%	70 - 130
			Dibromochloromethane	2014/02/04		105	%	70 - 130
			1,2-Dichlorobenzene	2014/02/04		102	%	70 - 130
			1,3-Dichlorobenzene	2014/02/04		98	%	70 - 130
			1,4-Dichlorobenzene	2014/02/04		97	%	70 - 130
			Dichlorodifluoromethane (FREON 12)	2014/02/04		80	%	60 - 140
			1,1-Dichloroethane	2014/02/04		97	%	70 - 130
			1,2-Dichloroethane	2014/02/04		97	%	70 - 130

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Maxxam Job #: B416574
Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			1,1-Dichloroethylene	2014/02/04		104	%	70 - 130
			cis-1,2-Dichloroethylene	2014/02/04		96	%	70 - 130
			trans-1,2-Dichloroethylene	2014/02/04		96	%	70 - 130
			1,2-Dichloropropane	2014/02/04		99	%	70 - 130
			cis-1,3-Dichloropropene	2014/02/04		94	%	70 - 130
			trans-1,3-Dichloropropene	2014/02/04		103	%	70 - 130
			Ethylbenzene	2014/02/04		96	%	70 - 130
			Ethylene Dibromide	2014/02/04		101	%	70 - 130
			Hexane	2014/02/04		95	%	70 - 130
			Methylene Chloride(Dichloromethane)	2014/02/04		99	%	70 - 130
			Methyl Isobutyl Ketone	2014/02/04		98	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2014/02/04		93	%	60 - 140
			Methyl t-butyl ether (MTBE)	2014/02/04		98	%	70 - 130
			Styrene	2014/02/04		106	%	70 - 130
			1,1,1,2-Tetrachloroethane	2014/02/04		100	%	70 - 130
			1,1,2,2-Tetrachloroethane	2014/02/04		102	%	70 - 130
			Tetrachloroethylene	2014/02/04		102	%	70 - 130
			Toluene	2014/02/04		94	%	70 - 130
			1,1,1-Trichloroethane	2014/02/04		96	%	70 - 130
			1,1,2-Trichloroethane	2014/02/04		99	%	70 - 130
			Trichloroethylene	2014/02/04		99	%	70 - 130
			Vinyl Chloride	2014/02/04		84	%	70 - 130
			p+m-Xylene	2014/02/04		99	%	70 - 130
			o-Xylene	2014/02/04		99	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2014/02/04		95	%	70 - 130
3498625	BG1	Method Blank	4-Bromofluorobenzene	2014/02/04		96	%	70 - 130
			D4-1,2-Dichloroethane	2014/02/04		98	%	70 - 130
			D8-Toluene	2014/02/04		97	%	70 - 130
			Acetone (2-Propanone)	2014/02/04	ND, RDL=10		ug/L	
			Benzene	2014/02/04	ND, RDL=0.10		ug/L	
			Bromodichloromethane	2014/02/04	ND, RDL=0.10		ug/L	
			Bromoform	2014/02/04	ND, RDL=0.20		ug/L	
			Bromomethane	2014/02/04	ND, RDL=0.50		ug/L	
			Carbon Tetrachloride	2014/02/04	ND, RDL=0.10		ug/L	
			Chlorobenzene	2014/02/04	ND, RDL=0.10		ug/L	
			Chloroform	2014/02/04	ND, RDL=0.10		ug/L	
			Dibromochloromethane	2014/02/04	ND, RDL=0.20		ug/L	
			1,2-Dichlorobenzene	2014/02/04	ND, RDL=0.20		ug/L	
			1,3-Dichlorobenzene	2014/02/04	ND, RDL=0.20		ug/L	
			1,4-Dichlorobenzene	2014/02/04	ND, RDL=0.20		ug/L	
			Dichlorodifluoromethane (FREON 12)	2014/02/04	ND, RDL=0.50		ug/L	

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Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			1,1-Dichloroethane	2014/02/04	ND, RDL=0.10		ug/L	
			1,2-Dichloroethane	2014/02/04	ND, RDL=0.20		ug/L	
			1,1-Dichloroethylene	2014/02/04	ND, RDL=0.10		ug/L	
			cis-1,2-Dichloroethylene	2014/02/04	ND, RDL=0.10		ug/L	
			trans-1,2-Dichloroethylene	2014/02/04	ND, RDL=0.10		ug/L	
			1,2-Dichloropropane	2014/02/04	ND, RDL=0.10		ug/L	
			cis-1,3-Dichloropropene	2014/02/04	ND, RDL=0.20		ug/L	
			trans-1,3-Dichloropropene	2014/02/04	ND, RDL=0.20		ug/L	
			Ethylbenzene	2014/02/04	ND, RDL=0.10		ug/L	
			Ethylene Dibromide	2014/02/04	ND, RDL=0.20		ug/L	
			Hexane	2014/02/04	ND, RDL=0.50		ug/L	
			Methylene Chloride(Dichloromethane)	2014/02/04	ND, RDL=0.50		ug/L	
			Methyl Isobutyl Ketone	2014/02/04	ND, RDL=5.0		ug/L	
			Methyl Ethyl Ketone (2-Butanone)	2014/02/04	ND, RDL=5.0		ug/L	
			Methyl t-butyl ether (MTBE)	2014/02/04	ND, RDL=0.20		ug/L	
			Styrene	2014/02/04	ND, RDL=0.20		ug/L	
			1,1,1,2-Tetrachloroethane	2014/02/04	ND, RDL=0.20		ug/L	
			1,1,2,2-Tetrachloroethane	2014/02/04	ND, RDL=0.20		ug/L	
			Tetrachloroethylene	2014/02/04	ND, RDL=0.10		ug/L	
			Toluene	2014/02/04	ND, RDL=0.20		ug/L	
			1,1,1-Trichloroethane	2014/02/04	ND, RDL=0.10		ug/L	
			1,1,2-Trichloroethane	2014/02/04	ND, RDL=0.20		ug/L	
			Trichloroethylene	2014/02/04	ND, RDL=0.10		ug/L	
			Vinyl Chloride	2014/02/04	ND, RDL=0.20		ug/L	

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Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			p+m-Xylene	2014/02/04	ND, RDL=0.10		ug/L	
			o-Xylene	2014/02/04	ND, RDL=0.10		ug/L	
			Xylene (Total)	2014/02/04	ND, RDL=0.10		ug/L	
			Trichlorofluoromethane (FREON 11)	2014/02/04	ND, RDL=0.20		ug/L	
3498625	BG1	RPD [UT1812-05]	Acetone (2-Propanone)	2014/02/04	NC		%	30
			Benzene	2014/02/04	NC		%	30
			Bromodichloromethane	2014/02/04	NC		%	30
			Bromoform	2014/02/04	NC		%	30
			Bromomethane	2014/02/04	NC		%	30
			Carbon Tetrachloride	2014/02/04	NC		%	30
			Chlorobenzene	2014/02/04	NC		%	30
			Chloroform	2014/02/04	NC		%	30
			Dibromochloromethane	2014/02/04	NC		%	30
			1,2-Dichlorobenzene	2014/02/04	NC		%	30
			1,3-Dichlorobenzene	2014/02/04	NC		%	30
			1,4-Dichlorobenzene	2014/02/04	NC		%	30
			Dichlorodifluoromethane (FREON 12)	2014/02/04	NC		%	30
			1,1-Dichloroethane	2014/02/04	NC		%	30
			1,2-Dichloroethane	2014/02/04	NC		%	30
			1,1-Dichloroethylene	2014/02/04	NC		%	30
			cis-1,2-Dichloroethylene	2014/02/04	NC		%	30
			trans-1,2-Dichloroethylene	2014/02/04	NC		%	30
			1,2-Dichloropropane	2014/02/04	NC		%	30
			cis-1,3-Dichloropropene	2014/02/04	NC		%	30
			trans-1,3-Dichloropropene	2014/02/04	NC		%	30
			Ethylbenzene	2014/02/04	NC		%	30
			Ethylene Dibromide	2014/02/04	NC		%	30
			Hexane	2014/02/04	NC		%	30
			Methylene Chloride(Dichloromethane)	2014/02/04	NC		%	30
			Methyl Isobutyl Ketone	2014/02/04	NC		%	30
			Methyl Ethyl Ketone (2-Butanone)	2014/02/04	NC		%	30
			Methyl t-butyl ether (MTBE)	2014/02/04	NC		%	30
			Styrene	2014/02/04	NC		%	30
			1,1,1,2-Tetrachloroethane	2014/02/04	NC		%	30
			1,1,2,2-Tetrachloroethane	2014/02/04	NC		%	30
			Tetrachloroethylene	2014/02/04	NC		%	30
			Toluene	2014/02/04	NC		%	30
			1,1,1-Trichloroethane	2014/02/04	NC		%	30
			1,1,2-Trichloroethane	2014/02/04	NC		%	30
			Trichloroethylene	2014/02/04	NC		%	30
			Vinyl Chloride	2014/02/04	NC		%	30
			p+m-Xylene	2014/02/04	NC		%	30
			o-Xylene	2014/02/04	NC		%	30
			Xylene (Total)	2014/02/04	1.9		%	30
			Trichlorofluoromethane (FREON 11)	2014/02/04	NC		%	30
3499303	LHR	Matrix Spike	1,4-Difluorobenzene	2014/02/03		97	%	70 - 130
			4-Bromofluorobenzene	2014/02/03		102	%	70 - 130
			D10-Ethylbenzene	2014/02/03		111	%	70 - 130
			D4-1,2-Dichloroethane	2014/02/03		86	%	70 - 130
			Benzene	2014/02/03		85	%	70 - 130
			Toluene	2014/02/03		92	%	70 - 130
			Ethylbenzene	2014/02/03		89	%	70 - 130
			o-Xylene	2014/02/03		101	%	70 - 130
			p+m-Xylene	2014/02/03		95	%	70 - 130
			F1 (C6-C10)	2014/02/03		101	%	70 - 130

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Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3499303	LHR	Spiked Blank	1,4-Difluorobenzene	2014/02/03		96	%	70 - 130
			4-Bromofluorobenzene	2014/02/03		101	%	70 - 130
			D10-Ethylbenzene	2014/02/03		93	%	70 - 130
			D4-1,2-Dichloroethane	2014/02/03		89	%	70 - 130
			Benzene	2014/02/03		75	%	70 - 130
			Toluene	2014/02/03		83	%	70 - 130
			Ethylbenzene	2014/02/03		79	%	70 - 130
			o-Xylene	2014/02/03		92	%	70 - 130
			p+m-Xylene	2014/02/03		83	%	70 - 130
			F1 (C6-C10)	2014/02/03		105	%	70 - 130
3499303	LHR	Method Blank	1,4-Difluorobenzene	2014/02/03		95	%	70 - 130
			4-Bromofluorobenzene	2014/02/03		97	%	70 - 130
			D10-Ethylbenzene	2014/02/03		99	%	70 - 130
			D4-1,2-Dichloroethane	2014/02/03		86	%	70 - 130
			Benzene	2014/02/03	ND, RDL=0.20		ug/L	
			Toluene	2014/02/03	ND, RDL=0.20		ug/L	
			Ethylbenzene	2014/02/03	ND, RDL=0.20		ug/L	
			o-Xylene	2014/02/03	ND, RDL=0.20		ug/L	
			p+m-Xylene	2014/02/03	ND, RDL=0.40		ug/L	
			Total Xylenes	2014/02/03	ND, RDL=0.40		ug/L	
			F1 (C6-C10)	2014/02/03	ND, RDL=25		ug/L	
			F1 (C6-C10) - BTEX	2014/02/03	ND, RDL=25		ug/L	
3499303	LHR	RPD	Benzene	2014/02/03	NC		%	40
			Toluene	2014/02/03	NC		%	40
			Ethylbenzene	2014/02/03	NC		%	40
			o-Xylene	2014/02/03	NC		%	40
			p+m-Xylene	2014/02/03	NC		%	40
			Total Xylenes	2014/02/03	NC		%	40
			F1 (C6-C10)	2014/02/03	NC		%	40
			F1 (C6-C10) - BTEX	2014/02/03	NC		%	40
3501133	DTI	Matrix Spike	D10-Anthracene	2014/02/03		71	%	50 - 130
			D14-Terphenyl (FS)	2014/02/03		76	%	50 - 130
			D8-Acenaphthylene	2014/02/03		71	%	50 - 130
			Acenaphthene	2014/02/03		78	%	50 - 130
			Acenaphthylene	2014/02/03		76	%	50 - 130
			Anthracene	2014/02/03		76	%	50 - 130
			Benzo(a)anthracene	2014/02/03		89	%	50 - 130
			Benzo(a)pyrene	2014/02/03		87	%	50 - 130
			Benzo(b/j)fluoranthene	2014/02/03		89	%	50 - 130
			Benzo(g,h,i)perylene	2014/02/03		81	%	50 - 130
			Benzo(k)fluoranthene	2014/02/03		91	%	50 - 130
			Chrysene	2014/02/03		86	%	50 - 130
			Dibenz(a,h)anthracene	2014/02/03		73	%	50 - 130
			Fluoranthene	2014/02/03		86	%	50 - 130
			Fluorene	2014/02/03		82	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/02/03		83	%	50 - 130
			1-Methylnaphthalene	2014/02/03		74	%	50 - 130
			2-Methylnaphthalene	2014/02/03		90	%	50 - 130
			Naphthalene	2014/02/03		77	%	50 - 130

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Report Date: 2014/02/04

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Phenanthrene	2014/02/03		77	%	50 - 130
			Pyrene	2014/02/03		85	%	50 - 130
3501133	DTI	Spiked Blank	D10-Anthracene	2014/02/03		82	%	50 - 130
			D14-Terphenyl (FS)	2014/02/03		80	%	50 - 130
			D8-Acenaphthylene	2014/02/03		78	%	50 - 130
			Acenaphthene	2014/02/03		87	%	50 - 130
			Acenaphthylene	2014/02/03		85	%	50 - 130
			Anthracene	2014/02/03		85	%	50 - 130
			Benzo(a)anthracene	2014/02/03		93	%	50 - 130
			Benzo(a)pyrene	2014/02/03		87	%	50 - 130
			Benzo(b/j)fluoranthene	2014/02/03		89	%	50 - 130
			Benzo(g,h,i)perylene	2014/02/03		73	%	50 - 130
			Benzo(k)fluoranthene	2014/02/03		92	%	50 - 130
			Chrysene	2014/02/03		90	%	50 - 130
			Dibenz(a,h)anthracene	2014/02/03		71	%	50 - 130
			Fluoranthene	2014/02/03		92	%	50 - 130
			Fluorene	2014/02/03		89	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/02/03		80	%	50 - 130
			1-Methylnaphthalene	2014/02/03		85	%	50 - 130
			2-Methylnaphthalene	2014/02/03		102	%	50 - 130
			Naphthalene	2014/02/03		86	%	50 - 130
			Phenanthrene	2014/02/03		87	%	50 - 130
			Pyrene	2014/02/03		90	%	50 - 130
3501133	DTI	Method Blank	D10-Anthracene	2014/02/03		83	%	50 - 130
			D14-Terphenyl (FS)	2014/02/03		81	%	50 - 130
			D8-Acenaphthylene	2014/02/03		82	%	50 - 130
			Acenaphthene	2014/02/03	ND, RDL=0.010		ug/L	
			Acenaphthylene	2014/02/03	ND, RDL=0.010		ug/L	
			Anthracene	2014/02/03	ND, RDL=0.010		ug/L	
			Benzo(a)anthracene	2014/02/03	ND, RDL=0.010		ug/L	
			Benzo(a)pyrene	2014/02/03	ND, RDL=0.010		ug/L	
			Benzo(b/j)fluoranthene	2014/02/03	ND, RDL=0.010		ug/L	
			Benzo(g,h,i)perylene	2014/02/03	ND, RDL=0.010		ug/L	
			Benzo(k)fluoranthene	2014/02/03	ND, RDL=0.010		ug/L	
			Chrysene	2014/02/03	ND, RDL=0.010		ug/L	
			Dibenz(a,h)anthracene	2014/02/03	ND, RDL=0.010		ug/L	
			Fluoranthene	2014/02/03	ND, RDL=0.010		ug/L	
			Fluorene	2014/02/03	ND, RDL=0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2014/02/03	ND, RDL=0.010		ug/L	
			1-Methylnaphthalene	2014/02/03	ND, RDL=0.010		ug/L	

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Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			2-Methylnaphthalene	2014/02/03	ND, RDL=0.010		ug/L	
			Naphthalene	2014/02/03	ND, RDL=0.010		ug/L	
			Phenanthrene	2014/02/03	ND, RDL=0.010		ug/L	
			Pyrene	2014/02/03	ND, RDL=0.010		ug/L	
3501133	DTI	RPD [UT1812-03]	Acenaphthene	2014/02/03	NC		%	30
			Acenaphthylene	2014/02/03	NC		%	30
			Anthracene	2014/02/03	NC		%	30
			Benzo(a)anthracene	2014/02/03	NC		%	30
			Benzo(a)pyrene	2014/02/03	NC		%	30
			Benzo(b/j)fluoranthene	2014/02/03	NC		%	30
			Benzo(g,h,i)perylene	2014/02/03	NC		%	30
			Benzo(k)fluoranthene	2014/02/03	NC		%	30
			Chrysene	2014/02/03	NC		%	30
			Dibenz(a,h)anthracene	2014/02/03	NC		%	30
			Fluoranthene	2014/02/03	NC		%	30
			Fluorene	2014/02/03	NC		%	30
			Indeno(1,2,3-cd)pyrene	2014/02/03	NC		%	30
			1-Methylnaphthalene	2014/02/03	NC		%	30
			2-Methylnaphthalene	2014/02/03	NC		%	30
			Naphthalene	2014/02/03	NC		%	30
			Phenanthrene	2014/02/03	NC		%	30
			Pyrene	2014/02/03	NC		%	30
3501145	HES	Spiked Blank	o-Terphenyl	2014/02/03		86	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2014/02/03		80	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2014/02/03		80	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2014/02/03		80	%	60 - 130
3501145	HES	RPD	F2 (C10-C16 Hydrocarbons)	2014/02/03	6.1		%	50
			F3 (C16-C34 Hydrocarbons)	2014/02/03	6.1		%	50
			F4 (C34-C50 Hydrocarbons)	2014/02/03	6.1		%	50
3501145	HES	Method Blank	o-Terphenyl	2014/02/03		77	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2014/02/03	ND, RDL=100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2014/02/03	ND, RDL=100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2014/02/03	ND, RDL=100		ug/L	

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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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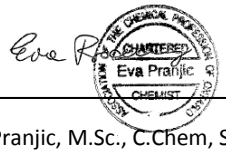
Maxxam Job #: B416574
Report Date: 2014/02/04

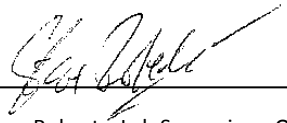
Stantec Consulting Ltd
Client Project #: 163401060
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: LB

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, Lab Supervisor, Ottawa

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Success Through Science®

Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: CSST
Site Location: QUEEN VICTORIA@RIVERLANE
Your C.O.C. #: 28566

Attention:Jill Peters-Dechman

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2014/05/05
Report #: R3020522
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B467130
Received: 2014/04/25, 15:30

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	1	N/A	2014/05/01	CAM SOP-00301	EPA 8270
1,3-Dichloropropene Sum	1	N/A	2014/05/05	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2014/04/29	2014/04/30	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil (1)	1	2014/05/01	2014/05/02	CAM SOP-00316	CCME CWS
F4G (CCME Hydrocarbons Gravimetric) (1)	1	2014/05/05	2014/05/05	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS (1)	1	2014/05/01	2014/05/01	CAM SOP-00447	EPA 6020
Moisture (1)	1	N/A	2014/04/29	CAM SOP-00445	R.Carter,1993
PAH Compounds in Soil by GC/MS (SIM) (1)	1	2014/04/29	2014/04/30	CAM SOP - 00318	EPA 8270
Volatile Organic Compounds in Soil	1	2014/05/02	2014/05/03	OTT SOP-00005	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* 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

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Your P.O. #: 16300R-20
Your Project #: 163401060
Site#: CSST
Site Location: QUEEN VICTORIA@RIVERLANE
Your C.O.C. #: 28566

Attention:Jill Peters-Dechman

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2014/05/05
Report #: R3020522
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B467130
Received: 2014/04/25, 15:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573
==========
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Maxxam Job #: B467130
Report Date: 2014/05/05

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

O.REG 153 ICPMS METALS (SOIL)

Maxxam ID		VR1458		
Sampling Date		2014/04/24 11:30		
COC Number		28566		
	Units	**BH14-228 SS3**	**RDL**	**QC Batch**
Metals				
Acid Extractable Antimony (Sb)	ug/g	ND	0.20	3590446
Acid Extractable Arsenic (As)	ug/g	3.3	1.0	3590446
Acid Extractable Barium (Ba)	ug/g	110	0.50	3590446
Acid Extractable Beryllium (Be)	ug/g	0.37	0.20	3590446
Acid Extractable Boron (B)	ug/g	10	5.0	3590446
Acid Extractable Cadmium (Cd)	ug/g	0.17	0.10	3590446
Acid Extractable Chromium (Cr)	ug/g	14	1.0	3590446
Acid Extractable Cobalt (Co)	ug/g	4.9	0.10	3590446
Acid Extractable Copper (Cu)	ug/g	15	0.50	3590446
Acid Extractable Lead (Pb)	ug/g	12	1.0	3590446
Acid Extractable Molybdenum (Mo)	ug/g	1.7	0.50	3590446
Acid Extractable Nickel (Ni)	ug/g	18	0.50	3590446
Acid Extractable Selenium (Se)	ug/g	ND	0.50	3590446
Acid Extractable Silver (Ag)	ug/g	ND	0.20	3590446
Acid Extractable Thallium (Tl)	ug/g	0.057	0.050	3590446
Acid Extractable Uranium (U)	ug/g	1.3	0.050	3590446
Acid Extractable Vanadium (V)	ug/g	12	5.0	3590446
Acid Extractable Zinc (Zn)	ug/g	57	5.0	3590446

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

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Maxxam Job #: B467130
Report Date: 2014/05/05

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

O.REG 153 PAHS (SOIL)

Maxxam ID		VR1458		
Sampling Date		2014/04/24 11:30		
COC Number		28566		
	Units	BH14-228 SS3	RDL	QC Batch
Inorganics				
Moisture	%	4.9	1.0	3587683
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	0.093	0.0071	3584617
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	0.017	0.0050	3588177
Acenaphthylene	ug/g	0.13	0.0050	3588177
Anthracene	ug/g	0.16	0.0050	3588177
Benzo(a)anthracene	ug/g	0.43	0.0050	3588177
Benzo(a)pyrene	ug/g	0.37	0.0050	3588177
Benzo(b/j)fluoranthene	ug/g	0.49	0.0050	3588177
Benzo(g,h,i)perylene	ug/g	0.21	0.0050	3588177
Benzo(k)fluoranthene	ug/g	0.19	0.0050	3588177
Chrysene	ug/g	0.33	0.0050	3588177
Dibenz(a,h)anthracene	ug/g	0.059	0.0050	3588177
Fluoranthene	ug/g	0.94	0.0050	3588177
Fluorene	ug/g	0.10	0.0050	3588177
Indeno(1,2,3-cd)pyrene	ug/g	0.22	0.0050	3588177
1-Methylnaphthalene	ug/g	0.040	0.0050	3588177
2-Methylnaphthalene	ug/g	0.053	0.0050	3588177
Naphthalene	ug/g	0.052	0.0050	3588177
Phenanthrene	ug/g	0.59	0.0050	3588177
Pyrene	ug/g	0.73	0.0050	3588177
Surrogate Recovery (%)				
D10-Anthracene	%	75		3588177
D14-Terphenyl (FS)	%	94		3588177
D8-Acenaphthylene	%	83		3588177

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2014/05/05

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

O.REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		VR1458		
Sampling Date		2014/04/24 11:30		
COC Number		28566		
	Units	**BH14-228 SS3**	**RDL**	**QC Batch**
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.071	3584990
Volatile Organics				
Acetone (2-Propanone)	ug/g	ND	0.50	3592651
Benzene	ug/g	ND	0.020	3592651
Bromodichloromethane	ug/g	ND	0.050	3592651
Bromoform	ug/g	ND	0.050	3592651
Bromomethane	ug/g	0.24	0.050	3592651
Carbon Tetrachloride	ug/g	ND	0.050	3592651
Chlorobenzene	ug/g	ND	0.050	3592651
Chloroform	ug/g	ND	0.050	3592651
Dibromochloromethane	ug/g	ND	0.050	3592651
1,2-Dichlorobenzene	ug/g	ND	0.050	3592651
1,3-Dichlorobenzene	ug/g	ND	0.050	3592651
1,4-Dichlorobenzene	ug/g	ND	0.050	3592651
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	3592651
1,1-Dichloroethane	ug/g	ND	0.050	3592651
1,2-Dichloroethane	ug/g	ND	0.050	3592651
1,1-Dichloroethylene	ug/g	ND	0.050	3592651
cis-1,2-Dichloroethylene	ug/g	ND	0.050	3592651
trans-1,2-Dichloroethylene	ug/g	ND	0.050	3592651
1,2-Dichloropropane	ug/g	ND	0.050	3592651
cis-1,3-Dichloropropene	ug/g	ND	0.050	3592651
trans-1,3-Dichloropropene	ug/g	ND	0.050	3592651
Ethylbenzene	ug/g	0.086	0.020	3592651
Ethylene Dibromide	ug/g	ND	0.050	3592651
Hexane	ug/g	2.7	0.050	3592651
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	3592651
Methyl Isobutyl Ketone	ug/g	ND	0.50	3592651
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	3592651
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	3592651
Styrene	ug/g	ND	0.050	3592651
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	3592651

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

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Maxxam Job #: B467130
Report Date: 2014/05/05

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

O.REG 153 VOLATILE ORGANICS (SOIL)

Maxxam ID		VR1458		
Sampling Date		2014/04/24 11:30		
COC Number		28566		
	Units	**BH14-228 SS3**	**RDL**	**QC Batch**
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	3592651
Tetrachloroethylene	ug/g	0.14	0.050	3592651
Toluene	ug/g	0.11	0.020	3592651
1,1,1-Trichloroethane	ug/g	ND	0.050	3592651
1,1,2-Trichloroethane	ug/g	ND	0.050	3592651
Trichloroethylene	ug/g	ND	0.050	3592651
Vinyl Chloride	ug/g	ND	0.020	3592651
p+m-Xylene	ug/g	1.1	0.020	3592651
o-Xylene	ug/g	0.40	0.020	3592651
Xylene (Total)	ug/g	1.5	0.020	3592651
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	3592651
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	116		3592651
D4-1,2-Dichloroethane	%	73		3592651
D8-Toluene	%	109		3592651

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

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Maxxam Job #: B467130
Report Date: 2014/05/05

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		VR1458		
Sampling Date		2014/04/24 11:30		
COC Number		28566		
	Units	**BH14-228 SS3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
F1 (C6-C10)	ug/g	150	10	3588016
F1 (C6-C10) - BTEX	ug/g	150	10	3588016
F2-F4 Hydrocarbons				
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	1200	100	3593881
F2 (C10-C16 Hydrocarbons)	ug/g	100	10	3590687
F3 (C16-C34 Hydrocarbons)	ug/g	280	50	3590687
F4 (C34-C50 Hydrocarbons)	ug/g	360	50	3590687
Reached Baseline at C50	ug/g	No		3590687
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	86		3588016
4-Bromofluorobenzene	%	131		3588016
D10-Ethylbenzene	%	129		3588016
D4-1,2-Dichloroethane	%	93		3588016
o-Terphenyl	%	98		3590687

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B467130
Report Date: 2014/05/05

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

TEST SUMMARY

Maxxam ID: VR1458
Sample ID: BH14-228 SS3
Matrix: Soil

Collected: 2014/04/24
Shipped:
Received: 2014/04/25

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3584617	N/A	2014/05/01	Automated Statchk
1,3-Dichloropropene Sum	CALC	3584990	N/A	2014/05/05	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3588016	2014/04/29	2014/04/30	Liliana Gaburici
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3590687	2014/05/01	2014/05/02	Zhiyue (Frank) Zhu
F4G (CCME Hydrocarbons Gravimetric)	BAL	3593881	2014/05/05	2014/05/05	Raheela Usmani
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3590446	2014/05/01	2014/05/01	Viviana Canzonieri
Moisture	BAL	3587683	N/A	2014/04/29	Min Yang
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3588177	2014/04/29	2014/04/30	Darryl Tiller
Volatile Organic Compounds in Soil	P&T/MS	3592651	2014/05/02	2014/05/03	Paul Rubinato

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Maxxam Job #: B467130
Report Date: 2014/05/05

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

GENERAL COMMENTS

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

Package 1	1.0°C

Cooler custody seal was present and intact.

Results relate only to the items tested.

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Maxxam Job #: B467130
Report Date: 2014/05/05

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3587683	JK1	RPD	Moisture	2014/04/29	12.3		%	20
3588016	LGA	Matrix Spike	1,4-Difluorobenzene	2014/04/30		85	%	60 - 140
			4-Bromofluorobenzene	2014/04/30		113	%	60 - 140
			D10-Ethylbenzene	2014/04/30		104	%	30 - 130
			D4-1,2-Dichloroethane	2014/04/30		87	%	60 - 140
			F1 (C6-C10)	2014/04/30		90	%	60 - 140
3588016	LGA	Spiked Blank	1,4-Difluorobenzene	2014/04/30		85	%	60 - 140
			4-Bromofluorobenzene	2014/04/30		114	%	60 - 140
			D10-Ethylbenzene	2014/04/30		102	%	30 - 130
			D4-1,2-Dichloroethane	2014/04/30		90	%	60 - 140
			F1 (C6-C10)	2014/04/30		88	%	80 - 120
3588016	LGA	Method Blank	1,4-Difluorobenzene	2014/04/30		83	%	60 - 140
			4-Bromofluorobenzene	2014/04/30		117	%	60 - 140
			D10-Ethylbenzene	2014/04/30		98	%	30 - 130
			D4-1,2-Dichloroethane	2014/04/30		90	%	60 - 140
			F1 (C6-C10)	2014/04/30	ND , RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2014/04/30	ND , RDL=10		ug/g	
3588016	LGA	RPD	F1 (C6-C10)	2014/04/30	NC		%	50
			F1 (C6-C10) - BTEX	2014/04/30	NC		%	50
3588177	DTI	Matrix Spike	D10-Anthracene	2014/04/30		87	%	50 - 130
			D14-Terphenyl (FS)	2014/04/30		89	%	50 - 130
			D8-Acenaphthylene	2014/04/30		82	%	50 - 130
			Acenaphthene	2014/04/30		92	%	50 - 130
			Acenaphthylene	2014/04/30		88	%	50 - 130
			Anthracene	2014/04/30		88	%	50 - 130
			Benzo(a)anthracene	2014/04/30		107	%	50 - 130
			Benzo(a)pyrene	2014/04/30		93	%	50 - 130
			Benzo(b/j)fluoranthene	2014/04/30		94	%	50 - 130
			Benzo(g,h,i)perylene	2014/04/30		75	%	50 - 130
			Benzo(k)fluoranthene	2014/04/30		99	%	50 - 130
			Chrysene	2014/04/30		94	%	50 - 130
			Dibenz(a,h)anthracene	2014/04/30		80	%	50 - 130
			Fluoranthene	2014/04/30		100	%	50 - 130
			Fluorene	2014/04/30		93	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/04/30		73	%	50 - 130
			1-Methylnaphthalene	2014/04/30		85	%	50 - 130
			2-Methylnaphthalene	2014/04/30		86	%	50 - 130
			Naphthalene	2014/04/30		87	%	50 - 130
			Phenanthrene	2014/04/30		89	%	50 - 130
			Pyrene	2014/04/30		98	%	50 - 130
3588177	DTI	Spiked Blank	D10-Anthracene	2014/04/29		91	%	50 - 130
			D14-Terphenyl (FS)	2014/04/29		87	%	50 - 130
			D8-Acenaphthylene	2014/04/29		82	%	50 - 130
			Acenaphthene	2014/04/29		95	%	50 - 130
			Acenaphthylene	2014/04/29		90	%	50 - 130
			Anthracene	2014/04/29		92	%	50 - 130
			Benzo(a)anthracene	2014/04/29		97	%	50 - 130
			Benzo(a)pyrene	2014/04/29		96	%	50 - 130
			Benzo(b/j)fluoranthene	2014/04/29		98	%	50 - 130

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Client Project #: 163401060
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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Benzo(g,h,i)perylene	2014/04/29		80	%	50 - 130
			Benzo(k)fluoranthene	2014/04/29		108	%	50 - 130
			Chrysene	2014/04/29		96	%	50 - 130
			Dibenz(a,h)anthracene	2014/04/29		67	%	50 - 130
			Fluoranthene	2014/04/29		99	%	50 - 130
			Fluorene	2014/04/29		94	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2014/04/29		74	%	50 - 130
			1-Methylnaphthalene	2014/04/29		88	%	50 - 130
			2-Methylnaphthalene	2014/04/29		88	%	50 - 130
			Naphthalene	2014/04/29		90	%	50 - 130
			Phenanthrene	2014/04/29		94	%	50 - 130
			Pyrene	2014/04/29		97	%	50 - 130
3588177	DTI	Method Blank	D10-Anthracene	2014/04/30		94	%	50 - 130
			D14-Terphenyl (FS)	2014/04/30		87	%	50 - 130
			D8-Acenaphthylene	2014/04/30		83	%	50 - 130
			Acenaphthene	2014/04/30	ND , RDL=0.0050		ug/g	
			Acenaphthylene	2014/04/30	ND , RDL=0.0050		ug/g	
			Anthracene	2014/04/30	ND , RDL=0.0050		ug/g	
			Benzo(a)anthracene	2014/04/30	ND , RDL=0.0050		ug/g	
			Benzo(a)pyrene	2014/04/30	ND , RDL=0.0050		ug/g	
			Benzo(b/j)fluoranthene	2014/04/30	ND , RDL=0.0050		ug/g	
			Benzo(g,h,i)perylene	2014/04/30	ND , RDL=0.0050		ug/g	
			Benzo(k)fluoranthene	2014/04/30	ND , RDL=0.0050		ug/g	
			Chrysene	2014/04/30	ND , RDL=0.0050		ug/g	
			Dibenz(a,h)anthracene	2014/04/30	ND , RDL=0.0050		ug/g	
			Fluoranthene	2014/04/30	ND , RDL=0.0050		ug/g	
			Fluorene	2014/04/30	ND , RDL=0.0050		ug/g	
			Indeno(1,2,3-cd)pyrene	2014/04/30	ND , RDL=0.0050		ug/g	
			1-Methylnaphthalene	2014/04/30	ND , RDL=0.0050		ug/g	
			2-Methylnaphthalene	2014/04/30	ND , RDL=0.0050		ug/g	
			Naphthalene	2014/04/30	ND , RDL=0.0050		ug/g	
			Phenanthrene	2014/04/30	ND , RDL=0.0050		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
			Pyrene	2014/04/30	ND , RDL=0.0050		ug/g	
3588177	DTI	RPD	Acenaphthene	2014/04/30	NC		%	40
			Acenaphthylene	2014/04/30	NC		%	40
			Anthracene	2014/04/30	NC		%	40
			Benzo(a)anthracene	2014/04/30	NC		%	40
			Benzo(a)pyrene	2014/04/30	NC		%	40
			Benzo(b/j)fluoranthene	2014/04/30	NC		%	40
			Benzo(g,h,i)perylene	2014/04/30	NC		%	40
			Benzo(k)fluoranthene	2014/04/30	NC		%	40
			Chrysene	2014/04/30	NC		%	40
			Dibenz(a,h)anthracene	2014/04/30	NC		%	40
			Fluoranthene	2014/04/30	NC		%	40
			Fluorene	2014/04/30	NC		%	40
			Indeno(1,2,3-cd)pyrene	2014/04/30	NC		%	40
			1-Methylnaphthalene	2014/04/30	NC		%	40
			2-Methylnaphthalene	2014/04/30	NC		%	40
			Naphthalene	2014/04/30	NC		%	40
			Phenanthrene	2014/04/30	NC		%	40
			Pyrene	2014/04/30	NC		%	40
3590446	VIV	Matrix Spike	Acid Extractable Antimony (Sb)	2014/05/01		106	%	75 - 125
			Acid Extractable Arsenic (As)	2014/05/01		103	%	75 - 125
			Acid Extractable Barium (Ba)	2014/05/01		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2014/05/01		110	%	75 - 125
			Acid Extractable Boron (B)	2014/05/01		104	%	75 - 125
			Acid Extractable Cadmium (Cd)	2014/05/01		107	%	75 - 125
			Acid Extractable Chromium (Cr)	2014/05/01		108	%	75 - 125
			Acid Extractable Cobalt (Co)	2014/05/01		106	%	75 - 125
			Acid Extractable Copper (Cu)	2014/05/01		107	%	75 - 125
			Acid Extractable Lead (Pb)	2014/05/01		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2014/05/01		108	%	75 - 125
			Acid Extractable Nickel (Ni)	2014/05/01		107	%	75 - 125
			Acid Extractable Selenium (Se)	2014/05/01		108	%	75 - 125
			Acid Extractable Silver (Ag)	2014/05/01		110	%	75 - 125
			Acid Extractable Thallium (Tl)	2014/05/01		98	%	75 - 125
			Acid Extractable Uranium (U)	2014/05/01		102	%	75 - 125
			Acid Extractable Vanadium (V)	2014/05/01		109	%	75 - 125
			Acid Extractable Zinc (Zn)	2014/05/01		NC	%	75 - 125
3590446	VIV	Spiked Blank	Acid Extractable Antimony (Sb)	2014/05/01		103	%	80 - 120
			Acid Extractable Arsenic (As)	2014/05/01		100	%	80 - 120
			Acid Extractable Barium (Ba)	2014/05/01		101	%	80 - 120
			Acid Extractable Beryllium (Be)	2014/05/01		103	%	80 - 120
			Acid Extractable Boron (B)	2014/05/01		101	%	80 - 120
			Acid Extractable Cadmium (Cd)	2014/05/01		106	%	80 - 120
			Acid Extractable Chromium (Cr)	2014/05/01		104	%	80 - 120
			Acid Extractable Cobalt (Co)	2014/05/01		105	%	80 - 120
			Acid Extractable Copper (Cu)	2014/05/01		102	%	80 - 120
			Acid Extractable Lead (Pb)	2014/05/01		104	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2014/05/01		106	%	80 - 120
			Acid Extractable Nickel (Ni)	2014/05/01		103	%	80 - 120
			Acid Extractable Selenium (Se)	2014/05/01		105	%	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
			Acid Extractable Silver (Ag)	2014/05/01		108	%	80 - 120
			Acid Extractable Thallium (Tl)	2014/05/01		98	%	80 - 120
			Acid Extractable Uranium (U)	2014/05/01		100	%	80 - 120
			Acid Extractable Vanadium (V)	2014/05/01		101	%	80 - 120
			Acid Extractable Zinc (Zn)	2014/05/01		105	%	80 - 120
3590446	VIV	Method Blank	Acid Extractable Antimony (Sb)	2014/05/01	ND , RDL=0.20		ug/g	
			Acid Extractable Arsenic (As)	2014/05/01	ND , RDL=1.0		ug/g	
			Acid Extractable Barium (Ba)	2014/05/01	ND , RDL=0.50		ug/g	
			Acid Extractable Beryllium (Be)	2014/05/01	ND , RDL=0.20		ug/g	
			Acid Extractable Boron (B)	2014/05/01	ND , RDL=5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2014/05/01	ND , RDL=0.10		ug/g	
			Acid Extractable Chromium (Cr)	2014/05/01	ND , RDL=1.0		ug/g	
			Acid Extractable Cobalt (Co)	2014/05/01	ND , RDL=0.10		ug/g	
			Acid Extractable Copper (Cu)	2014/05/01	ND , RDL=0.50		ug/g	
			Acid Extractable Lead (Pb)	2014/05/01	ND , RDL=1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2014/05/01	ND , RDL=0.50		ug/g	
			Acid Extractable Nickel (Ni)	2014/05/01	ND , RDL=0.50		ug/g	
			Acid Extractable Selenium (Se)	2014/05/01	ND , RDL=0.50		ug/g	
			Acid Extractable Silver (Ag)	2014/05/01	ND , RDL=0.20		ug/g	
			Acid Extractable Thallium (Tl)	2014/05/01	ND , RDL=0.050		ug/g	
			Acid Extractable Uranium (U)	2014/05/01	ND , RDL=0.050		ug/g	
			Acid Extractable Vanadium (V)	2014/05/01	ND , RDL=5.0		ug/g	
			Acid Extractable Zinc (Zn)	2014/05/01	ND , RDL=5.0		ug/g	
3590446	VIV	RPD	Acid Extractable Antimony (Sb)	2014/05/01	NC		%	30
			Acid Extractable Arsenic (As)	2014/05/01	NC		%	30
			Acid Extractable Barium (Ba)	2014/05/01	4.9		%	30
			Acid Extractable Beryllium (Be)	2014/05/01	NC		%	30
			Acid Extractable Boron (B)	2014/05/01	NC		%	30
			Acid Extractable Cadmium (Cd)	2014/05/01	NC		%	30
			Acid Extractable Chromium (Cr)	2014/05/01	0.4		%	30
			Acid Extractable Cobalt (Co)	2014/05/01	3.0		%	30

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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 Copper (Cu)	2014/05/01	4.1		%	30
			Acid Extractable Lead (Pb)	2014/05/01	3.0		%	30
			Acid Extractable Molybdenum (Mo)	2014/05/01	NC		%	30
			Acid Extractable Nickel (Ni)	2014/05/01	4.3		%	30
			Acid Extractable Selenium (Se)	2014/05/01	NC		%	30
			Acid Extractable Silver (Ag)	2014/05/01	NC		%	30
			Acid Extractable Thallium (Tl)	2014/05/01	NC		%	30
			Acid Extractable Uranium (U)	2014/05/01	3.4		%	30
			Acid Extractable Vanadium (V)	2014/05/01	NC		%	30
			Acid Extractable Zinc (Zn)	2014/05/01	3.4		%	30
3590687	ZZ	Matrix Spike	o-Terphenyl	2014/05/01		96	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2014/05/01		108	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2014/05/01		107	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2014/05/01		105	%	50 - 130
3590687	ZZ	Spiked Blank	o-Terphenyl	2014/05/01		96	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2014/05/01		104	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2014/05/01		101	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2014/05/01		104	%	80 - 120
3590687	ZZ	Method Blank	o-Terphenyl	2014/05/01		94	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2014/05/01	ND , RDL=10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2014/05/01	ND , RDL=50		ug/g	
			F4 (C34-C50 Hydrocarbons)	2014/05/01	ND , RDL=50		ug/g	
3590687	ZZ	RPD	F2 (C10-C16 Hydrocarbons)	2014/05/02	NC		%	30
			F3 (C16-C34 Hydrocarbons)	2014/05/02	NC		%	30
			F4 (C34-C50 Hydrocarbons)	2014/05/02	NC		%	30
3592651	PRB	Spiked Blank	4-Bromofluorobenzene	2014/05/02		117	%	60 - 140
			D4-1,2-Dichloroethane	2014/05/02		80	%	60 - 140
			D8-Toluene	2014/05/02		111	%	60 - 140
			Acetone (2-Propanone)	2014/05/02		109	%	60 - 140
			Benzene	2014/05/02		84	%	60 - 140
			Bromodichloromethane	2014/05/02		85	%	60 - 140
			Bromoform	2014/05/02		133	%	60 - 140
			Bromomethane	2014/05/02		74	%	60 - 140
			Carbon Tetrachloride	2014/05/02		83	%	60 - 140
			Chlorobenzene	2014/05/02		120	%	60 - 140
			Chloroform	2014/05/02		85	%	60 - 140
			Dibromochloromethane	2014/05/02		127	%	60 - 140
			1,2-Dichlorobenzene	2014/05/02		113	%	60 - 140
			1,3-Dichlorobenzene	2014/05/02		101	%	60 - 140
			1,4-Dichlorobenzene	2014/05/02		112	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2014/05/02		81	%	60 - 140
			1,1-Dichloroethane	2014/05/02		82	%	60 - 140
			1,2-Dichloroethane	2014/05/02		70	%	60 - 140
			1,1-Dichloroethylene	2014/05/02		63	%	60 - 140
			cis-1,2-Dichloroethylene	2014/05/02		89	%	60 - 140
			trans-1,2-Dichloroethylene	2014/05/02		79	%	60 - 140
			1,2-Dichloropropane	2014/05/02		79	%	60 - 140
			cis-1,3-Dichloropropene	2014/05/02		90	%	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
			trans-1,3-Dichloropropene	2014/05/02		89	%	60 - 140
			Ethylbenzene	2014/05/02		104	%	60 - 140
			Ethylene Dibromide	2014/05/02		113	%	60 - 140
			Hexane	2014/05/02		66	%	60 - 140
			Methylene Chloride(Dichloromethane)	2014/05/02		76	%	60 - 140
			Methyl Isobutyl Ketone	2014/05/02		69	%	60 - 140
			Methyl Ethyl Ketone (2-Butanone)	2014/05/02		122	%	60 - 140
			Methyl t-butyl ether (MTBE)	2014/05/02		89	%	60 - 140
			Styrene	2014/05/02		116	%	60 - 140
			1,1,1,2-Tetrachloroethane	2014/05/02		111	%	60 - 140
			1,1,2,2-Tetrachloroethane	2014/05/02		83	%	60 - 140
			Tetrachloroethylene	2014/05/02		114	%	60 - 140
			Toluene	2014/05/02		101	%	60 - 140
			1,1,1-Trichloroethane	2014/05/02		78	%	60 - 140
			1,1,2-Trichloroethane	2014/05/02		109	%	60 - 140
			Trichloroethylene	2014/05/02		111	%	60 - 140
			Vinyl Chloride	2014/05/02		67	%	60 - 140
			p+m-Xylene	2014/05/02		106	%	60 - 140
			o-Xylene	2014/05/02		96	%	60 - 140
			Trichlorofluoromethane (FREON 11)	2014/05/02		73	%	60 - 140
3592651	PRB	RPD	Acetone (2-Propanone)	2014/05/02	12.5		%	50
			Benzene	2014/05/02	5.5		%	50
			Bromodichloromethane	2014/05/02	2.3		%	50
			Bromoform	2014/05/02	0.2		%	50
			Bromomethane	2014/05/02	0.6		%	50
			Carbon Tetrachloride	2014/05/02	2.9		%	50
			Chlorobenzene	2014/05/02	1.9		%	50
			Chloroform	2014/05/02	2.8		%	50
			Dibromochloromethane	2014/05/02	3.8		%	50
			1,2-Dichlorobenzene	2014/05/02	7.9		%	50
			1,3-Dichlorobenzene	2014/05/02	9.0		%	50
			1,4-Dichlorobenzene	2014/05/02	8.5		%	50
			Dichlorodifluoromethane (FREON 12)	2014/05/02	1.8		%	50
			1,1-Dichloroethane	2014/05/02	1		%	50
			1,2-Dichloroethane	2014/05/02	1.5		%	50
			1,1-Dichloroethylene	2014/05/02	14.4		%	50
			cis-1,2-Dichloroethylene	2014/05/02	2.9		%	50
			trans-1,2-Dichloroethylene	2014/05/02	17.4		%	50
			1,2-Dichloropropane	2014/05/02	3.7		%	50
			cis-1,3-Dichloropropene	2014/05/02	1.6		%	50
			trans-1,3-Dichloropropene	2014/05/02	3.0		%	50
			Ethylbenzene	2014/05/02	1.9		%	50
			Ethylene Dibromide	2014/05/02	10.2		%	50
			Hexane	2014/05/02	11.8		%	50
			Methylene Chloride(Dichloromethane)	2014/05/02	9.4		%	50
			Methyl Isobutyl Ketone	2014/05/02	0.01		%	50
			Methyl Ethyl Ketone (2-Butanone)	2014/05/02	8.5		%	50
			Methyl t-butyl ether (MTBE)	2014/05/02	10.5		%	50
			Styrene	2014/05/02	5.6		%	50
			1,1,1,2-Tetrachloroethane	2014/05/02	4.0		%	50
			1,1,2,2-Tetrachloroethane	2014/05/02	4.4		%	50

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Tetrachloroethylene	2014/05/02	2.7		%	50
			Toluene	2014/05/02	5.7		%	50
			1,1,1-Trichloroethane	2014/05/02	4.1		%	50
			1,1,2-Trichloroethane	2014/05/02	7.4		%	50
			Trichloroethylene	2014/05/02	0.6		%	50
			Vinyl Chloride	2014/05/02	6.9		%	50
			p+m-Xylene	2014/05/02	1.2		%	50
			o-Xylene	2014/05/02	12.3		%	50
			Trichlorofluoromethane (FREON 11)	2014/05/02	5.6		%	50
3592651	PRB	Method Blank	4-Bromofluorobenzene	2014/05/02		125	%	60 - 140
			D4-1,2-Dichloroethane	2014/05/02		85	%	60 - 140
			D8-Toluene	2014/05/02		114	%	60 - 140
			Acetone (2-Propanone)	2014/05/02	ND , RDL=0.50		ug/g	
			Benzene	2014/05/02	ND , RDL=0.020		ug/g	
			Bromodichloromethane	2014/05/02	ND , RDL=0.050		ug/g	
			Bromoform	2014/05/02	ND , RDL=0.050		ug/g	
			Bromomethane	2014/05/02	ND , RDL=0.050		ug/g	
			Carbon Tetrachloride	2014/05/02	ND , RDL=0.050		ug/g	
			Chlorobenzene	2014/05/02	ND , RDL=0.050		ug/g	
			Chloroform	2014/05/02	ND , RDL=0.050		ug/g	
			Dibromochloromethane	2014/05/02	ND , RDL=0.050		ug/g	
			1,2-Dichlorobenzene	2014/05/02	ND , RDL=0.050		ug/g	
			1,3-Dichlorobenzene	2014/05/02	ND , RDL=0.050		ug/g	
			1,4-Dichlorobenzene	2014/05/02	ND , RDL=0.050		ug/g	
			Dichlorodifluoromethane (FREON 12)	2014/05/02	ND , RDL=0.050		ug/g	
			1,1-Dichloroethane	2014/05/02	ND , RDL=0.050		ug/g	
			1,2-Dichloroethane	2014/05/02	ND , RDL=0.050		ug/g	
			1,1-Dichloroethylene	2014/05/02	ND , RDL=0.050		ug/g	
			cis-1,2-Dichloroethylene	2014/05/02	ND , RDL=0.050		ug/g	
			trans-1,2-Dichloroethylene	2014/05/02	ND , RDL=0.050		ug/g	

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Maxxam Job #: B467130
Report Date: 2014/05/05

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			1,2-Dichloropropane	2014/05/02	ND , RDL=0.050		ug/g	
			cis-1,3-Dichloropropene	2014/05/02	ND , RDL=0.050		ug/g	
			trans-1,3-Dichloropropene	2014/05/02	ND , RDL=0.050		ug/g	
			Ethylbenzene	2014/05/02	ND , RDL=0.020		ug/g	
			Ethylene Dibromide	2014/05/02	ND , RDL=0.050		ug/g	
			Hexane	2014/05/02	ND , RDL=0.050		ug/g	
			Methylene Chloride(Dichloromethane)	2014/05/02	ND , RDL=0.050		ug/g	
			Methyl Isobutyl Ketone	2014/05/02	ND , RDL=0.50		ug/g	
			Methyl Ethyl Ketone (2-Butanone)	2014/05/02	ND , RDL=0.50		ug/g	
			Methyl t-butyl ether (MTBE)	2014/05/02	ND , RDL=0.050		ug/g	
			Styrene	2014/05/02	ND , RDL=0.050		ug/g	
			1,1,1,2-Tetrachloroethane	2014/05/02	ND , RDL=0.050		ug/g	
			1,1,2,2-Tetrachloroethane	2014/05/02	ND , RDL=0.050		ug/g	
			Tetrachloroethylene	2014/05/02	ND , RDL=0.050		ug/g	
			Toluene	2014/05/02	ND , RDL=0.020		ug/g	
			1,1,1-Trichloroethane	2014/05/02	ND , RDL=0.050		ug/g	
			1,1,2-Trichloroethane	2014/05/02	ND , RDL=0.050		ug/g	
			Trichloroethylene	2014/05/02	ND , RDL=0.050		ug/g	
			Vinyl Chloride	2014/05/02	ND , RDL=0.020		ug/g	
			p+m-Xylene	2014/05/02	ND , RDL=0.020		ug/g	
			o-Xylene	2014/05/02	ND , RDL=0.020		ug/g	
			Trichlorofluoromethane (FREON 11)	2014/05/02	ND , RDL=0.050		ug/g	
3593881	RUS	Matrix Spike	F4G-sg (Grav. Heavy Hydrocarbons)	2014/05/05		105	%	65 - 135
3593881	RUS	Spiked Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2014/05/05		106	%	65 - 135
3593881	RUS	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2014/05/05	ND , RDL=100		ug/g	

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Maxxam Job #: B467130
Report Date: 2014/05/05

Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3593881	RUS	RPD	F4G-sg (Grav. Heavy Hydrocarbons)	2014/05/05	13.4		%	50

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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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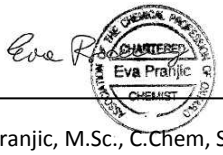
Stantec Consulting Ltd
Client Project #: 163401060
Site Location: QUEEN VICTORIA@RIVERLANE
Your P.O. #: 16300R-20
Sampler Initials: LB

VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Scientific Services



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

Jeevaraj Jeevaratrnam, Senior Analyst

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Lab Supervisor, Ottawa

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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Your P.O. #: 16300R-20
Your Project #: 163401060.400.125
Site Location: CSST
Your C.O.C. #: 495505-03-01

Attention: Jean-Philippe Gobeil
Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2014/12/24
Report #: R3271707
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4N9903
Received: 2014/12/17, 15:40

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (1)	6	N/A	2014/12/24	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum (1)	6	N/A	2014/12/24	CAM SOP-00226	EPA 8260
Petroleum Hydro. CCME F1 & BTEX in Soil (1)	6	2014/12/19	2014/12/23	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (1)	5	2014/12/22	2014/12/23	CAM SOP-00316	CCME CWS m
Petroleum Hydrocarbons F2-F4 in Soil (1)	1	2014/12/23	2014/12/24	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS (1)	6	2014/12/23	2014/12/23	CAM SOP-00447	EPA 6020A m
Moisture (1)	6	N/A	2014/12/24	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM) (1)	6	2014/12/22	2014/12/23	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds in Soil (1)	2	2014/12/19	2014/12/19	CAM SOP-00226	EPA 8260 m
Volatile Organic Compounds in Soil (1)	4	2014/12/19	2014/12/20	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

Maxxam Job #: B4N9903
Report Date: 2014/12/24

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: JM

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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Total cover pages: 2

Maxxam Job #: B4N9903
Report Date: 2014/12/24

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: JM

RESULTS OF ANALYSES OF SOIL

Maxxam ID		YX5364	YX5365	YX5366	YX5367	YX5368	YX5369		
Sampling Date		2014/12/12 09:00	2014/12/12 09:27	2014/12/16 10:43	2014/12/16 11:09	2014/12/15 09:05	2014/12/15 09:20		
	Units	**14-220A-SS1**	**14-220A-SS4**	**14-317-SS1**	**14-317-SS3**	**14-316-SS1**	**14-316-SS2**	**RDL**	**QC Batch**
Inorganics									
Moisture	%	18	35	44	11	5.1	5.5	1.0	3869593

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B4N9903
Report Date: 2014/12/24

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: JM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		YX5364	YX5365	YX5366	YX5367	YX5368	YX5369		
Sampling Date		2014/12/12 09:00	2014/12/12 09:27	2014/12/16 10:43	2014/12/16 11:09	2014/12/15 09:05	2014/12/15 09:20		
	Units	**14-220A-SS1**	**14-220A-SS4**	**14-317-SS1**	**14-317-SS3**	**14-316-SS1**	**14-316-SS2**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	0.20	ND	ND	ND	ND	ND	0.20	3869436
Acid Extractable Arsenic (As)	ug/g	1.6	ND	ND	ND	1.3	2.5	1.0	3869436
Acid Extractable Barium (Ba)	ug/g	270	320	410	75	410	280	0.50	3869436
Acid Extractable Beryllium (Be)	ug/g	0.51	0.73	0.85	0.22	0.22	0.31	0.20	3869436
Acid Extractable Boron (B)	ug/g	5.1	6.9	8.3	ND	5.8	6.6	5.0	3869436
Acid Extractable Cadmium (Cd)	ug/g	0.19	ND	0.12	ND	ND	ND	0.10	3869436
Acid Extractable Chromium (Cr)	ug/g	51	78	140	13	7.6	8.5	1.0	3869436
Acid Extractable Cobalt (Co)	ug/g	12	19	28	4.7	2.7	3.1	0.10	3869436
Acid Extractable Copper (Cu)	ug/g	32	37	64	11	5.3	5.5	0.50	3869436
Acid Extractable Lead (Pb)	ug/g	50	6.0	7.0	2.7	4.0	3.1	1.0	3869436
Acid Extractable Molybdenum (Mo)	ug/g	0.62	0.96	0.98	ND	0.56	0.59	0.50	3869436
Acid Extractable Nickel (Ni)	ug/g	29	44	78	8.2	6.2	7.1	0.50	3869436
Acid Extractable Selenium (Se)	ug/g	ND	ND	ND	ND	ND	ND	0.50	3869436
Acid Extractable Silver (Ag)	ug/g	ND	ND	ND	ND	ND	ND	0.20	3869436
Acid Extractable Thallium (Tl)	ug/g	0.24	0.41	0.51	0.084	0.11	0.11	0.050	3869436
Acid Extractable Uranium (U)	ug/g	0.84	1.3	1.1	0.73	0.75	0.71	0.050	3869436
Acid Extractable Vanadium (V)	ug/g	55	94	130	24	10	12	5.0	3869436
Acid Extractable Zinc (Zn)	ug/g	92	120	150	22	18	21	5.0	3869436

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

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Maxxam Job #: B4N9903
Report Date: 2014/12/24

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: JM

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		YX5364		YX5365		YX5366		YX5367	YX5368	YX5369		
Sampling Date		2014/12/12 09:00		2014/12/12 09:27		2014/12/16 10:43		2014/12/16 11:09	2014/12/15 09:05	2014/12/15 09:20		
	Units	**14-220A-SS1**	**RDL**	**14-220A-SS4**	**QC Batch**	**14-317-SS1**	**RDL**	**14-317-SS3**	**14-316-SS1**	**14-316-SS2**	**RDL**	**QC Batch**
Calculated Parameters												
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	ND	3864389	ND	0.014	ND	ND	ND	0.0071	3865484
Polyaromatic Hydrocarbons												
Acenaphthene	ug/g	ND	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Acenaphthylene	ug/g	ND	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Anthracene	ug/g	ND	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Benzo(a)anthracene	ug/g	0.015	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Benzo(a)pyrene	ug/g	0.016	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Benzo(b/j)fluoranthene	ug/g	0.023	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Benzo(g,h,i)perylene	ug/g	0.015	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Benzo(k)fluoranthene	ug/g	0.0068	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Chrysene	ug/g	0.013	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Dibenz(a,h)anthracene	ug/g	ND	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Fluoranthene	ug/g	0.018	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Fluorene	ug/g	ND	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Indeno(1,2,3-cd)pyrene	ug/g	0.012	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
1-Methylnaphthalene	ug/g	ND	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
2-Methylnaphthalene	ug/g	ND	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Naphthalene	ug/g	ND	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Phenanthrene	ug/g	0.0062	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Pyrene	ug/g	0.019	0.0050	ND	3868603	ND	0.010	ND	ND	ND	0.0050	3868603
Surrogate Recovery (%)												
D10-Anthracene	%	89		93	3868603	93		94	93	95		3868603
D14-Terphenyl (FS)	%	100		106	3868603	109		104	107	105		3868603
D8-Acenaphthylene	%	89		89	3868603	82		93	92	92		3868603

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

Maxxam Job #: B4N9903
Report Date: 2014/12/24

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: JM

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		YX5364	YX5365	YX5366	YX5367	YX5368	YX5369		
Sampling Date		2014/12/12 09:00	2014/12/12 09:27	2014/12/16 10:43	2014/12/16 11:09	2014/12/15 09:05	2014/12/15 09:20		
	Units	**14-220A-SS1**	**14-220A-SS4**	**14-317-SS1**	**14-317-SS3**	**14-316-SS1**	**14-316-SS2**	**RDL**	**QC Batch**
Calculated Parameters									
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	ND	ND	ND	ND	0.050	3864437
Volatile Organics									
Acetone (2-Propanone)	ug/g	ND	ND	ND	ND	ND	ND	0.50	3865306
Benzene	ug/g	ND	ND	ND	ND	ND	ND	0.020	3865306
Bromodichloromethane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Bromoform	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Bromomethane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Carbon Tetrachloride	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Chlorobenzene	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Chloroform	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Dibromochloromethane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
1,2-Dichlorobenzene	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
1,3-Dichlorobenzene	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
1,4-Dichlorobenzene	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
1,1-Dichloroethane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
1,2-Dichloroethane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
1,1-Dichloroethylene	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
1,2-Dichloropropane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	ND	ND	0.030	3865306
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	ND	ND	0.040	3865306
Ethylbenzene	ug/g	ND	ND	ND	ND	ND	ND	0.020	3865306
Ethylene Dibromide	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Hexane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	ND	ND	ND	0.50	3865306
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	ND	ND	ND	0.50	3865306
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Styrene	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306

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

Maxxam Job #: B4N9903
Report Date: 2014/12/24

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: JM

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		YX5364	YX5365	YX5366	YX5367	YX5368	YX5369		
Sampling Date		2014/12/12 09:00	2014/12/12 09:27	2014/12/16 10:43	2014/12/16 11:09	2014/12/15 09:05	2014/12/15 09:20		
	Units	**14-220A-SS1**	**14-220A-SS4**	**14-317-SS1**	**14-317-SS3**	**14-316-SS1**	**14-316-SS2**	**RDL**	**QC Batch**
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Tetrachloroethylene	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Toluene	ug/g	ND	ND	ND	ND	ND	ND	0.020	3865306
1,1,1-Trichloroethane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
1,1,2-Trichloroethane	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Trichloroethylene	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Vinyl Chloride	ug/g	ND	ND	ND	ND	ND	ND	0.020	3865306
p+m-Xylene	ug/g	ND	ND	ND	ND	ND	ND	0.020	3865306
o-Xylene	ug/g	ND	ND	ND	ND	ND	ND	0.020	3865306
Total Xylenes	ug/g	ND	ND	ND	ND	ND	ND	0.020	3865306
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	ND	ND	ND	0.050	3865306
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	100	97	99	99	99	98		3865306
D10-o-Xylene	%	89	100	98	97	105	94		3865306
D4-1,2-Dichloroethane	%	102	99	99	100	99	99		3865306
D8-Toluene	%	100	101	101	102	101	101		3865306

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

Maxxam Job #: B4N9903
Report Date: 2014/12/24

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: JM

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		YX5364		YX5365		YX5366		YX5367	YX5368	YX5369		
Sampling Date		2014/12/12 09:00		2014/12/12 09:27		2014/12/16 10:43		2014/12/16 11:09	2014/12/15 09:05	2014/12/15 09:20		
	Units	**14-220A-SS1**	**QC Batch**	**14-220A-SS4**	**RDL**	**14-317-SS1**	**RDL**	**14-317-SS3**	**14-316-SS1**	**14-316-SS2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons												
F1 (C6-C10)	ug/g	ND	3869831	ND	10	ND	10	ND	ND	ND	10	3869831
F1 (C6-C10) - BTEX	ug/g	ND	3869831	ND	10	ND	10	ND	ND	ND	10	3869831
F2-F4 Hydrocarbons												
F2 (C10-C16 Hydrocarbons)	ug/g	ND	3870570	ND	10	ND	20	ND	ND	ND	10	3868732
F3 (C16-C34 Hydrocarbons)	ug/g	ND	3870570	ND	50	ND	100	ND	ND	ND	50	3868732
F4 (C34-C50 Hydrocarbons)	ug/g	ND	3870570	ND	50	ND	100	ND	ND	ND	50	3868732
Reached Baseline at C50	ug/g	YES	3870570	YES		YES		YES	YES	YES		3868732
Surrogate Recovery (%)												
1,4-Difluorobenzene	%	99	3869831	96		98		98	100	97		3869831
4-Bromofluorobenzene	%	101	3869831	100		101		101	102	101		3869831
D10-Ethylbenzene	%	108	3869831	113		117		118	119	114		3869831
D4-1,2-Dichloroethane	%	104	3869831	105		105		105	104	106		3869831
o-Terphenyl	%	102	3870570	88		91		90	91	91		3868732

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

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Maxxam Job #: B4N9903
Report Date: 2014/12/24

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: JM

Test Summary

Maxxam ID YX5364 **Collected** 2014/12/12
Sample ID 14-220A-SS1 **Shipped**
Matrix Soil **Received** 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3864389	N/A	2014/12/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	3864437	N/A	2014/12/24	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869831	2014/12/19	2014/12/23	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3870570	2014/12/23	2014/12/24	Jolanta Kawzowicz
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869436	2014/12/23	2014/12/23	Grace Bu
Moisture	BAL	3869593	N/A	2014/12/24	Anita Cheema
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3868603	2014/12/22	2014/12/23	Peggy Mclaren
Volatile Organic Compounds in Soil	P&T/MS	3865306	2014/12/19	2014/12/19	Anna Gabrielyan

Maxxam ID YX5365 **Collected** 2014/12/12
Sample ID 14-220A-SS4 **Shipped**
Matrix Soil **Received** 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3864389	N/A	2014/12/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	3864437	N/A	2014/12/24	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869831	2014/12/19	2014/12/23	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3868732	2014/12/22	2014/12/23	Zhiyue (Frank) Zhu
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869436	2014/12/23	2014/12/23	Grace Bu
Moisture	BAL	3869593	N/A	2014/12/24	Anita Cheema
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3868603	2014/12/22	2014/12/23	Peggy Mclaren
Volatile Organic Compounds in Soil	P&T/MS	3865306	2014/12/19	2014/12/19	Anna Gabrielyan

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Sampler Initials: JM

Test Summary

Maxxam ID YX5366 **Collected** 2014/12/16
Sample ID 14-317-SS1 **Shipped**
Matrix Soil **Received** 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3865484	N/A	2014/12/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	3864437	N/A	2014/12/24	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869831	2014/12/19	2014/12/23	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3868732	2014/12/22	2014/12/23	Zhiyue (Frank) Zhu
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869436	2014/12/23	2014/12/23	Grace Bu
Moisture	BAL	3869593	N/A	2014/12/24	Anita Cheema
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3868603	2014/12/22	2014/12/23	Peggy Mclaren
Volatile Organic Compounds in Soil	P&T/MS	3865306	2014/12/19	2014/12/20	Anna Gabrielyan

Maxxam ID YX5367 **Collected** 2014/12/16
Sample ID 14-317-SS3 **Shipped**
Matrix Soil **Received** 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3865484	N/A	2014/12/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	3864437	N/A	2014/12/24	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869831	2014/12/19	2014/12/23	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3868732	2014/12/22	2014/12/23	Zhiyue (Frank) Zhu
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869436	2014/12/23	2014/12/23	Grace Bu
Moisture	BAL	3869593	N/A	2014/12/24	Anita Cheema
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3868603	2014/12/22	2014/12/23	Peggy Mclaren
Volatile Organic Compounds in Soil	P&T/MS	3865306	2014/12/19	2014/12/20	Anna Gabrielyan

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Sampler Initials: JM

Test Summary

Maxxam ID YX5368 **Collected** 2014/12/15
Sample ID 14-316-SS1 **Shipped**
Matrix Soil **Received** 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3865484	N/A	2014/12/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	3864437	N/A	2014/12/24	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869831	2014/12/19	2014/12/23	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3868732	2014/12/22	2014/12/23	Zhiyue (Frank) Zhu
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869436	2014/12/23	2014/12/23	Grace Bu
Moisture	BAL	3869593	N/A	2014/12/24	Anita Cheema
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3868603	2014/12/22	2014/12/23	Peggy Mclaren
Volatile Organic Compounds in Soil	P&T/MS	3865306	2014/12/19	2014/12/20	Anna Gabrielyan

Maxxam ID YX5369 **Collected** 2014/12/15
Sample ID 14-316-SS2 **Shipped**
Matrix Soil **Received** 2014/12/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Methylnaphthalene Sum	CALC	3865484	N/A	2014/12/24	Automated Statchk
1,3-Dichloropropene Sum	CALC	3864437	N/A	2014/12/24	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3869831	2014/12/19	2014/12/23	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3868732	2014/12/22	2014/12/23	Zhiyue (Frank) Zhu
Strong Acid Leachable Metals by ICPMS	ICP/MS	3869436	2014/12/23	2014/12/23	Grace Bu
Moisture	BAL	3869593	N/A	2014/12/24	Anita Cheema
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3868603	2014/12/22	2014/12/23	Peggy Mclaren
Volatile Organic Compounds in Soil	P&T/MS	3865306	2014/12/19	2014/12/20	Anna Gabrielyan

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Package 1	7.0°C

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

GENERAL COMMENTS

Sample YX5365-01: PAH Analysis: Detection limits were adjusted for high moisture content.

Sample YX5366-01: F24FID-S Analysis: Detection limits were adjusted for high moisture content.
PAH Analysis: Detection limits were adjusted for high moisture content.

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3865306	4-Bromofluorobenzene	2014/12/19	99	60 - 140	101	60 - 140	97	%		
3865306	D10-o-Xylene	2014/12/19	95	60 - 130	101	60 - 130	98	%		
3865306	D4-1,2-Dichloroethane	2014/12/19	95	60 - 140	99	60 - 140	98	%		
3865306	D8-Toluene	2014/12/19	103	60 - 140	101	60 - 140	101	%		
3865306	Acetone (2-Propanone)	2014/12/19	93	60 - 140	97	60 - 140	ND, RDL=0.50	ug/g	NC	50
3865306	Benzene	2014/12/19	94	60 - 140	97	60 - 130	ND, RDL=0.020	ug/g	NC	50
3865306	Bromodichloromethane	2014/12/19	96	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Bromoform	2014/12/19	109	60 - 140	115	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Bromomethane	2014/12/19	88	60 - 140	94	60 - 140	ND, RDL=0.050	ug/g	NC	50
3865306	Carbon Tetrachloride	2014/12/19	103	60 - 140	105	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Chlorobenzene	2014/12/19	99	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Chloroform	2014/12/19	95	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Dibromochloromethane	2014/12/19	103	60 - 140	109	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	1,2-Dichlorobenzene	2014/12/19	98	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	1,3-Dichlorobenzene	2014/12/19	99	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	1,4-Dichlorobenzene	2014/12/19	100	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Dichlorodifluoromethane (FREON 12)	2014/12/19	85	60 - 140	86	60 - 140	ND, RDL=0.050	ug/g	NC	50
3865306	1,1-Dichloroethane	2014/12/19	96	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	1,2-Dichloroethane	2014/12/19	92	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	1,1-Dichloroethylene	2014/12/19	103	60 - 140	105	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	cis-1,2-Dichloroethylene	2014/12/19	91	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	trans-1,2-Dichloroethylene	2014/12/19	96	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	1,2-Dichloropropane	2014/12/19	93	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	cis-1,3-Dichloropropene	2014/12/19	90	60 - 140	96	60 - 130	ND, RDL=0.030	ug/g	NC	50
3865306	trans-1,3-Dichloropropene	2014/12/19	91	60 - 140	94	60 - 130	ND, RDL=0.040	ug/g	NC	50
3865306	Ethylbenzene	2014/12/19	98	60 - 140	98	60 - 130	ND, RDL=0.020	ug/g	NC	50
3865306	Ethylene Dibromide	2014/12/19	95	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Hexane	2014/12/19	105	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	MethyleneChloride(Dichloromethane)	2014/12/19	90	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Methyl Isobutyl Ketone	2014/12/19	97	60 - 140	100	60 - 130	ND, RDL=0.50	ug/g	NC	50
3865306	Methyl Ethyl Ketone (2-Butanone)	2014/12/19	91	60 - 140	97	60 - 140	ND, RDL=0.50	ug/g	NC	50
3865306	Methyl t-butyl ether (MTBE)	2014/12/19	88	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Styrene	2014/12/19	101	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	1,1,1,2-Tetrachloroethane	2014/12/19	100	60 - 140	104	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	1,1,2,2-Tetrachloroethane	2014/12/19	98	60 - 140	105	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Tetrachloroethylene	2014/12/19	106	60 - 140	105	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Toluene	2014/12/19	95	60 - 140	95	60 - 130	ND, RDL=0.020	ug/g	NC	50
3865306	1,1,1-Trichloroethane	2014/12/19	97	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	1,1,2-Trichloroethane	2014/12/19	94	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50

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Sampler Initials: JM

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3865306	Trichloroethylene	2014/12/19	97	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Vinyl Chloride	2014/12/19	88	60 - 140	90	60 - 130	ND, RDL=0.020	ug/g	NC	50
3865306	p+m-Xylene	2014/12/19	99	60 - 140	98	60 - 130	ND, RDL=0.020	ug/g	NC	50
3865306	o-Xylene	2014/12/19	95	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g	NC	50
3865306	Trichlorofluoromethane (FREON 11)	2014/12/19	93	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
3865306	Total Xylenes	2014/12/19					ND, RDL=0.020	ug/g	NC	50
3868603	D10-Anthracene	2014/12/23	92	50 - 130	91	50 - 130	97	%		
3868603	D14-Terphenyl (FS)	2014/12/23	103	50 - 130	103	50 - 130	110	%		
3868603	D8-Acenaphthylene	2014/12/23	90	50 - 130	92	50 - 130	96	%		
3868603	Acenaphthene	2014/12/23	86	50 - 130	85	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Acenaphthylene	2014/12/23	89	50 - 130	89	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Anthracene	2014/12/23	88	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Benzo(a)anthracene	2014/12/23	89	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Benzo(a)pyrene	2014/12/23	87	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Benzo(b/j)fluoranthene	2014/12/23	82	50 - 130	82	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Benzo(g,h,i)perylene	2014/12/23	79	50 - 130	79	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Benzo(k)fluoranthene	2014/12/23	92	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Chrysene	2014/12/23	87	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Dibenz(a,h)anthracene	2014/12/23	81	50 - 130	80	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Fluoranthene	2014/12/23	97	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Fluorene	2014/12/23	93	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Indeno(1,2,3-cd)pyrene	2014/12/23	91	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	1-Methylnaphthalene	2014/12/23	93	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	2-Methylnaphthalene	2014/12/23	92	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Naphthalene	2014/12/23	81	50 - 130	82	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Phenanthrene	2014/12/23	85	50 - 130	84	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868603	Pyrene	2014/12/23	98	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
3868732	o-Terphenyl	2014/12/22	98	60 - 130	98	60 - 130	98	%		
3868732	F2 (C10-C16 Hydrocarbons)	2014/12/23	109	50 - 130	107	80 - 120	ND, RDL=10	ug/g	NC	30
3868732	F3 (C16-C34 Hydrocarbons)	2014/12/23	108	50 - 130	105	80 - 120	ND, RDL=50	ug/g	NC	30
3868732	F4 (C34-C50 Hydrocarbons)	2014/12/23	116	50 - 130	112	80 - 120	ND, RDL=50	ug/g	NC	30
3869436	Acid Extractable Antimony (Sb)	2014/12/23	100	75 - 125	101	80 - 120	ND, RDL=0.20	ug/g	NC	30
3869436	Acid Extractable Arsenic (As)	2014/12/23	98	75 - 125	101	80 - 120	ND, RDL=1.0	ug/g	NC	30
3869436	Acid Extractable Barium (Ba)	2014/12/23	NC	75 - 125	104	80 - 120	ND, RDL=0.50	ug/g	4.9	30
3869436	Acid Extractable Beryllium (Be)	2014/12/23	103	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g	NC	30
3869436	Acid Extractable Boron (B)	2014/12/23	102	75 - 125	107	80 - 120	5.8, RDL=5.0	ug/g	NC	30
3869436	Acid Extractable Cadmium (Cd)	2014/12/23	101	75 - 125	99	80 - 120	ND, RDL=0.10	ug/g	NC	30
3869436	Acid Extractable Chromium (Cr)	2014/12/23	95	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	8.4	30
3869436	Acid Extractable Cobalt (Co)	2014/12/23	97	75 - 125	100	80 - 120	ND, RDL=0.10	ug/g	11.0	30

Maxxam Job #: B4N9903
Report Date: 2014/12/24

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Your P.O. #: 16300R-20
Sampler Initials: JM

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3869436	Acid Extractable Copper (Cu)	2014/12/23	94	75 - 125	101	80 - 120	0.66, RDL=0.50 (1)	ug/g	2.5	30
3869436	Acid Extractable Lead (Pb)	2014/12/23	98	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	NC	30
3869436	Acid Extractable Molybdenum (Mo)	2014/12/23	101	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	NC	30
3869436	Acid Extractable Nickel (Ni)	2014/12/23	97	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	14.5	30
3869436	Acid Extractable Selenium (Se)	2014/12/23	101	75 - 125	105	80 - 120	ND, RDL=0.50	ug/g	NC	30
3869436	Acid Extractable Silver (Ag)	2014/12/23	98	75 - 125	99	80 - 120	ND, RDL=0.20	ug/g	NC	30
3869436	Acid Extractable Thallium (Tl)	2014/12/23	95	75 - 125	98	80 - 120	ND, RDL=0.050	ug/g	NC	30
3869436	Acid Extractable Uranium (U)	2014/12/23	95	75 - 125	97	80 - 120	ND, RDL=0.050	ug/g	2.2	30
3869436	Acid Extractable Vanadium (V)	2014/12/23	100	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	NC	30
3869436	Acid Extractable Zinc (Zn)	2014/12/23	96	75 - 125	99	80 - 120	ND, RDL=5.0	ug/g	NC	30
3869593	Moisture	2014/12/24							NC	20
3869831	1,4-Difluorobenzene	2014/12/23	99	60 - 140	100	60 - 140	97	%		
3869831	4-Bromofluorobenzene	2014/12/23	103	60 - 140	104	60 - 140	100	%		
3869831	D10-Ethylbenzene	2014/12/23	114	60 - 140	111	60 - 140	110	%		
3869831	D4-1,2-Dichloroethane	2014/12/23	105	60 - 140	107	60 - 140	105	%		
3869831	F1 (C6-C10)	2014/12/23	96	60 - 140	93	80 - 120	ND, RDL=10	ug/g	NC	30
3869831	F1 (C6-C10) - BTEX	2014/12/23					ND, RDL=10	ug/g	NC	30
3870570	o-Terphenyl	2014/12/24	94	60 - 130	99	60 - 130	95	%		
3870570	F2 (C10-C16 Hydrocarbons)	2014/12/24	98	50 - 130	99	80 - 120	ND, RDL=10	ug/g	NC	30
3870570	F3 (C16-C34 Hydrocarbons)	2014/12/24	NC	50 - 130	101	80 - 120	ND, RDL=50	ug/g	22.9	30
3870570	F4 (C34-C50 Hydrocarbons)	2014/12/24	NC	50 - 130	106	80 - 120	ND, RDL=50	ug/g	23.7	30

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
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 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) - Analyte was detected in the method blank at a level marginally above the detection limit. Sample results have not been blank corrected. Those results at or near the detection limit may be biased high..

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.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B4N9903

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

Cristina Carriere, Scientific Services

==========

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 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.maxxamanalytics.com

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

17-Dec-14 15:40
Parnian Baber
B4N9903
ABH ENV-742

Page of

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:			
Company Name:	#2267 Stantec Consulting Ltd	Company Name:		Quotation #:	B42133	ly:	
Attention:	Accounts Payable	Attention:	Jean-Philippe Gobeil	P.O. #:		Bottle Order #:	495505
Address:	1331 Clyde Avenue Suite 400	Address:		Project:	163401060.400.125	Project Manager:	
	Ottawa ON K2C 3G4			Project Name:	CSST		
Tel:	(613) 722-4420 Fax: ~~(613) 738-0721~~	Tel:	Fax: 613-722-2799	Site #:		C#495505-03-01	Parnian Baber
Email:	Stantec.Accounts.Payable.Invoices@Stantec.com	Email:	Jean-Philippe.Gobeil@stantec.com	Sampled By:	Josh Mansell		

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

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

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

Field Filtered (please circle): Metals / Hg / Cr VI

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	O.Reg 153 Volatile Organics (~~Metals~~)	O.Reg 153 Petroleum Hydrocarbons (~~Metals~~)	O.Reg 153 PAHs (~~Metals~~)	O.Reg 153 Dissolved ICPMS Metals	Total Ammonia, Chloride	BOD, COD, PH, TOC	TDS, Alk, Hardness, Sulphide, SO4, Mg	O. Reg. 153 metals			# of Bottles	Comments
1		14-220A-551	Dec.12/14	0900	soil	✓	✓	✓					✓				
2		14-220A-554	Dec.12/14	0927	soil	✓	✓	✓					✓				
3		14-317-551	Dec.16/14	1043	soil	✓	✓	✓					✓				
4		14-317-553	Dec.16/14	1109	soil	✓	✓	✓					✓				
5		14-316-551	Dec.15/14	0905	soil	✓	✓	✓					✓				
6		14-316-552	Dec.15/14	0930	soil	✓	✓	✓					✓				
7																	
8																	REC'D IN OTTAWA
9																	
10																	on ice

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
Josh Mansell	14/12/17	1540	Kelsey Pilon Kelsey Pilon	14/12/17	15:40		Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
			[illegible]	2014/12/18	09:41			7,7,7	Present		
									Intact	✓	

* 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.

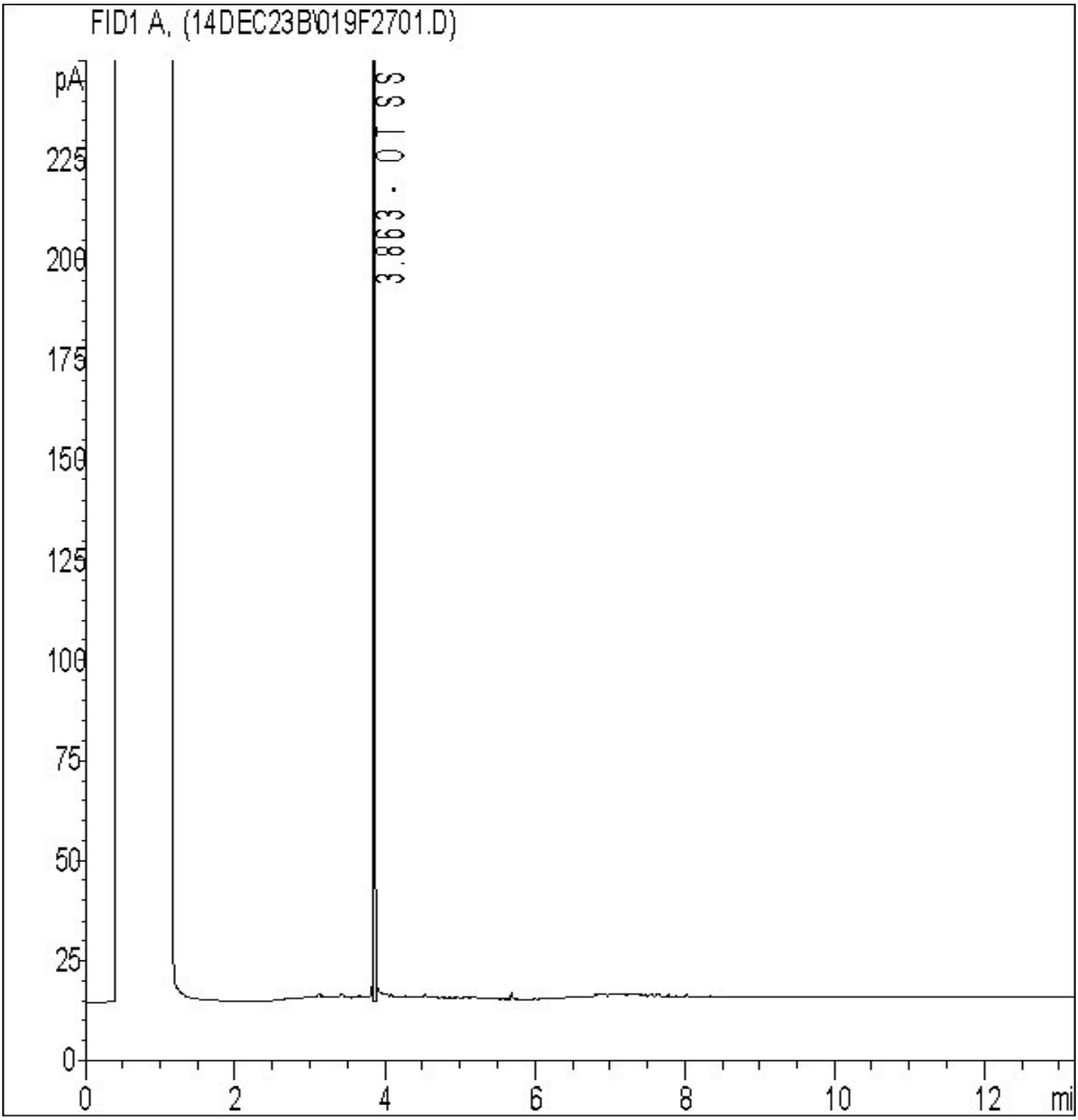
SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

White: Maxxam Yellow: Client

Report Date: 2014/12/24
Maxxam Job #: B4N9903
Maxxam Sample: YX5364

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Project name: CSST
Client ID: 14-220A-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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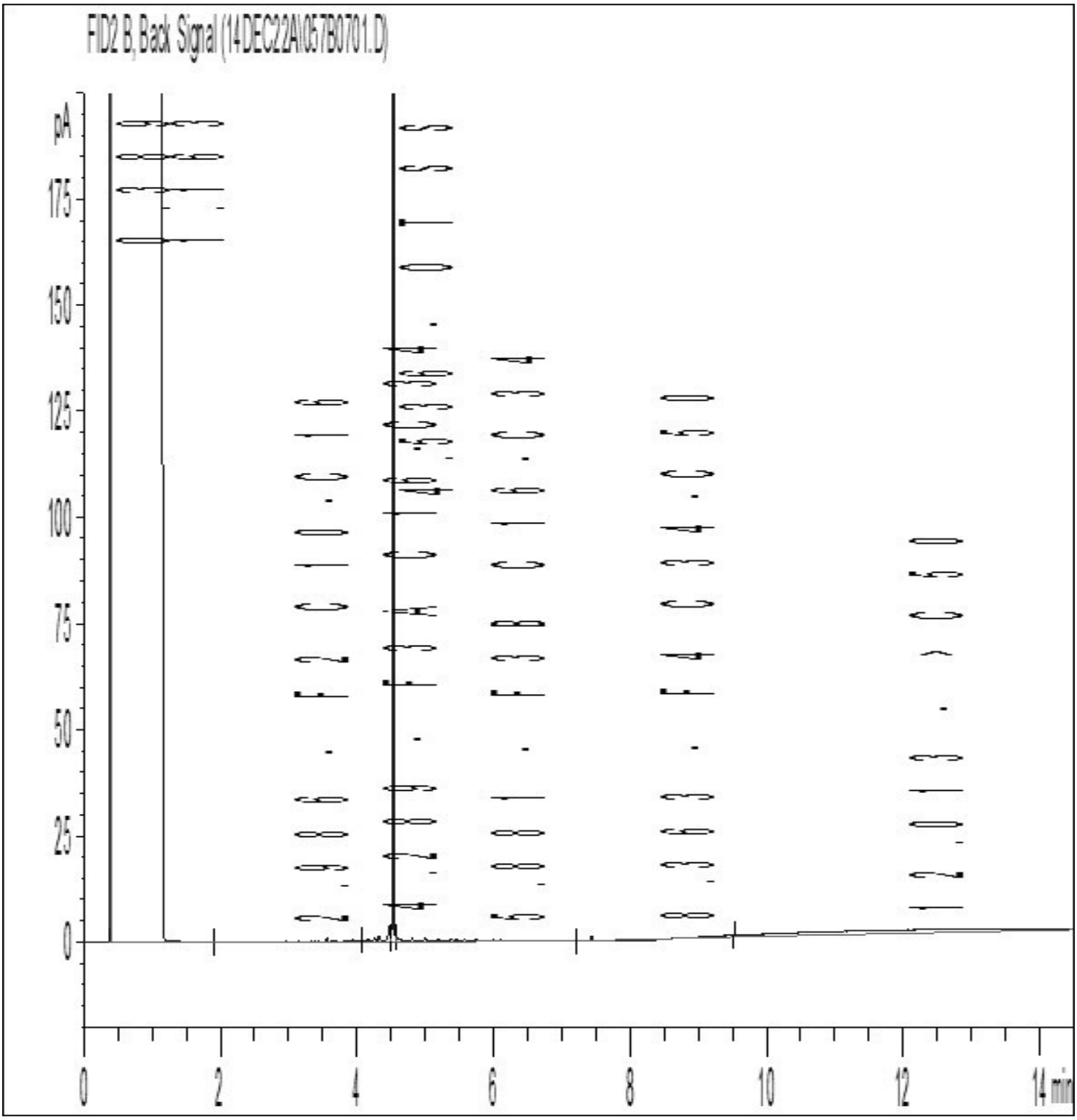
Report Date: 2014/12/24
Maxxam Job #: B4N9903
Maxxam Sample: YX5365

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Project name: CSST
Client ID: 14-220A-SS4

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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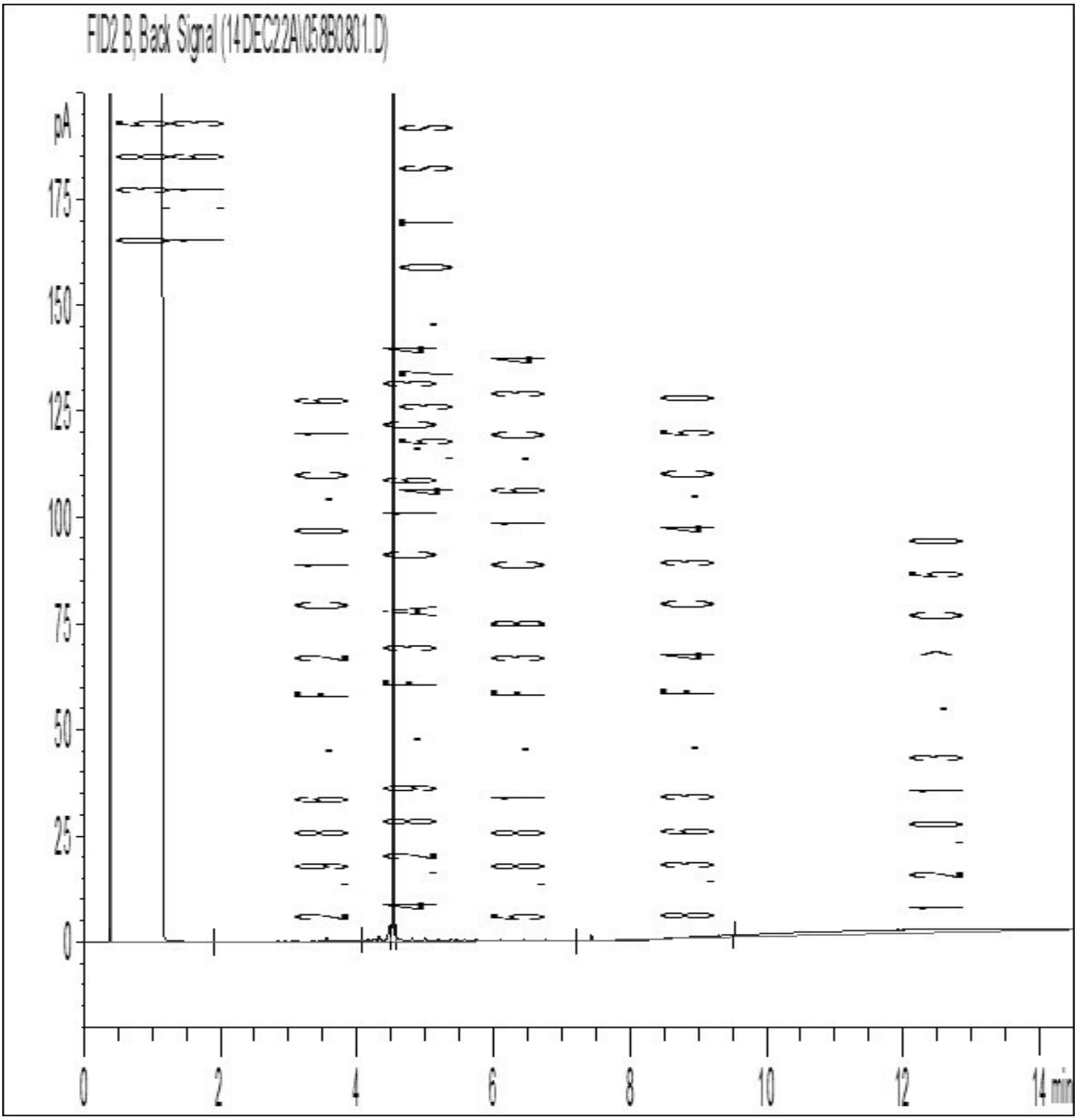
Report Date: 2014/12/24
Maxxam Job #: B4N9903
Maxxam Sample: YX5366

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Project name: CSST
Client ID: 14-317-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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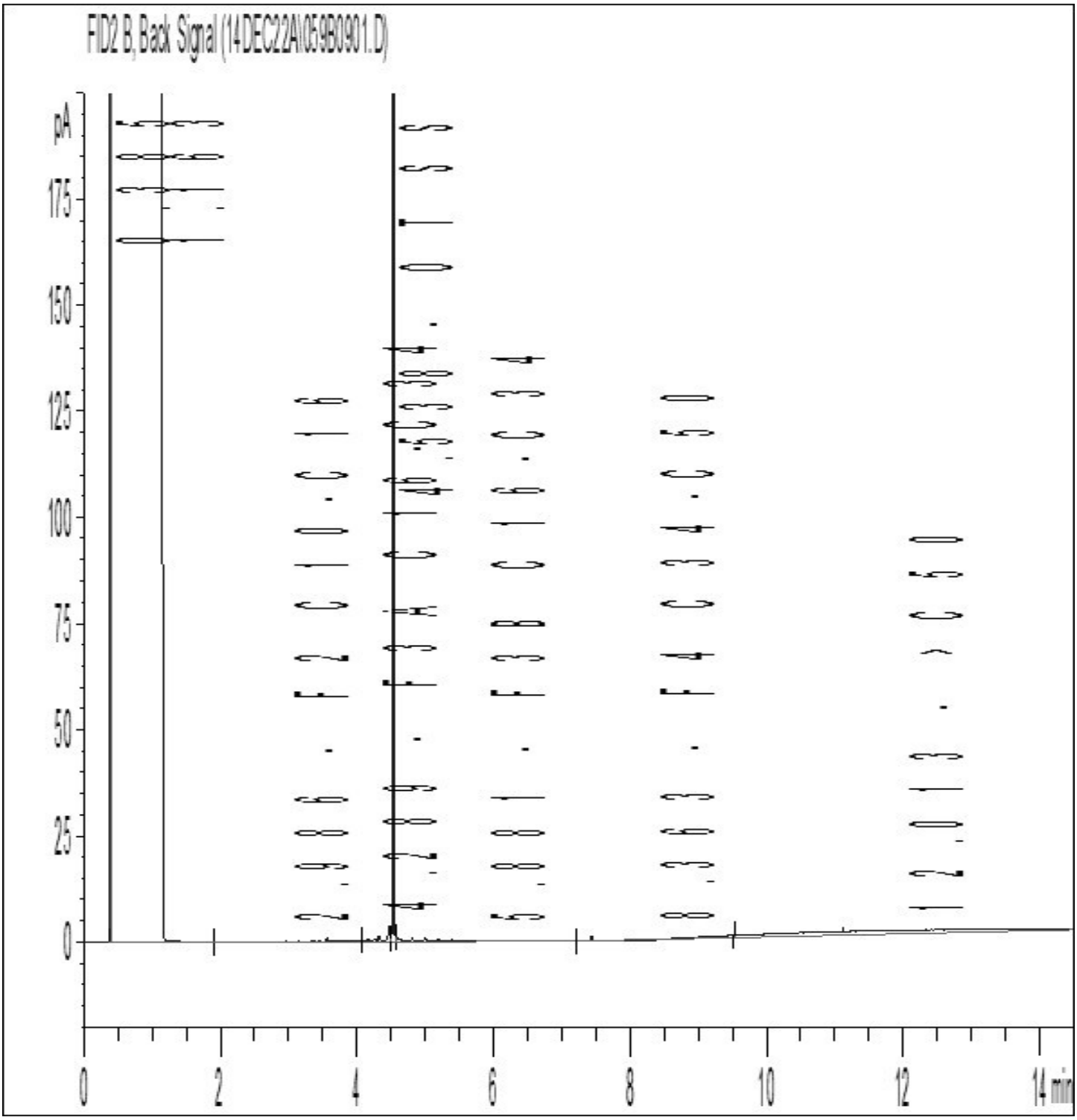
Report Date: 2014/12/24
Maxxam Job #: B4N9903
Maxxam Sample: YX5367

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Project name: CSST
Client ID: 14-317-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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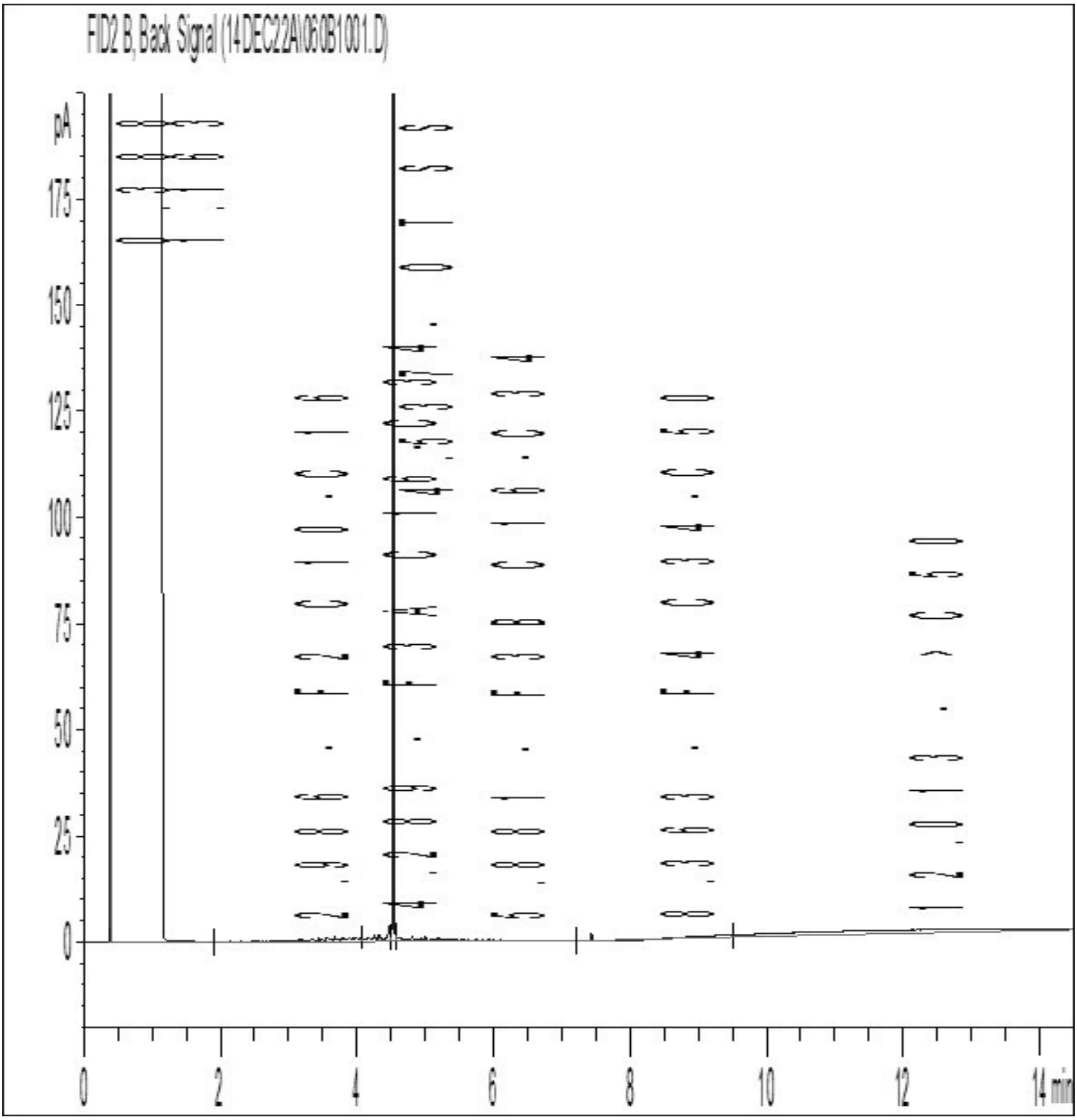
Report Date: 2014/12/24
Maxxam Job #: B4N9903
Maxxam Sample: YX5368

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Project name: CSST
Client ID: 14-316-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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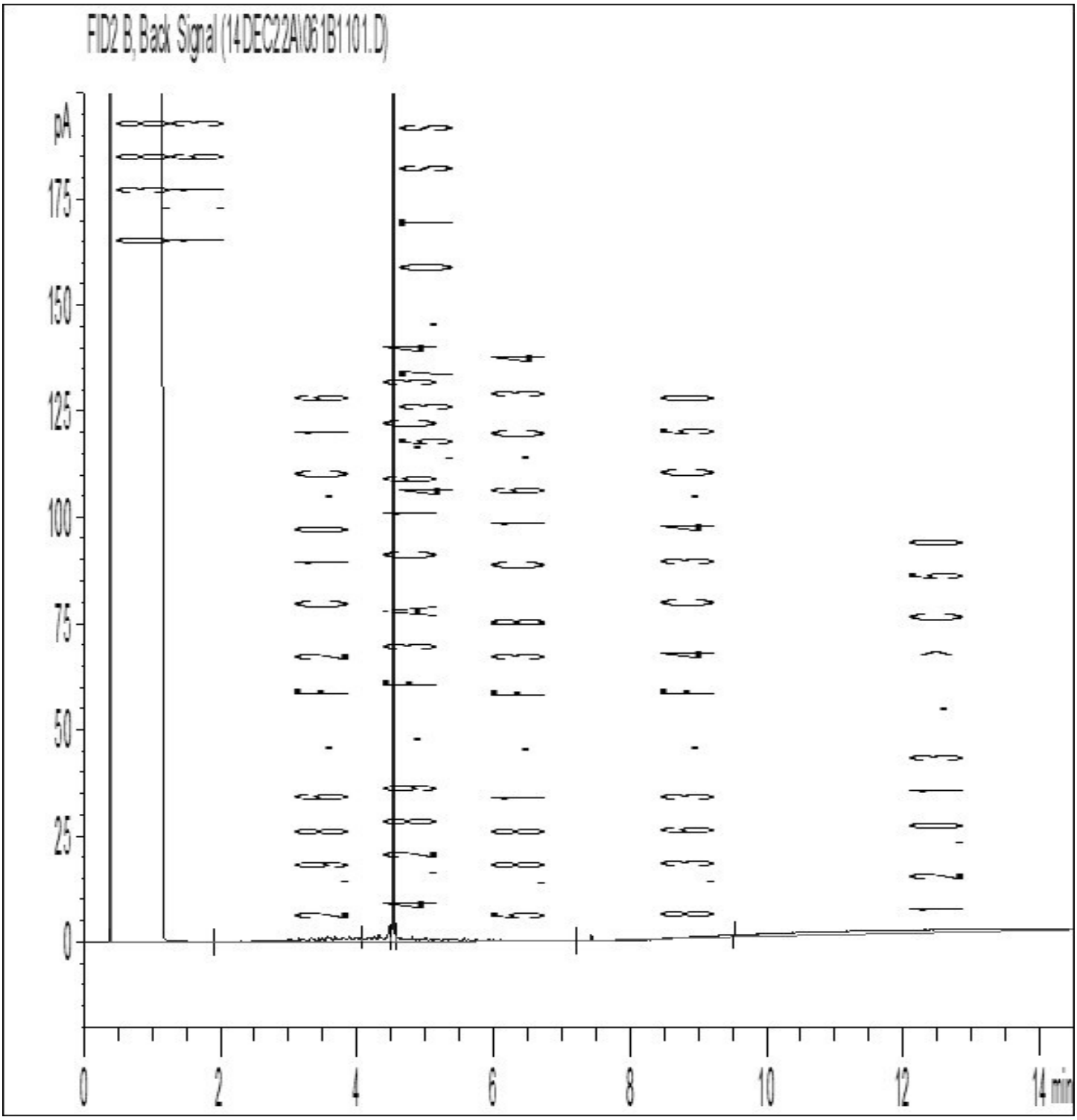
Report Date: 2014/12/24
Maxxam Job #: B4N9903
Maxxam Sample: YX5369

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Project name: CSST
Client ID: 14-316-SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

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Your Project #: 163401060.400.125
Your C.O.C. #: 510322-01-01

Attention:Alicja Wierzbicka

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2015/04/30
Report #: R3410017
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B571620
Received: 2015/04/22, 10:30

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	4	N/A	2015/04/29	CAM SOP-00301	EPA 8270D m
Alkalinity (1)	2	N/A	2015/04/28	CAM SOP-00448	SM 22 2320 B m
Biochemical Oxygen Demand (BOD) (1)	2	N/A	2015/04/29	CAM SOP-00427	SM 22 5210B m
1,3-Dichloropropene Sum	4	N/A	2015/04/28	CAM SOP-00226	EPA 8260C m
Chloride by Automated Colourimetry (1)	4	N/A	2015/04/27	CAM SOP-00463	EPA 325.2 m
Chemical Oxygen Demand (1)	2	N/A	2015/04/28	CAM SOP-00416	SM 22 5220 D m
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2015/04/24	OTT SOP-00002	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2015/04/25	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	4	2015/04/23	2015/04/24	OTT SOP-00001	CCME Hydrocarbons
Hardness (calculated as CaCO3) (1)	2	N/A	2015/04/29	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals Analysis by ICP (1)	2	2015/04/29	2015/04/29	CAM SOP-00408	EPA 6010C m
Lab Filtered Metals by ICPMS (1)	1	2015/04/24	2015/04/27	CAM SOP-00447	EPA 6020A m
Dissolved Metals by ICPMS (1)	3	N/A	2015/04/29	CAM SOP-00447	EPA 6020A m
Total Ammonia-N (1)	2	N/A	2015/04/28	CAM SOP-00441	EPA GS I-2522-90 m
Total Ammonia-N (1)	2	N/A	2015/04/30	CAM SOP-00441	EPA GS I-2522-90 m
PAH Compounds in Water by GC/MS (SIM) (1)	4	2015/04/28	2015/04/29	CAM SOP-00318	EPA 8270D m
pH (1)	2	N/A	2015/04/25	CAM SOP-00413	SM 4500H+ B m
Sulphate by Automated Colourimetry (1)	2	N/A	2015/04/27	CAM SOP-00464	EPA 375.4 m
Sulphide (1)	2	N/A	2015/04/24	CAM SOP-00455	SM 22 4500-S G m
Total Dissolved Solids (1)	2	N/A	2015/04/25	CAM SOP-00428	SM 22 2540C m
Total Organic Carbon (TOC) (1, 2)	2	N/A	2015/04/28	CAM SOP-00446	SM 22 5310B m
Volatile Organic Compounds in Water	4	N/A	2015/04/27	OTT SOP-00005	EPA 8260 modified
Non-Routine Volatile Organic Compounds (1)	4	N/A	2015/04/27	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

Your Project #: 163401060.400.125
Your C.O.C. #: 510322-01-01

Attention:Alicja Wierzbicka

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2015/04/30
Report #: R3410017
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B571620
Received: 2015/04/22, 10:30

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

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

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

(1) This test was performed by Maxxam Analytics Mississauga
(2) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573
==========
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 #: B571620
Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

RESULTS OF ANALYSES OF WATER

Maxxam ID		ADL331	ADL332			ADL336	ADL336		
Sampling Date		2015/04/21 11:15	2015/04/21 09:30			2015/04/21 13:30	2015/04/21 13:30		
COC Number		510322-01-01	510322-01-01			510322-01-01	510322-01-01		
	Units	14-224	13-227S15.04.21	RDL	QC Batch	13-207	13-207 Lab-Dup	RDL	QC Batch
Calculated Parameters									
Hardness (CaCO3)	mg/L			1.0	3993486	1300		1.0	3993486
Inorganics									
Total Ammonia-N	mg/L	0.11	4.2	0.050	3999922	1.3		0.050	4000107
Total BOD	mg/L	<2.0	<2.0	2.0	3995702			2.0	
Total Chemical Oxygen Demand (COD)	mg/L	39	110	4.0	3997875			4.0	
Total Dissolved Solids	mg/L			20		4840	4670	20	3997361
Total Organic Carbon (TOC)	mg/L	13	8.3	0.20	3997886			0.20	
pH	pH	7.41	7.49	N/A	3996507			N/A	
Dissolved Sulphate (SO4)	mg/L			1		300		1	3996509
Sulphide	mg/L			0.020		0.11		0.020	3995405
Alkalinity (Total as CaCO3)	mg/L			1.0		180		1.0	3997483
Dissolved Chloride (Cl)	mg/L	33	18	1	3997344	2300		30	3996499

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

Maxxam ID		ADL337		
Sampling Date		2015/04/20 12:15		
COC Number		510322-01-01		
	Units	13-227D	RDL	QC Batch
Calculated Parameters				
Hardness (CaCO3)	mg/L	530	1.0	3993486
Inorganics				
Total Ammonia-N	mg/L	0.93	0.050	4000107
Total Dissolved Solids	mg/L	818	10	3997361
Dissolved Sulphate (SO4)	mg/L	71	1	3996509
Sulphide	mg/L	<0.020	0.020	3995405
Alkalinity (Total as CaCO3)	mg/L	470	1.0	3997483
Dissolved Chloride (Cl)	mg/L	46	1	3996499

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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 #: B571620
Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		ADL331		ADL332	ADL332		ADL334		
Sampling Date		2015/04/21 11:15		2015/04/21 09:30	2015/04/21 09:30		2015/04/21 08:00		
COC Number		510322-01-01		510322-01-01	510322-01-01		510322-01-01		
	Units	**14-224**	**QC Batch**	**13-227S15.04.21**	**13-227S15.04.21 Lab-Dup**	**QC Batch**	**14-402A**	**RDL**	**QC Batch**
Metals									
Dissolved Antimony (Sb)	ug/L	0.78	4001437	1.2	1.2	3996468	<0.50	0.50	4001437
Dissolved Arsenic (As)	ug/L	<1.0	4001437	1.0	1.1	3996468	2.7	1.0	4001437
Dissolved Barium (Ba)	ug/L	64	4001437	27	27	3996468	62	2.0	4001437
Dissolved Beryllium (Be)	ug/L	<0.50	4001437	<0.50	<0.50	3996468	<0.50	0.50	4001437
Dissolved Boron (B)	ug/L	30	4001437	36	37	3996468	30	10	4001437
Dissolved Cadmium (Cd)	ug/L	<0.10	4001437	<0.10	<0.10	3996468	<0.10	0.10	4001437
Dissolved Chromium (Cr)	ug/L	<5.0	4001437	<5.0	<5.0	3996468	<5.0	5.0	4001437
Dissolved Cobalt (Co)	ug/L	<0.50	4001437	<0.50	0.50	3996468	0.65	0.50	4001437
Dissolved Copper (Cu)	ug/L	2.9	4001437	4.5	5.0	3996468	<1.0	1.0	4001437
Dissolved Lead (Pb)	ug/L	<0.50	4001437	<0.50	<0.50	3996468	<0.50	0.50	4001437
Dissolved Molybdenum (Mo)	ug/L	3.1	4001437	9.7	9.6	3996468	3.2	0.50	4001437
Dissolved Nickel (Ni)	ug/L	1.3	4001437	5.0	5.1	3996468	3.3	1.0	4001437
Dissolved Selenium (Se)	ug/L	3.1	4001437	<2.0	<2.0	3996468	<2.0	2.0	4001437
Dissolved Silver (Ag)	ug/L	<0.10	4001437	<0.10	<0.10	3996468	<0.10	0.10	4001437
Dissolved Sodium (Na)	ug/L	51000	4001437	76000	77000	3996468	100000	100	4001437
Dissolved Thallium (Tl)	ug/L	<0.050	4001437	0.089	0.098	3996468	<0.050	0.050	4001437
Dissolved Uranium (U)	ug/L	2.1	4001437	4.3	4.4	3996468	0.50	0.10	4001437
Dissolved Vanadium (V)	ug/L	<0.50	4001437	0.88	1.0	3996468	1.3	0.50	4001437
Dissolved Zinc (Zn)	ug/L	<5.0	4001437	<5.0	<5.0	3996468	<5.0	5.0	4001437

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

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Maxxam Job #: B571620
Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		ADL335	ADL336	ADL337		
Sampling Date		2015/04/21 08:45	2015/04/21 13:30	2015/04/20 12:15		
COC Number		510322-01-01	510322-01-01	510322-01-01		
	Units	14-401	13-207	13-227D	RDL	QC Batch
Metals						
Dissolved Calcium (Ca)	mg/L		290	160	0.05	4001969
Dissolved Magnesium (Mg)	mg/L		150	30	0.05	4001969
Dissolved Antimony (Sb)	ug/L	0.57			0.50	4001437
Dissolved Arsenic (As)	ug/L	<5.0 (1)			5.0	4001437
Dissolved Barium (Ba)	ug/L	210			2.0	4001437
Dissolved Beryllium (Be)	ug/L	<0.50			0.50	4001437
Dissolved Boron (B)	ug/L	78			10	4001437
Dissolved Cadmium (Cd)	ug/L	<0.10			0.10	4001437
Dissolved Chromium (Cr)	ug/L	<5.0			5.0	4001437
Dissolved Cobalt (Co)	ug/L	<1.0 (1)			1.0	4001437
Dissolved Copper (Cu)	ug/L	<1.0			1.0	4001437
Dissolved Lead (Pb)	ug/L	<0.50			0.50	4001437
Dissolved Molybdenum (Mo)	ug/L	20			0.50	4001437
Dissolved Nickel (Ni)	ug/L	4.1			2.0	4001437
Dissolved Selenium (Se)	ug/L	<2.0			2.0	4001437
Dissolved Silver (Ag)	ug/L	<0.10			0.10	4001437
Dissolved Sodium (Na)	ug/L	770000			100	4001437
Dissolved Thallium (Tl)	ug/L	<0.050			0.050	4001437
Dissolved Uranium (U)	ug/L	4.1			0.10	4001437
Dissolved Vanadium (V)	ug/L	<2.5 (1)			2.5	4001437
Dissolved Zinc (Zn)	ug/L	<5.0			5.0	4001437

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Metals Analysis:Detection Limit was raised due to matrix interferences.

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Maxxam Job #: B571620
Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		ADL331	ADL332	ADL334	ADL335		
Sampling Date		2015/04/21 11:15	2015/04/21 09:30	2015/04/21 08:00	2015/04/21 08:45		
COC Number		510322-01-01	510322-01-01	510322-01-01	510322-01-01		
	Units	14-224	13-227S15.04.21	14-402A	14-401	RDL	QC Batch
Polyaromatic Hydrocarbons							
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.27	0.090	0.050	4001196
Biphenyl	ug/L	<0.050	<0.050	<0.050	0.055	0.050	4001196
Perylene	ug/L	<0.050	<0.050	0.11	0.065	0.050	4001196
Acenaphthene	ug/L	<0.050	<0.050	0.095	<0.050	0.050	4001196
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	4001196
Anthracene	ug/L	<0.050	<0.050	0.17	0.050	0.050	4001196
Benzo(a)anthracene	ug/L	<0.050	<0.050	0.45	0.13	0.050	4001196
Benzo(a)pyrene	ug/L	0.045	<0.010	0.39	0.11	0.010	4001196
Benzo(b/j)fluoranthene	ug/L	0.060	<0.050	0.52	0.15	0.050	4001196
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	0.19	0.070	0.050	4001196
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	0.19	0.050	0.050	4001196
Chrysene	ug/L	<0.050	<0.050	0.41	0.11	0.050	4001196
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	4001196
Fluoranthene	ug/L	0.095	<0.050	1.2	0.26	0.050	4001196
Fluorene	ug/L	<0.050	<0.050	0.085	0.085	0.050	4001196
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	0.20	0.060	0.050	4001196
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.065	0.050	4001196
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.12	0.050	4001196
Naphthalene	ug/L	<0.050	<0.050	<0.050	0.090	0.050	4001196
Phenanthrene	ug/L	0.045	<0.030	0.81	0.27	0.030	4001196
Pyrene	ug/L	0.090	<0.050	0.95	0.22	0.050	4001196
Surrogate Recovery (%)							
D10-Anthracene	%	99	99	98	72		4001196
D14-Terphenyl (FS)	%	76	72	78	61		4001196
D8-Acenaphthylene	%	95	96	95	86		4001196

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		ADL331	ADL333	ADL334	ADL335		
Sampling Date		2015/04/21 11:15	2015/04/20 13:00	2015/04/21 08:00	2015/04/21 08:45		
COC Number		510322-01-01	510322-01-01	510322-01-01	510322-01-01		
	Units	14-224	13-227S15.04.20	14-402A	14-401	RDL	QC Batch
Volatile Organics							
1,3,5-Trimethylbenzene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	3996385
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	105	104	105	104		3996385
D4-1,2-Dichloroethane	%	103	98	103	101		3996385
D8-Toluene	%	98	100	99	100		3996385

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B571620
Report Date: 2015/04/30

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Sampler Initials: JU

O.REG 153 PAHS (WATER)

Maxxam ID		ADL331	ADL332	ADL334	ADL335		
Sampling Date		2015/04/21 11:15	2015/04/21 09:30	2015/04/21 08:00	2015/04/21 08:45		
COC Number		510322-01-01	510322-01-01	510322-01-01	510322-01-01		
	Units	14-224	13-227S15.04.21	14-402A	14-401	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	<0.071	<0.071	<0.071	0.19	0.071	3993777

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B571620
Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

O.REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		ADL331	ADL333	ADL333	ADL334	ADL335		
Sampling Date		2015/04/21 11:15	2015/04/20 13:00	2015/04/20 13:00	2015/04/21 08:00	2015/04/21 08:45		
COC Number		510322-01-01	510322-01-01	510322-01-01	510322-01-01	510322-01-01		
	Units	**14-224**	**13-227S15.04.20**	**13-227S15.04.20 Lab-Dup**	**14-402A**	**14-401**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
F1 (C6-C10)	ug/L	<25	<25	<25	<25	<25	25	3994591
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	<25	25	3994591
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100		<100	<100	100	3993653
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100		<100	400	100	3993653
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100		<100	610	100	3993653
Reached Baseline at C50	ug/L	Yes	Yes		Yes	Yes		3993653
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	96	93	94	91	90		3994591
4-Bromofluorobenzene	%	119	111	115	118	112		3994591
D10-Ethylbenzene	%	103	94	107	113	110		3994591
D4-1,2-Dichloroethane	%	97	98	96	98	98		3994591
o-Terphenyl	%	97	100		100	94		3993653

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

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Maxxam Job #: B571620
Report Date: 2015/04/30

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Client Project #: 163401060.400.125
Sampler Initials: JU

O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		ADL331	ADL333	ADL334	ADL335		
Sampling Date		2015/04/21 11:15	2015/04/20 13:00	2015/04/21 08:00	2015/04/21 08:45		
COC Number		510322-01-01	510322-01-01	510322-01-01	510322-01-01		
	Units	14-224	13-227S15.04.20	14-402A	14-401	RDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/L	<0.28	<0.28	<0.28	<0.28	0.28	3992011
Volatile Organics							
Dichlorodifluoromethane (FREON 12)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	3992442
Hexane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	3992442
Benzene	ug/L	<0.10	<0.10	0.13	<0.10	0.10	3992442
Bromodichloromethane	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
Bromoform	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
Bromomethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	3992442
Carbon Tetrachloride	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
Chlorobenzene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
Chloroform	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
Dibromochloromethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
1,2-Dichlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
1,3-Dichlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
1,4-Dichlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
1,1-Dichloroethane	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
1,2-Dichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
1,1-Dichloroethylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
cis-1,2-Dichloroethylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
trans-1,2-Dichloroethylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
1,2-Dichloropropane	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
trans-1,3-Dichloropropene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
Ethylbenzene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
Methylene Chloride(Dichloromethane)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	3992442
Styrene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
1,1,2,2-Tetrachloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
Tetrachloroethylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
Toluene	ug/L	<0.20	<0.20	0.24	<0.20	0.20	3992442
1,1,1-Trichloroethane	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
1,1,2-Trichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
Trichloroethylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
p+m-Xylene	ug/L	<0.10	<0.10	<0.10	0.15	0.10	3992442

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B571620
Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		ADL331	ADL333	ADL334	ADL335		
Sampling Date		2015/04/21 11:15	2015/04/20 13:00	2015/04/21 08:00	2015/04/21 08:45		
COC Number		510322-01-01	510322-01-01	510322-01-01	510322-01-01		
	Units	**14-224**	**13-227S15.04.20**	**14-402A**	**14-401**	**RDL**	**QC Batch**
o-Xylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	3992442
Total Xylenes	ug/L	<0.10	<0.10	<0.10	0.15	0.10	3992442
Chloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
Chloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	3992442
Trichlorofluoromethane (FREON 11)	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	3992442
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	98	100	97	101		3992442
D4-1,2-Dichloroethane	%	112	107	106	110		3992442
D8-Toluene	%	93	97	93	98		3992442

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B571620
Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

TEST SUMMARY

Maxxam ID: ADL331
Sample ID: 14-224
Matrix: Water

Collected: 2015/04/21
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3993777	N/A	2015/04/29	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	3995702	N/A	2015/04/29	Frank Zhang
1,3-Dichloropropene Sum	CALC	3992011	N/A	2015/04/28	Automated Statchk
Chloride by Automated Colourimetry	KONE	3997344	N/A	2015/04/27	Alina Dobreanu
Chemical Oxygen Demand	SPEC	3997875	N/A	2015/04/28	Christine Pham
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3994591	N/A	2015/04/24	Arezoo Habibagahi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3993653	2015/04/23	2015/04/24	Lyndsey Hart
Dissolved Metals by ICPMS	ICP/MS	4001437	N/A	2015/04/29	Prempal Bhatti
Total Ammonia-N	LACH/NH4	3999922	N/A	2015/04/28	Charles Opoku-Ware
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4001196	2015/04/28	2015/04/29	Darryl Tiller
pH	AT	3996507	N/A	2015/04/25	Yogesh Patel
Total Organic Carbon (TOC)	TOCV/NDIR	3997886	N/A	2015/04/28	Anastasia Hamanov
Volatile Organic Compounds in Water	P&T/MS	3992442	N/A	2015/04/27	Paul Rubinato
Non-Routine Volatile Organic Compounds	P&T/MS	3996385	N/A	2015/04/27	Edwin Ayala

Maxxam ID: ADL332
Sample ID: 13-227S15.04.21
Matrix: Water

Collected: 2015/04/21
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3993777	N/A	2015/04/29	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	3995702	N/A	2015/04/29	Frank Zhang
Chloride by Automated Colourimetry	KONE	3997344	N/A	2015/04/27	Alina Dobreanu
Chemical Oxygen Demand	SPEC	3997875	N/A	2015/04/28	Christine Pham
Lab Filtered Metals by ICPMS	ICP/MS	3996468	2015/04/24	2015/04/27	Cristina Petran
Total Ammonia-N	LACH/NH4	3999922	N/A	2015/04/28	Charles Opoku-Ware
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4001196	2015/04/28	2015/04/29	Darryl Tiller
pH	AT	3996507	N/A	2015/04/25	Yogesh Patel
Total Organic Carbon (TOC)	TOCV/NDIR	3997886	N/A	2015/04/28	Anastasia Hamanov

Maxxam ID: ADL332 Dup
Sample ID: 13-227S15.04.21
Matrix: Water

Collected: 2015/04/21
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Lab Filtered Metals by ICPMS	ICP/MS	3996468	2015/04/24	2015/04/27	Cristina Petran

Maxxam ID: ADL333
Sample ID: 13-227S15.04.20
Matrix: Water

Collected: 2015/04/20
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	3992011	N/A	2015/04/28	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3994591	N/A	2015/04/24	Arezoo Habibagahi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3993653	2015/04/23	2015/04/24	Lyndsey Hart
Volatile Organic Compounds in Water	P&T/MS	3992442	N/A	2015/04/27	Paul Rubinato

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Maxxam Job #: B571620
Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

TEST SUMMARY

Maxxam ID: ADL333
Sample ID: 13-227S15.04.20
Matrix: Water

Collected: 2015/04/20
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Non-Routine Volatile Organic Compounds	P&T/MS	3996385	N/A	2015/04/27	Edwin Ayala

Maxxam ID: ADL333 Dup
Sample ID: 13-227S15.04.20
Matrix: Water

Collected: 2015/04/20
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3994591	N/A	2015/04/24	Arezoo Habibagahi

Maxxam ID: ADL334
Sample ID: 14-402A
Matrix: Water

Collected: 2015/04/21
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3993777	N/A	2015/04/29	Automated Statchk
1,3-Dichloropropene Sum	CALC	3992011	N/A	2015/04/28	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3994591	N/A	2015/04/25	Arezoo Habibagahi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3993653	2015/04/23	2015/04/24	Lyndsey Hart
Dissolved Metals by ICPMS	ICP/MS	4001437	N/A	2015/04/29	Prempal Bhatti
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4001196	2015/04/28	2015/04/29	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3992442	N/A	2015/04/27	Paul Rubinato
Non-Routine Volatile Organic Compounds	P&T/MS	3996385	N/A	2015/04/27	Edwin Ayala

Maxxam ID: ADL335
Sample ID: 14-401
Matrix: Water

Collected: 2015/04/21
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3993777	N/A	2015/04/29	Automated Statchk
1,3-Dichloropropene Sum	CALC	3992011	N/A	2015/04/28	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3994591	N/A	2015/04/25	Arezoo Habibagahi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3993653	2015/04/23	2015/04/24	Lyndsey Hart
Dissolved Metals by ICPMS	ICP/MS	4001437	N/A	2015/04/29	Prempal Bhatti
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4001196	2015/04/28	2015/04/29	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	3992442	N/A	2015/04/27	Paul Rubinato
Non-Routine Volatile Organic Compounds	P&T/MS	3996385	N/A	2015/04/27	Edwin Ayala

Maxxam ID: ADL336
Sample ID: 13-207
Matrix: Water

Collected: 2015/04/21
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	3997483	N/A	2015/04/28	Surinder Rai
Chloride by Automated Colourimetry	KONE	3996499	N/A	2015/04/27	Deonarine Ramnarine
Hardness (calculated as CaCO3)		3993486	N/A	2015/04/29	Automated Statchk
Dissolved Metals Analysis by ICP	ICP	4001969	2015/04/29	2015/04/29	Azita Fazaeli

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Maxxam Job #: B571620
Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

TEST SUMMARY

Maxxam ID: ADL336
Sample ID: 13-207
Matrix: Water

Collected: 2015/04/21
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Ammonia-N	LACH/NH4	4000107	N/A	2015/04/30	Charles Opoku-Ware
Sulphate by Automated Colourimetry	KONE	3996509	N/A	2015/04/27	Deonarine Ramnarine
Sulphide	ISE/S	3995405	N/A	2015/04/24	Surinder Rai
Total Dissolved Solids	BAL	3997361	N/A	2015/04/25	Gurpreet Kaur

Maxxam ID: ADL336 Dup
Sample ID: 13-207
Matrix: Water

Collected: 2015/04/21
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Dissolved Solids	BAL	3997361	N/A	2015/04/25	Gurpreet Kaur

Maxxam ID: ADL337
Sample ID: 13-227D
Matrix: Water

Collected: 2015/04/20
Shipped:
Received: 2015/04/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	3997483	N/A	2015/04/28	Surinder Rai
Chloride by Automated Colourimetry	KONE	3996499	N/A	2015/04/27	Deonarine Ramnarine
Hardness (calculated as CaCO3)		3993486	N/A	2015/04/29	Automated Statchk
Dissolved Metals Analysis by ICP	ICP	4001969	2015/04/29	2015/04/29	Azita Fazaeli
Total Ammonia-N	LACH/NH4	4000107	N/A	2015/04/30	Charles Opoku-Ware
Sulphate by Automated Colourimetry	KONE	3996509	N/A	2015/04/27	Deonarine Ramnarine
Sulphide	ISE/S	3995405	N/A	2015/04/24	Surinder Rai
Total Dissolved Solids	BAL	3997361	N/A	2015/04/25	Gurpreet Kaur

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Maxxam Job #: B571620
Report Date: 2015/04/30

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Client Project #: 163401060.400.125
Sampler Initials: JU

GENERAL COMMENTS

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

Package 1	-0.3°C
Package 2	-0.3°C

VOC Analysis: Due to insufficient sample volume, samples required dilution. Detection limits were adjusted accordingly.

Coler custody seal was present and intact.

The following bottles contained visible sediment, which was included in the extraction.

14-224: 1x250ml plastic bottle for Generals; 1x250ml plastic bottle for nutrients; 1x120ml plastic bottle for BOD; 2x500ml amber glass bottles for PAH; 2x500ml amber glass bottles for F2-F4.

13-227S15.04.21:1x250ml plastic bottle for Generals; 1x250ml plastic bottle for nutrients; 1x120ml plastic bottle for BOD; 1x125ml plastic bottle for Dissolved metals;2x500ml amber glass bottles for PAH

13-227S15.04.20: 1x500ml amber glass bottle for F2-F4

14-402A: 2x500ml amber glass bottles for PAH; 2x500ml amber glass bottles for F2-F4

14-401: 2x500ml amber glass bottles for PAH; 2x500ml amber glass bottles for F2-F4

13-207: 1x250ml plastic bottle for General; 1x250ml plastic bottle for Solids; 1x250ml plastic bottle for Nutrients; 1x120ml plastic bottle for Sulfide.

13-227D:1x250ml plastic bottle for General; 1x250ml plastic bottle for Solids; 1x250ml plastic bottle for Nutrients; 1x120ml plastic bottle for Sulfide.

The following vials contained visible sediment which was included in the extraction:

14-224: 3x40ml Vials for F1& BTEX; 3x40ml vilas for VOCs.

13-227S15.04.21: 2x40ml Vials for F1& BTEX; 2x40ml vilas for VOCs.

13-227S15.04.20: 3x40ml Vials for F1& BTEX; 3x40ml vilas for VOCs.

14-402A: 3x40ml Vials for F1& BTEX; 3x40ml vilas for VOCs.

14-401: 2x40ml Vials for F1& BTEX; 3x40ml vilas for VOCs.

Sample ADL333-01 : F24FID analysis- Sample contained a high amount of sediment. Sample was extracted as is, including sediment.

Sample ADL335-01 : F24FID analysis- Sample contained a high amount of sediment. Sample was extracted as is, including sediment.

Results relate only to the items tested.

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Maxxam Job #: B571620
Report Date: 2015/04/30

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3992442	4-Bromofluorobenzene	2015/04/24	94	70 - 130	99	70 - 130	96	%				
3992442	D4-1,2-Dichloroethane	2015/04/24	81	70 - 130	93	70 - 130	92	%				
3992442	D8-Toluene	2015/04/24	105	70 - 130	99	70 - 130	99	%				
3993653	o-Terphenyl	2015/04/23	96	30 - 130	99	30 - 130	97	%				
3994591	1,4-Difluorobenzene	2015/04/24	94	70 - 130	94	70 - 130	92	%				
3994591	4-Bromofluorobenzene	2015/04/24	115	70 - 130	118	70 - 130	110	%				
3994591	D10-Ethylbenzene	2015/04/24	109	70 - 130	105	70 - 130	97	%				
3994591	D4-1,2-Dichloroethane	2015/04/24	96	70 - 130	98	70 - 130	104	%				
3996385	4-Bromofluorobenzene	2015/04/27	105	70 - 130	106	70 - 130	103	%				
3996385	D4-1,2-Dichloroethane	2015/04/27	101	70 - 130	99	70 - 130	100	%				
3996385	D8-Toluene	2015/04/27	97	70 - 130	99	70 - 130	99	%				
4001196	D10-Anthracene	2015/04/29			102	50 - 130	106	%				
4001196	D14-Terphenyl (FS)	2015/04/29			87	50 - 130	87	%				
4001196	D8-Acenaphthylene	2015/04/29			96	50 - 130	99	%				
3992442	1,1,1-Trichloroethane	2015/04/24	94	70 - 130	100	70 - 130	<0.10	ug/L	NC	40		
3992442	1,1,2,2-Tetrachloroethane	2015/04/24	79	70 - 130	123	70 - 130	<0.20	ug/L	NC	40		
3992442	1,1,2-Trichloroethane	2015/04/24	96	70 - 130	105	70 - 130	<0.20	ug/L	NC	40		
3992442	1,1-Dichloroethane	2015/04/24	93	70 - 130	99	70 - 130	<0.10	ug/L	NC	40		
3992442	1,1-Dichloroethylene	2015/04/24	115	70 - 130	118	70 - 130	<0.10	ug/L	NC	40		
3992442	1,2-Dichlorobenzene	2015/04/24	94	70 - 130	100	70 - 130	<0.20	ug/L	NC	40		
3992442	1,2-Dichloroethane	2015/04/24	94	70 - 130	105	70 - 130	<0.20	ug/L	NC	40		
3992442	1,2-Dichloropropane	2015/04/24	91	70 - 130	105	70 - 130	<0.10	ug/L	NC	40		
3992442	1,3-Dichlorobenzene	2015/04/24	97	70 - 130	103	70 - 130	<0.20	ug/L	NC	40		
3992442	1,4-Dichlorobenzene	2015/04/24	98	70 - 130	106	70 - 130	<0.20	ug/L	NC	40		
3992442	Benzene	2015/04/24	98	70 - 130	104	70 - 130	<0.10	ug/L	0.45	40		
3992442	Bromodichloromethane	2015/04/24	89	70 - 130	98	70 - 130	<0.10	ug/L	NC	40		
3992442	Bromoform	2015/04/24	93	70 - 130	105	70 - 130	<0.20	ug/L	NC	40		
3992442	Bromomethane	2015/04/24	113	60 - 140	97	60 - 140	<0.50	ug/L	NC	40		
3992442	Carbon Tetrachloride	2015/04/24	94	70 - 130	102	70 - 130	<0.10	ug/L	NC	40		
3992442	Chlorobenzene	2015/04/24	101	70 - 130	105	70 - 130	<0.10	ug/L	NC	40		
3992442	Chloroethane	2015/04/24	107	70 - 130	122	70 - 130	<0.20	ug/L				
3992442	Chloroform	2015/04/24	89	70 - 130	99	70 - 130	<0.10	ug/L	NC	40		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3992442	Chloromethane	2015/04/24	105	60 - 140	110	60 - 140	<0.50	ug/L				
3992442	cis-1,2-Dichloroethylene	2015/04/24	98	70 - 130	110	70 - 130	<0.10	ug/L	NC	40		
3992442	cis-1,3-Dichloropropene	2015/04/24	95	70 - 130	116	70 - 130	<0.20	ug/L	NC	40		
3992442	Dibromochloromethane	2015/04/24	92	70 - 130	101	70 - 130	<0.20	ug/L	NC	40		
3992442	Dichlorodifluoromethane (FREON 12)	2015/04/24	97	60 - 140	95	60 - 140	<0.50	ug/L	NC	40		
3992442	Ethylbenzene	2015/04/24	99	70 - 130	103	70 - 130	<0.10	ug/L	NC	40		
3992442	Ethylene Dibromide	2015/04/24	94	70 - 130	107	70 - 130	<0.20	ug/L	NC	40		
3992442	Hexane	2015/04/24	66	70 - 130	105	70 - 130	<0.50	ug/L	NC	40		
3992442	Methylene Chloride(Dichloromethane)	2015/04/24	70	70 - 130	108	70 - 130	<0.50	ug/L	NC	40		
3992442	o-Xylene	2015/04/24	100	70 - 130	105	70 - 130	<0.10	ug/L	NC	40		
3992442	p+m-Xylene	2015/04/24	108	70 - 130	112	70 - 130	<0.10	ug/L	NC	40		
3992442	Styrene	2015/04/24	106	70 - 130	115	70 - 130	<0.20	ug/L	NC	40		
3992442	Tetrachloroethylene	2015/04/24	92	70 - 130	99	70 - 130	<0.10	ug/L	NC	40		
3992442	Toluene	2015/04/24	102	70 - 130	104	70 - 130	<0.20	ug/L	NC	40		
3992442	Total Xylenes	2015/04/24							NC	40		
3992442	trans-1,2-Dichloroethylene	2015/04/24	96	70 - 130	102	70 - 130	<0.10	ug/L	NC	40		
3992442	trans-1,3-Dichloropropene	2015/04/24	80	70 - 130	105	70 - 130	<0.20	ug/L	NC	40		
3992442	Trichloroethylene	2015/04/24	95	70 - 130	101	70 - 130	<0.10	ug/L	NC	40		
3992442	Trichlorofluoromethane (FREON 11)	2015/04/24	117	70 - 130	99	70 - 130	<0.20	ug/L	NC	40		
3992442	Vinyl Chloride	2015/04/24	121	70 - 130	122	70 - 130	<0.20	ug/L	NC	40		
3993653	F2 (C10-C16 Hydrocarbons)	2015/04/24	89	50 - 130	90	60 - 130	<100	ug/L	NC	50		
3993653	F3 (C16-C34 Hydrocarbons)	2015/04/24	89	50 - 130	90	60 - 130	<100	ug/L	NC	50		
3993653	F4 (C34-C50 Hydrocarbons)	2015/04/24	89	50 - 130	90	60 - 130	<100	ug/L	NC	50		
3994591	F1 (C6-C10) - BTEX	2015/04/24					<25	ug/L	NC	40		
3994591	F1 (C6-C10)	2015/04/24	101	70 - 130	100	70 - 130	<25	ug/L	NC	40		
3995405	Sulphide	2015/04/24	92	80 - 120	96	80 - 120	<0.020	mg/L	NC	20		
3995702	Total BOD	2015/04/29					<2.0	mg/L	NC	25	108	85 - 115
3996385	1,3,5-Trimethylbenzene	2015/04/27	115	60 - 140	124	60 - 140	<0.20	ug/L				
3996468	Dissolved Antimony (Sb)	2015/04/27	111	80 - 120	103	80 - 120	<0.50	ug/L	NC	20		
3996468	Dissolved Arsenic (As)	2015/04/27	107	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
3996468	Dissolved Barium (Ba)	2015/04/27	104	80 - 120	98	80 - 120	<2.0	ug/L	0.22	20		
3996468	Dissolved Beryllium (Be)	2015/04/27	110	80 - 120	103	80 - 120	<0.50	ug/L	NC	20		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3996468	Dissolved Boron (B)	2015/04/27	108	80 - 120	101	80 - 120	<10	ug/L	NC	20		
3996468	Dissolved Cadmium (Cd)	2015/04/27	108	80 - 120	102	80 - 120	<0.10	ug/L	NC	20		
3996468	Dissolved Chromium (Cr)	2015/04/27	105	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
3996468	Dissolved Cobalt (Co)	2015/04/27	108	80 - 120	102	80 - 120	<0.50	ug/L	NC	20		
3996468	Dissolved Copper (Cu)	2015/04/27	109	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
3996468	Dissolved Lead (Pb)	2015/04/27	103	80 - 120	98	80 - 120	<0.50	ug/L	NC	20		
3996468	Dissolved Molybdenum (Mo)	2015/04/27	110	80 - 120	103	80 - 120	<0.50	ug/L	0.062	20		
3996468	Dissolved Nickel (Ni)	2015/04/27	107	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
3996468	Dissolved Selenium (Se)	2015/04/27	106	80 - 120	99	80 - 120	<2.0	ug/L	NC	20		
3996468	Dissolved Silver (Ag)	2015/04/27	105	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		
3996468	Dissolved Sodium (Na)	2015/04/27	NC	80 - 120	100	80 - 120	<100	ug/L	1.6	20		
3996468	Dissolved Thallium (Tl)	2015/04/27	103	80 - 120	99	80 - 120	<0.050	ug/L	NC	20		
3996468	Dissolved Uranium (U)	2015/04/27	104	80 - 120	99	80 - 120	<0.10	ug/L	1.1	20		
3996468	Dissolved Vanadium (V)	2015/04/27	105	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
3996468	Dissolved Zinc (Zn)	2015/04/27	103	80 - 120	97	80 - 120	<5.0	ug/L	NC	20		
3996499	Dissolved Chloride (Cl)	2015/04/27	NC	80 - 120	104	80 - 120	<1	mg/L	0.039	20		
3996507	pH	2015/04/25			101	98 - 103			1.2	N/A		
3996509	Dissolved Sulphate (SO4)	2015/04/27	NC	75 - 125	104	80 - 120	<1	mg/L	0.80	20		
3997344	Dissolved Chloride (Cl)	2015/04/27	NC	80 - 120	104	80 - 120	<1	mg/L	3.6	20		
3997361	Total Dissolved Solids	2015/04/25					<10	mg/L	3.5	25	99	90 - 110
3997483	Alkalinity (Total as CaCO3)	2015/04/28			96	85 - 115	<1.0	mg/L	0.21	25		
3997875	Total Chemical Oxygen Demand (COD)	2015/04/28	97	75 - 125	99	75 - 125	<4.0	mg/L	NC	25		
3997886	Total Organic Carbon (TOC)	2015/04/28	99	80 - 120	101	80 - 120	<0.20	mg/L	1.1	20		
3999922	Total Ammonia-N	2015/04/28	NC	80 - 120	93	85 - 115	<0.050	mg/L	1.8	20		
4000107	Total Ammonia-N	2015/04/30	96	80 - 120	102	85 - 115	<0.050	mg/L	2.5	20		
4001196	1-Methylnaphthalene	2015/04/29			90	50 - 130	<0.050	ug/L	1.7	30		
4001196	2-Methylnaphthalene	2015/04/29			87	50 - 130	<0.050	ug/L	1.5	30		
4001196	Acenaphthene	2015/04/29			99	50 - 130	<0.050	ug/L	1.8	30		
4001196	Acenaphthylene	2015/04/29			99	50 - 130	<0.050	ug/L	1.2	30		
4001196	Anthracene	2015/04/29			105	50 - 130	<0.050	ug/L	2.1	30		
4001196	Benzo(a)anthracene	2015/04/29			102	50 - 130	<0.050	ug/L	1.3	30		
4001196	Benzo(a)pyrene	2015/04/29			100	50 - 130	<0.010	ug/L	1.8	30		

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			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
4001196	Benzo(b/j)fluoranthene	2015/04/29			102	50 - 130	<0.050	ug/L	1.7	30		
4001196	Benzo(e)pyrene	2015/04/29			99	50 - 130	<0.050	ug/L	1.7	30		
4001196	Benzo(g,h,i)perylene	2015/04/29			78	50 - 130	<0.050	ug/L	3.0	30		
4001196	Benzo(k)fluoranthene	2015/04/29			99	50 - 130	<0.050	ug/L	0.30	30		
4001196	Biphenyl	2015/04/29			88	50 - 130	<0.050	ug/L	1.6	30		
4001196	Chrysene	2015/04/29			106	50 - 130	<0.050	ug/L	1.8	30		
4001196	Dibenz(a,h)anthracene	2015/04/29			88	50 - 130	<0.050	ug/L	2.1	30		
4001196	Fluoranthene	2015/04/29			104	50 - 130	<0.050	ug/L	1.6	30		
4001196	Fluorene	2015/04/29			100	50 - 130	<0.050	ug/L	0.99	30		
4001196	Indeno(1,2,3-cd)pyrene	2015/04/29			91	50 - 130	<0.050	ug/L	2.6	30		
4001196	Naphthalene	2015/04/29			90	50 - 130	<0.050	ug/L	0.11	30		
4001196	Perylene	2015/04/29			96	50 - 130	<0.050	ug/L	1.3	40		
4001196	Phenanthrene	2015/04/29			101	50 - 130	<0.030	ug/L	1.5	30		
4001196	Pyrene	2015/04/29			105	50 - 130	<0.050	ug/L	1.7	30		
4001437	Dissolved Antimony (Sb)	2015/04/29	119	80 - 120	106	80 - 120	<0.50	ug/L	NC	20		
4001437	Dissolved Arsenic (As)	2015/04/29	119	80 - 120	109	80 - 120	<1.0	ug/L	NC	20		
4001437	Dissolved Barium (Ba)	2015/04/29	107	80 - 120	102	80 - 120	<2.0	ug/L	1.5	20		
4001437	Dissolved Beryllium (Be)	2015/04/29	115	80 - 120	106	80 - 120	<0.50	ug/L	NC	20		
4001437	Dissolved Boron (B)	2015/04/29	119	80 - 120	108	80 - 120	<10	ug/L	NC	20		
4001437	Dissolved Cadmium (Cd)	2015/04/29	114	80 - 120	106	80 - 120	<0.10	ug/L	NC	20		
4001437	Dissolved Chromium (Cr)	2015/04/29	115	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
4001437	Dissolved Cobalt (Co)	2015/04/29	115	80 - 120	105	80 - 120	<0.50	ug/L	NC	20		
4001437	Dissolved Copper (Cu)	2015/04/29	111	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
4001437	Dissolved Lead (Pb)	2015/04/29	107	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
4001437	Dissolved Molybdenum (Mo)	2015/04/29	118	80 - 120	108	80 - 120	<0.50	ug/L	NC	20		
4001437	Dissolved Nickel (Ni)	2015/04/29	112	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
4001437	Dissolved Selenium (Se)	2015/04/29	118	80 - 120	107	80 - 120	<2.0	ug/L	NC	20		
4001437	Dissolved Silver (Ag)	2015/04/29	113	80 - 120	105	80 - 120	<0.10	ug/L	NC	20		
4001437	Dissolved Sodium (Na)	2015/04/29	NC	80 - 120	107	80 - 120	<100	ug/L	2.8	20		
4001437	Dissolved Thallium (Tl)	2015/04/29	107	80 - 120	101	80 - 120	<0.050	ug/L	NC	20		
4001437	Dissolved Uranium (U)	2015/04/29	113	80 - 120	101	80 - 120	<0.10	ug/L	6.9	20		
4001437	Dissolved Vanadium (V)	2015/04/29	119	80 - 120	103	80 - 120	<0.50	ug/L	NC	20		

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Maxxam Job #: B571620
Report Date: 2015/04/30

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
4001437	Dissolved Zinc (Zn)	2015/04/29	111	80 - 120	105	80 - 120	<5.0	ug/L	NC	20		
4001969	Dissolved Calcium (Ca)	2015/04/29	NC	80 - 120	102	80 - 120	<0.05	mg/L	0.96	25		
4001969	Dissolved Magnesium (Mg)	2015/04/29	NC	80 - 120	100	80 - 120	<0.05	mg/L	0.87	25		

N/A = Not Applicable

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

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

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).

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Maxxam Job #: B571620
Report Date: 2015/04/30

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Scientific Services

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

Paul Rubinato, Analyst, Maxxam Analytics

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Your Project #: 163401060.400.125
Your C.O.C. #: 510322-02-01

Attention:Alicja Wierzbicka

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2015/05/01
Report #: R3411278
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B574223
Received: 2015/04/24, 10:30

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	3	N/A	2015/04/30	CAM SOP-00301	EPA 8270D m
Alkalinity (1)	2	N/A	2015/04/26	CAM SOP-00448	SM 22 2320 B m
Biochemical Oxygen Demand (BOD) (1)	1	N/A	2015/04/30	CAM SOP-00427	SM 22 5210B m
1,3-Dichloropropene Sum	6	N/A	2015/04/30	CAM SOP-00226	EPA 8260C m
Chloride by Automated Colourimetry (1)	2	N/A	2015/04/28	CAM SOP-00463	EPA 325.2 m
Chloride by Automated Colourimetry (1)	1	N/A	2015/04/29	CAM SOP-00463	EPA 325.2 m
Chemical Oxygen Demand (1)	1	N/A	2015/04/30	CAM SOP-00416	SM 22 5220 D m
Petroleum Hydro. CCME F1 & BTEX in Water	3	N/A	2015/04/27	OTT SOP-00002	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	3	2015/04/27	2015/04/28	OTT SOP-00001	CCME Hydrocarbons
Hardness (calculated as CaCO3) (1)	2	N/A	2015/05/01	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals Analysis by ICP (1)	2	2015/04/29	2015/05/01	CAM SOP-00408	EPA 6010C m
Lab Filtered Metals by ICPMS (1)	1	2015/04/27	2015/04/28	CAM SOP-00447	EPA 6020A m
Dissolved Metals by ICPMS (1)	2	N/A	2015/04/30	CAM SOP-00447	EPA 6020A m
Total Ammonia-N (1)	3	N/A	2015/04/30	CAM SOP-00441	EPA GS I-2522-90 m
PAH Compounds in Water by GC/MS (SIM) (1)	3	2015/04/28	2015/04/29	CAM SOP-00318	EPA 8270D m
pH (1)	1	N/A	2015/04/29	CAM SOP-00413	SM 4500H+ B m
Sulphate by Automated Colourimetry (1)	2	N/A	2015/04/28	CAM SOP-00464	EPA 375.4 m
Sulphide (1)	2	N/A	2015/04/28	CAM SOP-00455	SM 22 4500-S G m
Total Dissolved Solids (1)	2	N/A	2015/04/27	CAM SOP-00428	SM 22 2540C m
Total Organic Carbon (TOC) (1, 2)	1	N/A	2015/04/30	CAM SOP-00446	SM 22 5310B m
Volatile Organic Compounds in Water	6	N/A	2015/04/30	OTT SOP-00005	EPA 8260 modified
Non-Routine Volatile Organic Compounds (1)	6	N/A	2015/04/27	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been

Your Project #: 163401060.400.125
Your C.O.C. #: 510322-02-01

Attention:Alicja Wierzbicka

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Report Date: 2015/05/01
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CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B574223
Received: 2015/04/24, 10:30

validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

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

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

(1) This test was performed by Maxxam Analytics Mississauga
(2) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573

==========

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

RESULTS OF ANALYSES OF WATER

Maxxam ID		ADX838		ADX839			ADX840		
Sampling Date		2015/04/22 10:00		2015/04/23 11:10			2015/04/22 09:15		
COC Number		510322-02-01		510322-02-01			510322-02-01		
	Units	13-209D	QC Batch	13-213D	RDL	QC Batch	13-110D	RDL	QC Batch
Calculated Parameters									
Hardness (CaCO3)	mg/L	1400	3996091	860	1.0	3996091		1.0	3996091
Inorganics									
Total Ammonia-N	mg/L	2.0	4001918	1.5	0.050	4001918	1.7	0.050	4001918
Total BOD	mg/L				2.0	3997392	4.0	2.0	3997392
Total Chemical Oxygen Demand (COD)	mg/L				4.0	4001941	54	4.0	4001941
Total Dissolved Solids	mg/L	3890	3998803	3630	10	3998309		10	3998309
Total Organic Carbon (TOC)	mg/L				0.20	4002252	9.8	0.20	4002252
pH	pH				N/A	3999975	7.93	N/A	3999975
Dissolved Sulphate (SO4)	mg/L	240	3997814	290	1	3997814		1	3997814
Sulphide	mg/L	<0.020	4000023	<0.020	0.020	4000023		0.020	4000023
Alkalinity (Total as CaCO3)	mg/L	220	3997832	210	1.0	3997832		1.0	3997832
Dissolved Chloride (Cl)	mg/L	1800	3997813	1600	20	3997813	74	1	3997812

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

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		ADX838	ADX839	ADX840	ADX840			ADX841		
Sampling Date		2015/04/22 10:00	2015/04/23 11:10	2015/04/22 09:15	2015/04/22 09:15			2015/04/23 08:45		
COC Number		510322-02-01	510322-02-01	510322-02-01	510322-02-01			510322-02-01		
	Units	**13-209D**	**13-213D**	**13-110D**	**13-110D Lab-Dup**	**RDL**	**QC Batch**	**14-319**	**RDL**	**QC Batch**
Metals										
Dissolved Calcium (Ca)	mg/L	320	220			0.05	4002417		0.05	4002417
Dissolved Magnesium (Mg)	mg/L	150	75			0.05	4002417		0.05	4002417
Dissolved Aluminum (Al)	ug/L			<5.0	<5.0	5.0	3998308	20	5.0	4003592
Dissolved Antimony (Sb)	ug/L			0.81	0.77	0.50	3998308	<0.50	0.50	4003592
Dissolved Arsenic (As)	ug/L			4.6	4.4	1.0	3998308	<1.0	1.0	4003592
Dissolved Barium (Ba)	ug/L			26	26	2.0	3998308	52	2.0	4003592
Dissolved Beryllium (Be)	ug/L			<0.50	<0.50	0.50	3998308	<0.50	0.50	4003592
Dissolved Bismuth (Bi)	ug/L			<1.0	<1.0	1.0	3998308	<1.0	1.0	4003592
Dissolved Boron (B)	ug/L			530	550	10	3998308	65	10	4003592
Dissolved Cadmium (Cd)	ug/L			<0.10	<0.10	0.10	3998308	0.16	0.10	4003592
Dissolved Calcium (Ca)	ug/L			29000	29000	200	3998308	270000	200	4003592
Dissolved Chromium (Cr)	ug/L			<5.0	<5.0	5.0	3998308	<5.0	5.0	4003592
Dissolved Cobalt (Co)	ug/L			<0.50	<0.50	0.50	3998308	0.75	0.50	4003592
Dissolved Copper (Cu)	ug/L			<2.0	<2.0	2.0	3998308	2.5	1.0	4003592
Dissolved Iron (Fe)	ug/L			<100	<100	100	3998308	<100	100	4003592
Dissolved Lead (Pb)	ug/L			<0.50	<0.50	0.50	3998308	<0.50	0.50	4003592
Dissolved Lithium (Li)	ug/L			140	150	5.0	3998308	22	5.0	4003592
Dissolved Magnesium (Mg)	ug/L			10000	10000	50	3998308	170000	50	4003592
Dissolved Manganese (Mn)	ug/L			85	87	2.0	3998308	670	2.0	4003592
Dissolved Molybdenum (Mo)	ug/L			7.4	7.7	0.50	3998308	6.3	0.50	4003592
Dissolved Nickel (Ni)	ug/L			2.1	2.0	1.0	3998308	5.4	1.0	4003592
Dissolved Phosphorus (P)	ug/L			<100	<100	100	3998308	<100	100	4003592
Dissolved Potassium (K)	ug/L			5000	5300	200	3998308	21000	200	4003592
Dissolved Selenium (Se)	ug/L			<2.0	<2.0	2.0	3998308	<2.0	2.0	4003592
Dissolved Silicon (Si)	ug/L			9300	9400	50	3998308	5900	50	4003592
Dissolved Silver (Ag)	ug/L			<0.10	<0.10	0.10	3998308	<0.10	0.10	4003592
Dissolved Sodium (Na)	ug/L			410000	430000	100	3998308	820000	500	4003592
Dissolved Strontium (Sr)	ug/L			2300	2400	1.0	3998308	1800	1.0	4003592
Dissolved Tellurium (Te)	ug/L			<1.0	<1.0	1.0	3998308	<1.0	1.0	4003592
Dissolved Thallium (Tl)	ug/L			<0.050	<0.050	0.050	3998308	<0.050	0.050	4003592
Dissolved Tin (Sn)	ug/L			<1.0	<1.0	1.0	3998308	<1.0	1.0	4003592
Dissolved Titanium (Ti)	ug/L			<5.0	<5.0	5.0	3998308	<5.0	5.0	4003592
Dissolved Tungsten (W)	ug/L			1.0	1.1	1.0	3998308	<1.0	1.0	4003592
Dissolved Uranium (U)	ug/L			1.9	2.0	0.10	3998308	12	0.10	4003592

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

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		ADX838	ADX839	ADX840	ADX840			ADX841		
Sampling Date		2015/04/22 10:00	2015/04/23 11:10	2015/04/22 09:15	2015/04/22 09:15			2015/04/23 08:45		
COC Number		510322-02-01	510322-02-01	510322-02-01	510322-02-01			510322-02-01		
	Units	**13-209D**	**13-213D**	**13-110D**	**13-110D Lab-Dup**	**RDL**	**QC Batch**	**14-319**	**RDL**	**QC Batch**
Dissolved Vanadium (V)	ug/L			0.57	0.63	0.50	3998308	2.0	1.0	4003592
Dissolved Zinc (Zn)	ug/L			<5.0	<5.0	5.0	3998308	<5.0	5.0	4003592
Dissolved Zirconium (Zr)	ug/L			1.2	1.3	1.0	3998308	<1.0	1.0	4003592

RDL = Reportable Detection Limit
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Report Date: 2015/05/01

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Client Project #: 163401060.400.125
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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		ADX842		
Sampling Date		2015/04/23 16:00		
COC Number		510322-02-01		
	Units	13-105B	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	<50	50	4003592
Dissolved Antimony (Sb)	ug/L	<5.0	5.0	4003592
Dissolved Arsenic (As)	ug/L	<10	10	4003592
Dissolved Barium (Ba)	ug/L	250	20	4003592
Dissolved Beryllium (Be)	ug/L	<5.0	5.0	4003592
Dissolved Bismuth (Bi)	ug/L	<10	10	4003592
Dissolved Boron (B)	ug/L	250	100	4003592
Dissolved Cadmium (Cd)	ug/L	<1.0	1.0	4003592
Dissolved Calcium (Ca)	ug/L	510000	2000	4003592
Dissolved Chromium (Cr)	ug/L	<50	50	4003592
Dissolved Cobalt (Co)	ug/L	<5.0	5.0	4003592
Dissolved Copper (Cu)	ug/L	<10	10	4003592
Dissolved Iron (Fe)	ug/L	1700	1000	4003592
Dissolved Lead (Pb)	ug/L	<5.0	5.0	4003592
Dissolved Lithium (Li)	ug/L	<50	50	4003592
Dissolved Magnesium (Mg)	ug/L	160000	500	4003592
Dissolved Manganese (Mn)	ug/L	300	20	4003592
Dissolved Molybdenum (Mo)	ug/L	31	5.0	4003592
Dissolved Nickel (Ni)	ug/L	<10	10	4003592
Dissolved Phosphorus (P)	ug/L	<1000	1000	4003592
Dissolved Potassium (K)	ug/L	21000	2000	4003592
Dissolved Selenium (Se)	ug/L	<20	20	4003592
Dissolved Silicon (Si)	ug/L	15000	500	4003592
Dissolved Silver (Ag)	ug/L	<1.0	1.0	4003592
Dissolved Sodium (Na)	ug/L	3600000	1000	4003592
Dissolved Strontium (Sr)	ug/L	17000	10	4003592
Dissolved Tellurium (Te)	ug/L	<10	10	4003592
Dissolved Thallium (Tl)	ug/L	<0.50	0.50	4003592
Dissolved Tin (Sn)	ug/L	<10	10	4003592
Dissolved Titanium (Ti)	ug/L	<50	50	4003592
Dissolved Tungsten (W)	ug/L	<10	10	4003592
Dissolved Uranium (U)	ug/L	5.1	1.0	4003592
Dissolved Vanadium (V)	ug/L	<5.0	5.0	4003592
Dissolved Zinc (Zn)	ug/L	<50	50	4003592
Dissolved Zirconium (Zr)	ug/L	<10	10	4003592

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		ADX840	ADX841	ADX842	ADX843	ADX844		ADX845		
Sampling Date		2015/04/22 09:15	2015/04/23 08:45	2015/04/23 16:00	2015/04/23 11:50	2015/04/23 15:00		2015/04/23 13:30		
COC Number		510322-02-01	510322-02-01	510322-02-01	510322-02-01	510322-02-01		510322-02-01		
	Units	**13-110D**	**14-319**	**13-105B**	**14-322**	**13-203D**	**RDL**	**14-314**	**RDL**	**QC Batch**
Volatile Organics										
1,3,5-Trimethylbenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	<0.20	0.20	3996385
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	106	105	107	105	106		109		3996385
D4-1,2-Dichloroethane	%	102	101	106	100	102		105		3996385
D8-Toluene	%	99	99	97	100	100		100		3996385

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 PAHS (WATER)

Maxxam ID		ADX840	ADX841		ADX842		
Sampling Date		2015/04/22 09:15	2015/04/23 08:45		2015/04/23 16:00		
COC Number		510322-02-01	510322-02-01		510322-02-01		
	Units	13-110D	14-319	RDL	13-105B	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	<0.071	<0.071	0.071	0.38	0.21	3995850
Polyaromatic Hydrocarbons							
Acenaphthene	ug/L	<0.050	<0.050	0.050	0.17	0.050	4000876
Acenaphthylene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	4000876
Anthracene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	4000876
Benzo(a)anthracene	ug/L	0.055	<0.050	0.050	<0.050	0.050	4000876
Benzo(a)pyrene	ug/L	0.040	<0.010	0.010	<0.010	0.010	4000876
Benzo(b/j)fluoranthene	ug/L	0.060	<0.050	0.050	<0.050	0.050	4000876
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	4000876
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	4000876
Chrysene	ug/L	0.050	<0.050	0.050	<0.050	0.050	4000876
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	4000876
Fluoranthene	ug/L	0.15	<0.050	0.050	<0.050	0.050	4000876
Fluorene	ug/L	<0.050	<0.050	0.050	0.33	0.050	4000876
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	4000876
1-Methylnaphthalene	ug/L	<0.050	<0.050	0.050	0.38	0.050	4000876
2-Methylnaphthalene	ug/L	<0.050	<0.050	0.050	<0.20 (1)	0.20	4000876
Naphthalene	ug/L	<0.050	<0.050	0.050	<0.30 (1)	0.30	4000876
Phenanthrene	ug/L	0.10	0.14	0.030	0.21	0.030	4000876
Pyrene	ug/L	0.13	<0.050	0.050	<0.050	0.050	4000876
Surrogate Recovery (%)							
D10-Anthracene	%	98	92		84		4000876
D14-Terphenyl (FS)	%	75	69		63		4000876
D8-Acenaphthylene	%	93	94		84		4000876

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Detection Limit was raised due to matrix interferences.

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

O.REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		ADX840	ADX841	ADX841	ADX842		
Sampling Date		2015/04/22 09:15	2015/04/23 08:45	2015/04/23 08:45	2015/04/23 16:00		
COC Number		510322-02-01	510322-02-01	510322-02-01	510322-02-01		
	Units	13-110D	14-319	14-319 Lab-Dup	13-105B	RDL	QC Batch
BTEX & F1 Hydrocarbons							
F1 (C6-C10)	ug/L	<25	<25	<25	<25	25	3998736
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	25	3998736
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100		530	100	3999739
F3 (C16-C34 Hydrocarbons)	ug/L	<100	<100		420	100	3999739
F4 (C34-C50 Hydrocarbons)	ug/L	<100	<100		700	100	3999739
Reached Baseline at C50	ug/L	Yes	Yes		Yes		3999739
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	94	94	93	90		3998736
4-Bromofluorobenzene	%	109	113	115	115		3998736
D10-Ethylbenzene	%	94	114	107	108		3998736
D4-1,2-Dichloroethane	%	98	98	100	96		3998736
o-Terphenyl	%	95	95		107		3999739

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

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		ADX840	ADX841	ADX842	ADX842	ADX843		
Sampling Date		2015/04/22 09:15	2015/04/23 08:45	2015/04/23 16:00	2015/04/23 16:00	2015/04/23 11:50		
COC Number		510322-02-01	510322-02-01	510322-02-01	510322-02-01	510322-02-01		
	Units	13-110D	14-319	13-105B	13-105B Lab-Dup	14-322	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	<0.28	<0.28	<0.28		<0.28	0.28	3996359
Volatile Organics								
Dichlorodifluoromethane (FREON 12)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4000617
Hexane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4000617
Benzene	ug/L	3.2	<0.10	0.52	0.43	<0.10	0.10	4000617
Bromodichloromethane	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
Bromoform	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
Bromomethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4000617
Carbon Tetrachloride	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
Chlorobenzene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
Chloroform	ug/L	<0.10	<0.10	<0.10	<0.10	0.25	0.10	4000617
Dibromochloromethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
1,2-Dichlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
1,3-Dichlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
1,4-Dichlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
1,1-Dichloroethane	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
1,2-Dichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
1,1-Dichloroethylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
cis-1,2-Dichloroethylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
trans-1,2-Dichloroethylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
1,2-Dichloropropane	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
trans-1,3-Dichloropropene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
Ethylbenzene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
Methylene Chloride(Dichloromethane)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4000617
Styrene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
1,1,2,2-Tetrachloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
Tetrachloroethylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
1,1,1-Trichloroethane	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
1,1,2-Trichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
Trichloroethylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617

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

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		ADX840	ADX841	ADX842	ADX842	ADX843		
Sampling Date		2015/04/22 09:15	2015/04/23 08:45	2015/04/23 16:00	2015/04/23 16:00	2015/04/23 11:50		
COC Number		510322-02-01	510322-02-01	510322-02-01	510322-02-01	510322-02-01		
	Units	**13-110D**	**14-319**	**13-105B**	**13-105B Lab-Dup**	**14-322**	**RDL**	**QC Batch**
p+m-Xylene	ug/L	0.13	<0.10	<0.10	<0.10	<0.10	0.10	4000617
o-Xylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4000617
Total Xylenes	ug/L	0.13	<0.10	<0.10	<0.10	<0.10	0.10	4000617
Chloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
Chloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4000617
Trichlorofluoromethane (FREON 11)	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4000617
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	97	100	101	104	103		4000617
D4-1,2-Dichloroethane	%	104	108	118	107	98		4000617
D8-Toluene	%	94	100	94	92	95		4000617

RDL = Reportable Detection Limit
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Lab-Dup = Laboratory Initiated Duplicate

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Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		ADX844	ADX845		
Sampling Date		2015/04/23 15:00	2015/04/23 13:30		
COC Number		510322-02-01	510322-02-01		
	Units	13-203D	14-314	RDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/L	<0.28	<0.28	0.28	3996359
Volatile Organics					
Dichlorodifluoromethane (FREON 12)	ug/L	<0.50	<0.50	0.50	4000617
Hexane	ug/L	<0.50	<0.50	0.50	4000617
Benzene	ug/L	<0.10	<0.10	0.10	4000617
Bromodichloromethane	ug/L	<0.10	<0.10	0.10	4000617
Bromoform	ug/L	<0.20	<0.20	0.20	4000617
Bromomethane	ug/L	<0.50	<0.50	0.50	4000617
Carbon Tetrachloride	ug/L	<0.10	<0.10	0.10	4000617
Chlorobenzene	ug/L	<0.10	<0.10	0.10	4000617
Chloroform	ug/L	<0.10	0.56	0.10	4000617
Dibromochloromethane	ug/L	<0.20	<0.20	0.20	4000617
1,2-Dichlorobenzene	ug/L	<0.20	<0.20	0.20	4000617
1,3-Dichlorobenzene	ug/L	<0.20	<0.20	0.20	4000617
1,4-Dichlorobenzene	ug/L	<0.20	<0.20	0.20	4000617
1,1-Dichloroethane	ug/L	<0.10	<0.10	0.10	4000617
1,2-Dichloroethane	ug/L	<0.20	<0.20	0.20	4000617
1,1-Dichloroethylene	ug/L	<0.10	<0.10	0.10	4000617
cis-1,2-Dichloroethylene	ug/L	<0.10	<0.10	0.10	4000617
trans-1,2-Dichloroethylene	ug/L	<0.10	<0.10	0.10	4000617
1,2-Dichloropropane	ug/L	<0.10	<0.10	0.10	4000617
cis-1,3-Dichloropropene	ug/L	<0.20	<0.20	0.20	4000617
trans-1,3-Dichloropropene	ug/L	<0.20	<0.20	0.20	4000617
Ethylbenzene	ug/L	<0.10	<0.10	0.10	4000617
Ethylene Dibromide	ug/L	<0.20	<0.20	0.20	4000617
Methylene Chloride(Dichloromethane)	ug/L	<0.50	<0.50	0.50	4000617
Styrene	ug/L	<0.20	<0.20	0.20	4000617
1,1,2,2-Tetrachloroethane	ug/L	<0.20	<0.20	0.20	4000617
Tetrachloroethylene	ug/L	<0.10	<0.10	0.10	4000617
Toluene	ug/L	<0.20	<0.20	0.20	4000617
1,1,1-Trichloroethane	ug/L	<0.10	<0.10	0.10	4000617
1,1,2-Trichloroethane	ug/L	<0.20	<0.20	0.20	4000617
Trichloroethylene	ug/L	<0.10	<0.10	0.10	4000617
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	4000617
p+m-Xylene	ug/L	<0.10	<0.10	0.10	4000617

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		ADX844	ADX845		
Sampling Date		2015/04/23 15:00	2015/04/23 13:30		
COC Number		510322-02-01	510322-02-01		
	Units	13-203D	14-314	RDL	QC Batch
o-Xylene	ug/L	<0.10	<0.10	0.10	4000617
Total Xylenes	ug/L	<0.10	<0.10	0.10	4000617
Chloroethane	ug/L	<0.20	<0.20	0.20	4000617
Chloromethane	ug/L	<0.50	<0.50	0.50	4000617
Trichlorofluoromethane (FREON 11)	ug/L	<0.20	<0.20	0.20	4000617
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	102	103		4000617
D4-1,2-Dichloroethane	%	96	98		4000617
D8-Toluene	%	96	101		4000617

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2015/05/01

Stantec Consulting Ltd
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Sampler Initials: JU

TEST SUMMARY

Maxxam ID: ADX838
Sample ID: 13-209D
Matrix: Water

Collected: 2015/04/22
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	3997832	N/A	2015/04/26	Yogesh Patel
Chloride by Automated Colourimetry	KONE	3997813	N/A	2015/04/28	Deonarine Ramnarine
Hardness (calculated as CaCO3)		3996091	N/A	2015/05/01	Automated Statchk
Dissolved Metals Analysis by ICP	ICP	4002417	2015/04/29	2015/05/01	Azita Fazaeli
Total Ammonia-N	LACH/NH4	4001918	N/A	2015/04/30	Charles Opoku-Ware
Sulphate by Automated Colourimetry	KONE	3997814	N/A	2015/04/28	Deonarine Ramnarine
Sulphide	ISE/S	4000023	N/A	2015/04/28	Neil Dassanayake
Total Dissolved Solids	BAL	3998803	N/A	2015/04/27	Gurpreet Kaur

Maxxam ID: ADX839
Sample ID: 13-213D
Matrix: Water

Collected: 2015/04/23
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	3997832	N/A	2015/04/26	Yogesh Patel
Chloride by Automated Colourimetry	KONE	3997813	N/A	2015/04/28	Deonarine Ramnarine
Hardness (calculated as CaCO3)		3996091	N/A	2015/05/01	Automated Statchk
Dissolved Metals Analysis by ICP	ICP	4002417	2015/04/29	2015/05/01	Azita Fazaeli
Total Ammonia-N	LACH/NH4	4001918	N/A	2015/04/30	Charles Opoku-Ware
Sulphate by Automated Colourimetry	KONE	3997814	N/A	2015/04/28	Deonarine Ramnarine
Sulphide	ISE/S	4000023	N/A	2015/04/28	Neil Dassanayake
Total Dissolved Solids	BAL	3998309	N/A	2015/04/27	Gurpreet Kaur

Maxxam ID: ADX840
Sample ID: 13-110D
Matrix: Water

Collected: 2015/04/22
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3995850	N/A	2015/04/30	Automated Statchk
Biochemical Oxygen Demand (BOD)	DO	3997392	N/A	2015/04/30	Jenny Zhou
1,3-Dichloropropene Sum	CALC	3996359	N/A	2015/04/30	Automated Statchk
Chloride by Automated Colourimetry	KONE	3997812	N/A	2015/04/29	Deonarine Ramnarine
Chemical Oxygen Demand	SPEC	4001941	N/A	2015/04/30	Christine Pham
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3998736	N/A	2015/04/27	Arezoo Habibagahi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3999739	2015/04/27	2015/04/28	Lyndsey Hart
Lab Filtered Metals by ICPMS	ICP/MS	3998308	2015/04/27	2015/04/28	Arefa Dabhad
Total Ammonia-N	LACH/NH4	4001918	N/A	2015/04/30	Charles Opoku-Ware
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4000876	2015/04/28	2015/04/29	Darryl Tiller
pH	AT	3999975	N/A	2015/04/29	Surinder Rai
Total Organic Carbon (TOC)	TOCV/NDIR	4002252	N/A	2015/04/30	Anastasia Hamanov
Volatile Organic Compounds in Water	P&T/MS	4000617	N/A	2015/04/30	Paul Rubinato
Non-Routine Volatile Organic Compounds	P&T/MS	3996385	N/A	2015/04/27	Edwin Ayala

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

TEST SUMMARY

Maxxam ID: ADX840 Dup
Sample ID: 13-110D
Matrix: Water

Collected: 2015/04/22
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Lab Filtered Metals by ICPMS	ICP/MS	3998308	2015/04/27	2015/04/28	Arefa Dabhad

Maxxam ID: ADX841
Sample ID: 14-319
Matrix: Water

Collected: 2015/04/23
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3995850	N/A	2015/04/30	Automated Statchk
1,3-Dichloropropene Sum	CALC	3996359	N/A	2015/04/30	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3998736	N/A	2015/04/27	Arezoo Habibagahi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3999739	2015/04/27	2015/04/28	Lyndsey Hart
Dissolved Metals by ICPMS	ICP/MS	4003592	N/A	2015/04/30	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4000876	2015/04/28	2015/04/29	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	4000617	N/A	2015/04/30	Paul Rubinato
Non-Routine Volatile Organic Compounds	P&T/MS	3996385	N/A	2015/04/27	Edwin Ayala

Maxxam ID: ADX841 Dup
Sample ID: 14-319
Matrix: Water

Collected: 2015/04/23
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3998736	N/A	2015/04/27	Arezoo Habibagahi

Maxxam ID: ADX842
Sample ID: 13-105B
Matrix: Water

Collected: 2015/04/23
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	3995850	N/A	2015/04/30	Automated Statchk
1,3-Dichloropropene Sum	CALC	3996359	N/A	2015/04/30	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	3998736	N/A	2015/04/27	Arezoo Habibagahi
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3999739	2015/04/27	2015/04/28	Lyndsey Hart
Dissolved Metals by ICPMS	ICP/MS	4003592	N/A	2015/04/30	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4000876	2015/04/28	2015/04/29	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	4000617	N/A	2015/04/30	Paul Rubinato
Non-Routine Volatile Organic Compounds	P&T/MS	3996385	N/A	2015/04/27	Edwin Ayala

Maxxam ID: ADX842 Dup
Sample ID: 13-105B
Matrix: Water

Collected: 2015/04/23
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	4000617	N/A	2015/04/30	Paul Rubinato

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

TEST SUMMARY

Maxxam ID: ADX843
Sample ID: 14-322
Matrix: Water

Collected: 2015/04/23
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	3996359	N/A	2015/04/30	Automated Statchk
Volatile Organic Compounds in Water	P&T/MS	4000617	N/A	2015/04/30	Paul Rubinato
Non-Routine Volatile Organic Compounds	P&T/MS	3996385	N/A	2015/04/27	Edwin Ayala

Maxxam ID: ADX844
Sample ID: 13-203D
Matrix: Water

Collected: 2015/04/23
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	3996359	N/A	2015/04/30	Automated Statchk
Volatile Organic Compounds in Water	P&T/MS	4000617	N/A	2015/04/30	Paul Rubinato
Non-Routine Volatile Organic Compounds	P&T/MS	3996385	N/A	2015/04/27	Edwin Ayala

Maxxam ID: ADX845
Sample ID: 14-314
Matrix: Water

Collected: 2015/04/23
Shipped:
Received: 2015/04/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	3996359	N/A	2015/04/30	Automated Statchk
Volatile Organic Compounds in Water	P&T/MS	4000617	N/A	2015/04/30	Paul Rubinato
Non-Routine Volatile Organic Compounds	P&T/MS	3996385	N/A	2015/04/27	Edwin Ayala

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

GENERAL COMMENTS

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

Package 1	0.7°C

VOC Analysis: Due to insufficient sample volume, samples required dilution. Detection limits were adjusted accordingly.

Sample ADX842-01 : 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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Maxxam Job #: B574223
Report Date: 2015/05/01

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3996385	4-Bromofluorobenzene	2015/04/27	105	70 - 130	106	70 - 130	103	%				
3996385	D4-1,2-Dichloroethane	2015/04/27	101	70 - 130	99	70 - 130	100	%				
3996385	D8-Toluene	2015/04/27	97	70 - 130	99	70 - 130	99	%				
3998736	1,4-Difluorobenzene	2015/04/27	98	70 - 130	96	70 - 130	96	%				
3998736	4-Bromofluorobenzene	2015/04/27	105	70 - 130	119	70 - 130	117	%				
3998736	D10-Ethylbenzene	2015/04/27	119	70 - 130	111	70 - 130	111	%				
3998736	D4-1,2-Dichloroethane	2015/04/27	99	70 - 130	98	70 - 130	98	%				
3999739	o-Terphenyl	2015/04/28	103	30 - 130	103	30 - 130	97	%				
4000617	4-Bromofluorobenzene	2015/04/30	99	70 - 130	99	70 - 130	95	%				
4000617	D4-1,2-Dichloroethane	2015/04/30	96	70 - 130	97	70 - 130	103	%				
4000617	D8-Toluene	2015/04/30	103	70 - 130	107	70 - 130	97	%				
4000876	D10-Anthracene	2015/04/29	103	50 - 130	104	50 - 130	100	%				
4000876	D14-Terphenyl (FS)	2015/04/29	88	50 - 130	87	50 - 130	86	%				
4000876	D8-Acenaphthylene	2015/04/29	94	50 - 130	93	50 - 130	92	%				
3996385	1,3,5-Trimethylbenzene	2015/04/27	115	60 - 140	124	60 - 140	<0.20	ug/L				
3997392	Total BOD	2015/04/30					<2.0	mg/L	NC	25	113	85 - 115
3997812	Dissolved Chloride (Cl)	2015/04/29	NC	80 - 120	105	80 - 120	<1	mg/L	3.4	20		
3997813	Dissolved Chloride (Cl)	2015/04/28	NC	80 - 120	102	80 - 120	<1	mg/L	0.70	20		
3997814	Dissolved Sulphate (SO4)	2015/04/28	NC	75 - 125	103	80 - 120	<1	mg/L	0.14	20		
3997832	Alkalinity (Total as CaCO3)	2015/04/26			95	85 - 115	<1.0	mg/L	0.29	25		
3998308	Dissolved Aluminum (Al)	2015/04/28	106	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
3998308	Dissolved Antimony (Sb)	2015/04/28	110	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
3998308	Dissolved Arsenic (As)	2015/04/28	102	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
3998308	Dissolved Barium (Ba)	2015/04/28	106	80 - 120	100	80 - 120	<2.0	ug/L	0.21	20		
3998308	Dissolved Beryllium (Be)	2015/04/28	108	80 - 120	106	80 - 120	<0.50	ug/L	NC	20		
3998308	Dissolved Bismuth (Bi)	2015/04/28	93	80 - 120	93	80 - 120	<1.0	ug/L	NC	20		
3998308	Dissolved Boron (B)	2015/04/28	NC	80 - 120	104	80 - 120	<10	ug/L	3.7	20		
3998308	Dissolved Cadmium (Cd)	2015/04/28	106	80 - 120	99	80 - 120	<0.10	ug/L	NC	20		
3998308	Dissolved Calcium (Ca)	2015/04/28	NC	80 - 120	100	80 - 120	<200	ug/L	3.0	20		
3998308	Dissolved Chromium (Cr)	2015/04/28	100	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
3998308	Dissolved Cobalt (Co)	2015/04/28	99	80 - 120	95	80 - 120	<0.50	ug/L	NC	20		
3998308	Dissolved Copper (Cu)	2015/04/28	108	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3998308	Dissolved Iron (Fe)	2015/04/28	101	80 - 120	100	80 - 120	<100	ug/L	NC	20		
3998308	Dissolved Lead (Pb)	2015/04/28	96	80 - 120	94	80 - 120	<0.50	ug/L	NC	20		
3998308	Dissolved Lithium (Li)	2015/04/28	NC	80 - 120	101	80 - 120	<5.0	ug/L	5.5	20		
3998308	Dissolved Magnesium (Mg)	2015/04/28	106	80 - 120	101	80 - 120	<50	ug/L	3.5	20		
3998308	Dissolved Manganese (Mn)	2015/04/28	102	80 - 120	100	80 - 120	<2.0	ug/L	3.0	20		
3998308	Dissolved Molybdenum (Mo)	2015/04/28	108	80 - 120	100	80 - 120	<0.50	ug/L	4.0	20		
3998308	Dissolved Nickel (Ni)	2015/04/28	97	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
3998308	Dissolved Phosphorus (P)	2015/04/28	115	80 - 120	109	80 - 120	<100	ug/L	NC	20		
3998308	Dissolved Potassium (K)	2015/04/28	108	80 - 120	103	80 - 120	<200	ug/L	5.6	20		
3998308	Dissolved Selenium (Se)	2015/04/28	101	80 - 120	97	80 - 120	<2.0	ug/L	NC	20		
3998308	Dissolved Silicon (Si)	2015/04/28	110	80 - 120	105	80 - 120	<50	ug/L	1.3	20		
3998308	Dissolved Silver (Ag)	2015/04/28	98	80 - 120	97	80 - 120	<0.10	ug/L	NC	20		
3998308	Dissolved Sodium (Na)	2015/04/28	NC	80 - 120	102	80 - 120	<100	ug/L	6.7	20		
3998308	Dissolved Strontium (Sr)	2015/04/28	NC	80 - 120	99	80 - 120	<1.0	ug/L	4.0	20		
3998308	Dissolved Tellurium (Te)	2015/04/28	107	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
3998308	Dissolved Thallium (Tl)	2015/04/28	96	80 - 120	94	80 - 120	<0.050	ug/L	NC	20		
3998308	Dissolved Thorium (Th)	2015/04/28							NC	20		
3998308	Dissolved Tin (Sn)	2015/04/28	109	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
3998308	Dissolved Titanium (Ti)	2015/04/28	106	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
3998308	Dissolved Tungsten (W)	2015/04/28	99	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
3998308	Dissolved Uranium (U)	2015/04/28	96	80 - 120	92	80 - 120	<0.10	ug/L	3.0	20		
3998308	Dissolved Vanadium (V)	2015/04/28	104	80 - 120	97	80 - 120	<0.50	ug/L	NC	20		
3998308	Dissolved Zinc (Zn)	2015/04/28	99	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
3998308	Dissolved Zirconium (Zr)	2015/04/28	114	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
3998309	Total Dissolved Solids	2015/04/27					<10	mg/L	0.37	25	97	90 - 110
3998736	F1 (C6-C10) - BTEX	2015/04/27					<25	ug/L	NC	40		
3998736	F1 (C6-C10)	2015/04/27	98	70 - 130	101	70 - 130	<25	ug/L	NC	40		
3998803	Total Dissolved Solids	2015/04/27					<10	mg/L	2.0	25	97	90 - 110
3999739	F2 (C10-C16 Hydrocarbons)	2015/04/28	103	50 - 130	106	60 - 130	<100	ug/L	3.5	50		
3999739	F3 (C16-C34 Hydrocarbons)	2015/04/28	103	50 - 130	106	60 - 130	<100	ug/L	NC	50		
3999739	F4 (C34-C50 Hydrocarbons)	2015/04/28	103	50 - 130	106	60 - 130	<100	ug/L	NC	50		
3999975	pH	2015/04/29			102	98 - 103			0.037	N/A		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
4000023	Sulphide	2015/04/28	89	80 - 120	92	80 - 120	<0.020	mg/L	NC	20		
4000617	1,1,1-Trichloroethane	2015/04/30	112	70 - 130	108	70 - 130	<0.10	ug/L	NC	40		
4000617	1,1,2,2-Tetrachloroethane	2015/04/30	110	70 - 130	114	70 - 130	<0.20	ug/L	NC	40		
4000617	1,1,2-Trichloroethane	2015/04/30	110	70 - 130	109	70 - 130	<0.20	ug/L	NC	40		
4000617	1,1-Dichloroethane	2015/04/30	110	70 - 130	108	70 - 130	<0.10	ug/L	NC	40		
4000617	1,1-Dichloroethylene	2015/04/30	109	70 - 130	110	70 - 130	<0.10	ug/L	NC	40		
4000617	1,2-Dichlorobenzene	2015/04/30	103	70 - 130	99	70 - 130	<0.20	ug/L	NC	40		
4000617	1,2-Dichloroethane	2015/04/30	120	70 - 130	116	70 - 130	<0.20	ug/L	NC	40		
4000617	1,2-Dichloropropane	2015/04/30	110	70 - 130	105	70 - 130	<0.10	ug/L	NC	40		
4000617	1,3-Dichlorobenzene	2015/04/30	107	70 - 130	105	70 - 130	<0.20	ug/L	NC	40		
4000617	1,4-Dichlorobenzene	2015/04/30	111	70 - 130	107	70 - 130	<0.20	ug/L	NC	40		
4000617	Benzene	2015/04/30	114	70 - 130	107	70 - 130	<0.10	ug/L	NC	40		
4000617	Bromodichloromethane	2015/04/30	106	70 - 130	100	70 - 130	<0.10	ug/L	NC	40		
4000617	Bromoform	2015/04/30	113	70 - 130	112	70 - 130	<0.20	ug/L	NC	40		
4000617	Bromomethane	2015/04/30	81	60 - 140	122	60 - 140	<0.50	ug/L	NC	40		
4000617	Carbon Tetrachloride	2015/04/30	117	70 - 130	111	70 - 130	<0.10	ug/L	NC	40		
4000617	Chlorobenzene	2015/04/30	118	70 - 130	114	70 - 130	<0.10	ug/L	NC	40		
4000617	Chloroethane	2015/04/30	96	70 - 130	118	70 - 130	<0.20	ug/L	NC	40		
4000617	Chloroform	2015/04/30	109	70 - 130	106	70 - 130	<0.10	ug/L	NC	40		
4000617	Chloromethane	2015/04/30	81	60 - 140	106	60 - 140	<0.50	ug/L	NC	40		
4000617	cis-1,2-Dichloroethylene	2015/04/30	115	70 - 130	108	70 - 130	<0.10	ug/L	NC	40		
4000617	cis-1,3-Dichloropropene	2015/04/30	114	70 - 130	114	70 - 130	<0.20	ug/L	NC	40		
4000617	Dibromochloromethane	2015/04/30	108	70 - 130	107	70 - 130	<0.20	ug/L	NC	40		
4000617	Dichlorodifluoromethane (FREON 12)	2015/04/30	88	60 - 140	105	60 - 140	<0.50	ug/L	NC	40		
4000617	Ethylbenzene	2015/04/30	119	70 - 130	112	70 - 130	<0.10	ug/L	NC	40		
4000617	Ethylene Dibromide	2015/04/30	110	70 - 130	108	70 - 130	<0.20	ug/L	NC	40		
4000617	Hexane	2015/04/30	125	70 - 130	118	70 - 130	<0.50	ug/L	NC	40		
4000617	Methylene Chloride(Dichloromethane)	2015/04/30	111	70 - 130	80	70 - 130	<0.50	ug/L	NC	40		
4000617	o-Xylene	2015/04/30	113	70 - 130	112	70 - 130	<0.10	ug/L	NC	40		
4000617	p+m-Xylene	2015/04/30	125	70 - 130	124	70 - 130	<0.10	ug/L	NC	40		
4000617	Styrene	2015/04/30	119	70 - 130	126	70 - 130	<0.20	ug/L	NC	40		
4000617	Tetrachloroethylene	2015/04/30	116	70 - 130	112	70 - 130	<0.10	ug/L	NC	40		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
4000617	Toluene	2015/04/30	118	70 - 130	116	70 - 130	<0.20	ug/L	NC	40		
4000617	Total Xylenes	2015/04/30					<0.10	ug/L	NC	40		
4000617	trans-1,2-Dichloroethylene	2015/04/30	124	70 - 130	66	70 - 130	<0.10	ug/L	NC	40		
4000617	trans-1,3-Dichloropropene	2015/04/30	108	70 - 130	104	70 - 130	<0.20	ug/L	NC	40		
4000617	Trichloroethylene	2015/04/30	106	70 - 130	98	70 - 130	<0.10	ug/L	NC	40		
4000617	Trichlorofluoromethane (FREON 11)	2015/04/30	121	70 - 130	112	70 - 130	<0.20	ug/L	NC	40		
4000617	Vinyl Chloride	2015/04/30	92	70 - 130	123	70 - 130	<0.20	ug/L	NC	40		
4000876	1-Methylnaphthalene	2015/04/29	99	50 - 130	97	50 - 130	<0.050	ug/L	NC	30		
4000876	2-Methylnaphthalene	2015/04/29	92	50 - 130	93	50 - 130	<0.050	ug/L	NC	30		
4000876	Acenaphthene	2015/04/29	98	50 - 130	97	50 - 130	<0.050	ug/L	NC	30		
4000876	Acenaphthylene	2015/04/29	93	50 - 130	93	50 - 130	<0.050	ug/L	NC	30		
4000876	Anthracene	2015/04/29	99	50 - 130	99	50 - 130	<0.050	ug/L	NC	30		
4000876	Benzo(a)anthracene	2015/04/29	96	50 - 130	96	50 - 130	<0.050	ug/L	NC	30		
4000876	Benzo(a)pyrene	2015/04/29	93	50 - 130	94	50 - 130	<0.010	ug/L	NC	30		
4000876	Benzo(b/j)fluoranthene	2015/04/29	98	50 - 130	99	50 - 130	<0.050	ug/L	NC	30		
4000876	Benzo(g,h,i)perylene	2015/04/29	92	50 - 130	92	50 - 130	<0.050	ug/L	NC	30		
4000876	Benzo(k)fluoranthene	2015/04/29	90	50 - 130	88	50 - 130	<0.050	ug/L	NC	30		
4000876	Chrysene	2015/04/29	98	50 - 130	97	50 - 130	<0.050	ug/L	NC	30		
4000876	Dibenz(a,h)anthracene	2015/04/29	78	50 - 130	79	50 - 130	<0.050	ug/L	NC	30		
4000876	Fluoranthene	2015/04/29	104	50 - 130	102	50 - 130	<0.050	ug/L	NC	30		
4000876	Fluorene	2015/04/29	95	50 - 130	94	50 - 130	<0.050	ug/L	NC	30		
4000876	Indeno(1,2,3-cd)pyrene	2015/04/29	106	50 - 130	105	50 - 130	<0.050	ug/L	NC	30		
4000876	Naphthalene	2015/04/29	90	50 - 130	87	50 - 130	<0.050	ug/L	NC	30		
4000876	Phenanthrene	2015/04/29	98	50 - 130	96	50 - 130	<0.030	ug/L	NC	30		
4000876	Pyrene	2015/04/29	107	50 - 130	105	50 - 130	<0.050	ug/L	NC	30		
4001918	Total Ammonia-N	2015/04/30	96	80 - 120	103	85 - 115	<0.050	mg/L	NC	20		
4001941	Total Chemical Oxygen Demand (COD)	2015/04/30	102	75 - 125	101	75 - 125	<4.0	mg/L	NC	25		
4002252	Total Organic Carbon (TOC)	2015/04/29	NC	80 - 120	98	80 - 120	<0.20	mg/L	0.56	20		
4002417	Dissolved Calcium (Ca)	2015/04/30	NC	80 - 120	104	80 - 120	<0.05	mg/L	0.38	25		
4002417	Dissolved Magnesium (Mg)	2015/04/30	NC	80 - 120	100	80 - 120	<0.05	mg/L	0.23	25		
4003592	Dissolved Aluminum (Al)	2015/04/30	105	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
4003592	Dissolved Antimony (Sb)	2015/04/30	109	80 - 120	99	80 - 120	<0.50	ug/L				

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
4003592	Dissolved Arsenic (As)	2015/04/30	105	80 - 120	98	80 - 120	<1.0	ug/L				
4003592	Dissolved Barium (Ba)	2015/04/30	103	80 - 120	98	80 - 120	<2.0	ug/L	1.1	20		
4003592	Dissolved Beryllium (Be)	2015/04/30	106	80 - 120	99	80 - 120	<0.50	ug/L				
4003592	Dissolved Bismuth (Bi)	2015/04/30	100	80 - 120	94	80 - 120	<1.0	ug/L				
4003592	Dissolved Boron (B)	2015/04/30	106	80 - 120	100	80 - 120	<10	ug/L	NC	20		
4003592	Dissolved Cadmium (Cd)	2015/04/30	108	80 - 120	99	80 - 120	<0.10	ug/L	NC	20		
4003592	Dissolved Calcium (Ca)	2015/04/30	NC	80 - 120	96	80 - 120	<200	ug/L	0.83	20		
4003592	Dissolved Chromium (Cr)	2015/04/30	105	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
4003592	Dissolved Cobalt (Co)	2015/04/30	102	80 - 120	98	80 - 120	<0.50	ug/L				
4003592	Dissolved Copper (Cu)	2015/04/30	106	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
4003592	Dissolved Iron (Fe)	2015/04/30	106	80 - 120	99	80 - 120	<100	ug/L	0.35	20		
4003592	Dissolved Lead (Pb)	2015/04/30	103	80 - 120	98	80 - 120	<0.50	ug/L	NC	20		
4003592	Dissolved Lithium (Li)	2015/04/30	105	80 - 120	98	80 - 120	<5.0	ug/L				
4003592	Dissolved Magnesium (Mg)	2015/04/30	NC	80 - 120	99	80 - 120	<50	ug/L	0.40	20		
4003592	Dissolved Manganese (Mn)	2015/04/30	NC	80 - 120	99	80 - 120	<2.0	ug/L	0.24	20		
4003592	Dissolved Molybdenum (Mo)	2015/04/30	110	80 - 120	100	80 - 120	<0.50	ug/L				
4003592	Dissolved Nickel (Ni)	2015/04/30	102	80 - 120	98	80 - 120	<1.0	ug/L				
4003592	Dissolved Phosphorus (P)	2015/04/30	114	80 - 120	105	80 - 120	<100	ug/L				
4003592	Dissolved Potassium (K)	2015/04/30	106	80 - 120	100	80 - 120	<200	ug/L	0.92	20		
4003592	Dissolved Selenium (Se)	2015/04/30	104	80 - 120	99	80 - 120	<2.0	ug/L				
4003592	Dissolved Silicon (Si)	2015/04/30	101	80 - 120	96	80 - 120	<50	ug/L				
4003592	Dissolved Silver (Ag)	2015/04/30	92	80 - 120	99	80 - 120	<0.10	ug/L				
4003592	Dissolved Sodium (Na)	2015/04/30	NC	80 - 120	99	80 - 120	<100	ug/L	0.82	20		
4003592	Dissolved Strontium (Sr)	2015/04/30	NC	80 - 120	99	80 - 120	<1.0	ug/L				
4003592	Dissolved Tellurium (Te)	2015/04/30	109	80 - 120	101	80 - 120	<1.0	ug/L				
4003592	Dissolved Thallium (Tl)	2015/04/30	103	80 - 120	97	80 - 120	<0.050	ug/L				
4003592	Dissolved Tin (Sn)	2015/04/30	111	80 - 120	101	80 - 120	<1.0	ug/L				
4003592	Dissolved Titanium (Ti)	2015/04/30	101	80 - 120	96	80 - 120	<5.0	ug/L				
4003592	Dissolved Tungsten (W)	2015/04/30	106	80 - 120	100	80 - 120	<1.0	ug/L				
4003592	Dissolved Uranium (U)	2015/04/30	106	80 - 120	98	80 - 120	<0.10	ug/L				
4003592	Dissolved Vanadium (V)	2015/04/30	105	80 - 120	98	80 - 120	<0.50	ug/L				
4003592	Dissolved Zinc (Zn)	2015/04/30	103	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		

Maxxam Job #: B574223
Report Date: 2015/05/01

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
4003592	Dissolved Zirconium (Zr)	2015/04/30	113	80 - 120	103	80 - 120	<1.0	ug/L				

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.

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).

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Maxxam Job #: B574223
Report Date: 2015/05/01

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Sampler Initials: JU

VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Scientific Services

Paul Rubinato, Analyst, Maxxam Analytics

Steve Roberts, Ottawa Lab Manager

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Your Project #: 163401060.400.125
Site#: CSST
Site Location: CSST
Your C.O.C. #: C#510322-03-01

Attention:Alicja Wierzbicka

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2015/05/06
Report #: R3416958
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B578684
Received: 2015/04/29, 17:10

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Methylnaphthalene Sum (1)	1	N/A	2015/05/05	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum (1)	1	N/A	2015/05/06	CAM SOP-00226	EPA 8260C m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2015/05/06	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1)	1	2015/05/05	2015/05/06	CAM SOP-00316	CCME PHC-CWS m
PAH Compounds in Water by GC/MS (SIM) (1)	1	2015/05/01	2015/05/02	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds in Water (1)	1	N/A	2015/05/05	CAM SOP-00226	EPA 8260C m
Non-Routine Volatile Organic Compounds (1)	1	N/A	2015/05/05	CAM SOP-00226	EPA 8260 m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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 the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

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

Your Project #: 163401060.400.125
Site#: CSST
Site Location: CSST
Your C.O.C. #: C#510322-03-01

Attention:Alicja Wierzbicka

Stantec Consulting Ltd
1331 Clyde Avenue
Suite 400
Ottawa, ON
K2C 3G4

Report Date: 2015/05/06
Report #: R3416958
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B578684
Received: 2015/04/29, 17:10

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Parnian Baber, Project Manager
Email: pbaber@maxxam.ca
Phone# (613) 274-0573
==========
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Maxxam Job #: B578684
Report Date: 2015/05/06

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Sampler Initials: JU

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		AET610		
Sampling Date		2015/04/29 12:30		
COC Number		C#510322-03-01		
	Units	14-316	RDL	QC Batch
Volatile Organics				
1,3,5-Trimethylbenzene	ug/L	<0.20	0.20	4005375

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B578684
Report Date: 2015/05/06

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Sampler Initials: JU

O.REG 153 PAHS (WATER)

Maxxam ID		AET610		
Sampling Date		2015/04/29 12:30		
COC Number		C#510322-03-01		
	Units	14-316	RDL	QC Batch
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/L	<0.14	0.14	4003581
Polyaromatic Hydrocarbons				
Acenaphthene	ug/L	<0.10	0.10	4006353
Acenaphthylene	ug/L	<0.10	0.10	4006353
Anthracene	ug/L	<0.10	0.10	4006353
Benzo(a)anthracene	ug/L	<0.10	0.10	4006353
Benzo(a)pyrene	ug/L	<0.020	0.020	4006353
Benzo(b/j)fluoranthene	ug/L	<0.10	0.10	4006353
Benzo(g,h,i)perylene	ug/L	<0.10	0.10	4006353
Benzo(k)fluoranthene	ug/L	<0.10	0.10	4006353
Chrysene	ug/L	<0.10	0.10	4006353
Dibenz(a,h)anthracene	ug/L	<0.10	0.10	4006353
Fluoranthene	ug/L	<0.10	0.10	4006353
Fluorene	ug/L	<0.10	0.10	4006353
Indeno(1,2,3-cd)pyrene	ug/L	<0.10	0.10	4006353
1-Methylnaphthalene	ug/L	<0.10	0.10	4006353
2-Methylnaphthalene	ug/L	<0.10	0.10	4006353
Naphthalene	ug/L	<0.10	0.10	4006353
Phenanthrene	ug/L	<0.060	0.060	4006353
Pyrene	ug/L	<0.10	0.10	4006353
Surrogate Recovery (%)				
D10-Anthracene	%	120		4006353
D14-Terphenyl (FS)	%	100		4006353
D8-Acenaphthylene	%	107		4006353

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B578684
Report Date: 2015/05/06

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Sampler Initials: JU

O.REG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		AET610	AET610		
Sampling Date		2015/04/29 12:30	2015/04/29 12:30		
COC Number		C#510322-03-01	C#510322-03-01		
	Units	14-316	14-316 Lab-Dup	RDL	QC Batch
BTEX & F1 Hydrocarbons					
F1 (C6-C10)	ug/L	<25	<25	25	4010964
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	4010964
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	<100		100	4010584
F3 (C16-C34 Hydrocarbons)	ug/L	<200		200	4010584
F4 (C34-C50 Hydrocarbons)	ug/L	<200		200	4010584
Reached Baseline at C50	ug/L	Yes			4010584
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	103	102		4010964
4-Bromofluorobenzene	%	96	96		4010964
D10-Ethylbenzene	%	101	101		4010964
D4-1,2-Dichloroethane	%	97	97		4010964
o-Terphenyl	%	99			4010584

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

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Maxxam Job #: B578684
Report Date: 2015/05/06

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Sampler Initials: JU

O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		AET610		
Sampling Date		2015/04/29 12:30		
COC Number		C#510322-03-01		
	Units	14-316	RDL	QC Batch
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/L	<0.28	0.28	4003582
Volatile Organics				
Acetone (2-Propanone)	ug/L	<10	10	4005372
Benzene	ug/L	<0.10	0.10	4005372
Bromodichloromethane	ug/L	<0.10	0.10	4005372
Bromoform	ug/L	<0.20	0.20	4005372
Bromomethane	ug/L	<0.50	0.50	4005372
Carbon Tetrachloride	ug/L	<0.10	0.10	4005372
Chlorobenzene	ug/L	<0.10	0.10	4005372
Chloroform	ug/L	0.26	0.10	4005372
Dibromochloromethane	ug/L	<0.20	0.20	4005372
1,2-Dichlorobenzene	ug/L	<0.20	0.20	4005372
1,3-Dichlorobenzene	ug/L	<0.20	0.20	4005372
1,4-Dichlorobenzene	ug/L	<0.20	0.20	4005372
Dichlorodifluoromethane (FREON 12)	ug/L	<0.50	0.50	4005372
1,1-Dichloroethane	ug/L	<0.10	0.10	4005372
1,2-Dichloroethane	ug/L	<0.20	0.20	4005372
1,1-Dichloroethylene	ug/L	<0.10	0.10	4005372
cis-1,2-Dichloroethylene	ug/L	<0.10	0.10	4005372
trans-1,2-Dichloroethylene	ug/L	<0.10	0.10	4005372
1,2-Dichloropropane	ug/L	<0.10	0.10	4005372
cis-1,3-Dichloropropene	ug/L	<0.20	0.20	4005372
trans-1,3-Dichloropropene	ug/L	<0.20	0.20	4005372
Ethylbenzene	ug/L	<0.10	0.10	4005372
Ethylene Dibromide	ug/L	<0.20	0.20	4005372
Hexane	ug/L	<0.50	0.50	4005372
Methylene Chloride(Dichloromethane)	ug/L	<0.50	0.50	4005372
Methyl Isobutyl Ketone	ug/L	<5.0	5.0	4005372
Methyl Ethyl Ketone (2-Butanone)	ug/L	<5.0	5.0	4005372
Methyl t-butyl ether (MTBE)	ug/L	<0.20	0.20	4005372
Styrene	ug/L	<0.20	0.20	4005372
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.20	4005372
1,1,2,2-Tetrachloroethane	ug/L	<0.20	0.20	4005372

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B578684
Report Date: 2015/05/06

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Sampler Initials: JU

O.REG 153 VOLATILE ORGANICS (WATER)

Maxxam ID		AET610		
Sampling Date		2015/04/29 12:30		
COC Number		C#510322-03-01		
	Units	**14-316**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/L	<0.10	0.10	4005372
Toluene	ug/L	<0.20	0.20	4005372
1,1,1-Trichloroethane	ug/L	<0.10	0.10	4005372
1,1,2-Trichloroethane	ug/L	<0.20	0.20	4005372
Trichloroethylene	ug/L	<0.10	0.10	4005372
Vinyl Chloride	ug/L	<0.20	0.20	4005372
p+m-Xylene	ug/L	<0.10	0.10	4005372
o-Xylene	ug/L	<0.10	0.10	4005372
Total Xylenes	ug/L	<0.10	0.10	4005372
Trichlorofluoromethane (FREON 11)	ug/L	<0.20	0.20	4005372
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	105		4005372
D4-1,2-Dichloroethane	%	111		4005372
D8-Toluene	%	93		4005372

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B578684
Report Date: 2015/05/06

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Sampler Initials: JU

TEST SUMMARY

Maxxam ID: AET610
Sample ID: 14-316
Matrix: Water

Collected: 2015/04/29
Shipped:
Received: 2015/04/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4003581	N/A	2015/05/05	Automated Statchk
1,3-Dichloropropene Sum	CALC	4003582	N/A	2015/05/06	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4010964	N/A	2015/05/06	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4010584	2015/05/05	2015/05/06	Zhiyue (Frank) Zhu
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4006353	2015/05/01	2015/05/02	Darryl Tiller
Volatile Organic Compounds in Water	P&T/MS	4005372	N/A	2015/05/05	Edwin Ayala
Non-Routine Volatile Organic Compounds	P&T/MS	4005375	N/A	2015/05/05	Edwin Ayala

Maxxam ID: AET610 Dup
Sample ID: 14-316
Matrix: Water

Collected: 2015/04/29
Shipped:
Received: 2015/04/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	4010964	N/A	2015/05/06	Georgeta Rusu

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Maxxam Job #: B578684
Report Date: 2015/05/06

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Sampler Initials: JU

GENERAL COMMENTS

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

Package 1	12.7°C

Sample AET610-01 : PAH Analysis: Due to limited amount of sample available for analysis, a smaller amount was used for the analysis. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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Maxxam Job #: B578684
Report Date: 2015/05/06

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Sampler Initials: JU

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
4005372	4-Bromofluorobenzene	2015/05/05	101	70 - 130	100	70 - 130	98	%		
4005372	D4-1,2-Dichloroethane	2015/05/05	98	70 - 130	98	70 - 130	99	%		
4005372	D8-Toluene	2015/05/05	98	70 - 130	98	70 - 130	99	%		
4006353	D10-Anthracene	2015/05/05	103	50 - 130	98	50 - 130	101	%		
4006353	D14-Terphenyl (FS)	2015/05/05	89	50 - 130	83	50 - 130	84	%		
4006353	D8-Acenaphthylene	2015/05/05	91	50 - 130	89	50 - 130	94	%		
4010584	o-Terphenyl	2015/05/06	100	60 - 130	98	60 - 130	94	%		
4010964	1,4-Difluorobenzene	2015/05/06	102	70 - 130	103	70 - 130	103	%		
4010964	4-Bromofluorobenzene	2015/05/06	97	70 - 130	98	70 - 130	96	%		
4010964	D10-Ethylbenzene	2015/05/06	94	70 - 130	93	70 - 130	103	%		
4010964	D4-1,2-Dichloroethane	2015/05/06	97	70 - 130	98	70 - 130	99	%		
4005372	1,1,1,2-Tetrachloroethane	2015/05/05	93	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
4005372	1,1,1-Trichloroethane	2015/05/05	94	70 - 130	98	70 - 130	<0.10	ug/L	NC	30
4005372	1,1,2,2-Tetrachloroethane	2015/05/05	97	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
4005372	1,1,2-Trichloroethane	2015/05/05	93	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
4005372	1,1-Dichloroethane	2015/05/05	95	70 - 130	99	70 - 130	<0.10	ug/L	NC	30
4005372	1,1-Dichloroethylene	2015/05/05	105	70 - 130	108	70 - 130	<0.10	ug/L	NC	30
4005372	1,2-Dichlorobenzene	2015/05/05	95	70 - 130	101	70 - 130	<0.20	ug/L	NC	30
4005372	1,2-Dichloroethane	2015/05/05	95	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
4005372	1,2-Dichloropropane	2015/05/05	96	70 - 130	98	70 - 130	<0.10	ug/L	NC	30
4005372	1,3-Dichlorobenzene	2015/05/05	92	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
4005372	1,4-Dichlorobenzene	2015/05/05	93	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
4005372	Acetone (2-Propanone)	2015/05/05	92	60 - 140	97	60 - 140	<10	ug/L	NC	30
4005372	Benzene	2015/05/05	94	70 - 130	99	70 - 130	<0.10	ug/L	NC	30
4005372	Bromodichloromethane	2015/05/05	94	70 - 130	97	70 - 130	<0.10	ug/L	NC	30
4005372	Bromoform	2015/05/05	96	70 - 130	99	70 - 130	<0.20	ug/L	NC	30
4005372	Bromomethane	2015/05/05	86	60 - 140	98	60 - 140	<0.50	ug/L	NC	30
4005372	Carbon Tetrachloride	2015/05/05	96	70 - 130	100	70 - 130	<0.10	ug/L	NC	30
4005372	Chlorobenzene	2015/05/05	94	70 - 130	97	70 - 130	<0.10	ug/L	NC	30
4005372	Chloroform	2015/05/05	94	70 - 130	98	70 - 130	<0.10	ug/L	NC	30
4005372	cis-1,2-Dichloroethylene	2015/05/05	NC	70 - 130	98	70 - 130	<0.10	ug/L	NC	30
4005372	cis-1,3-Dichloropropene	2015/05/05	95	70 - 130	97	70 - 130	<0.20	ug/L	NC	30

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Report Date: 2015/05/06

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Sampler Initials: JU

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
4005372	Dibromochloromethane	2015/05/05	96	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
4005372	Dichlorodifluoromethane (FREON 12)	2015/05/05	90	60 - 140	95	60 - 140	<0.50	ug/L	NC	30
4005372	Ethylbenzene	2015/05/05	92	70 - 130	94	70 - 130	<0.10	ug/L	NC	30
4005372	Ethylene Dibromide	2015/05/05	94	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
4005372	Hexane	2015/05/05	99	70 - 130	107	70 - 130	<0.50	ug/L	NC	30
4005372	Methyl Ethyl Ketone (2-Butanone)	2015/05/05	98	60 - 140	99	60 - 140	<5.0	ug/L	NC	30
4005372	Methyl Isobutyl Ketone	2015/05/05	104	70 - 130	104	70 - 130	<5.0	ug/L	NC	30
4005372	Methyl t-butyl ether (MTBE)	2015/05/05	98	70 - 130	99	70 - 130	<0.20	ug/L	NC	30
4005372	Methylene Chloride(Dichloromethane)	2015/05/05	100	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
4005372	o-Xylene	2015/05/05	95	70 - 130	96	70 - 130	<0.10	ug/L	NC	30
4005372	p+m-Xylene	2015/05/05	93	70 - 130	96	70 - 130	<0.10	ug/L	NC	30
4005372	Styrene	2015/05/05	85	70 - 130	87	70 - 130	<0.20	ug/L	NC	30
4005372	Tetrachloroethylene	2015/05/05	97	70 - 130	101	70 - 130	<0.10	ug/L	NC	30
4005372	Toluene	2015/05/05	89	70 - 130	92	70 - 130	<0.20	ug/L	NC	30
4005372	Total Xylenes	2015/05/05					<0.10	ug/L	NC	30
4005372	trans-1,2-Dichloroethylene	2015/05/05	97	70 - 130	100	70 - 130	<0.10	ug/L	NC	30
4005372	trans-1,3-Dichloropropene	2015/05/05	89	70 - 130	91	70 - 130	<0.20	ug/L	NC	30
4005372	Trichloroethylene	2015/05/05	NC	70 - 130	99	70 - 130	<0.10	ug/L	NC	30
4005372	Trichlorofluoromethane (FREON 11)	2015/05/05	95	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
4005372	Vinyl Chloride	2015/05/05	98	70 - 130	101	70 - 130	<0.20	ug/L	NC	30
4005375	1,3,5-Trimethylbenzene	2015/05/05	110	60 - 140	109	60 - 140	<0.20	ug/L	NC	30
4006353	1-Methylnaphthalene	2015/05/01	99	50 - 130	100	50 - 130	<0.050	ug/L	NC	30
4006353	2-Methylnaphthalene	2015/05/01	95	50 - 130	94	50 - 130	<0.050	ug/L	8.3	30
4006353	Acenaphthene	2015/05/01	97	50 - 130	97	50 - 130	<0.050	ug/L	NC	30
4006353	Acenaphthylene	2015/05/01	93	50 - 130	93	50 - 130	<0.050	ug/L	NC	30
4006353	Anthracene	2015/05/01	99	50 - 130	96	50 - 130	<0.050	ug/L	NC	30
4006353	Benzo(a)anthracene	2015/05/01	100	50 - 130	100	50 - 130	<0.050	ug/L	NC	30
4006353	Benzo(a)pyrene	2015/05/01	97	50 - 130	97	50 - 130	<0.010	ug/L	NC	30
4006353	Benzo(b/j)fluoranthene	2015/05/01	103	50 - 130	105	50 - 130	<0.050	ug/L	NC	30
4006353	Benzo(g,h,i)perylene	2015/05/01	99	50 - 130	97	50 - 130	<0.050	ug/L	NC	30
4006353	Benzo(k)fluoranthene	2015/05/01	91	50 - 130	89	50 - 130	<0.050	ug/L	NC	30
4006353	Chrysene	2015/05/01	102	50 - 130	101	50 - 130	<0.050	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: 163401060.400.125
Site Location: CSST
Sampler Initials: JU

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
4006353	Dibenz(a,h)anthracene	2015/05/01	80	50 - 130	82	50 - 130	<0.050	ug/L	NC	30
4006353	Fluoranthene	2015/05/01	107	50 - 130	105	50 - 130	<0.050	ug/L	NC	30
4006353	Fluorene	2015/05/01	93	50 - 130	94	50 - 130	<0.050	ug/L	NC	30
4006353	Indeno(1,2,3-cd)pyrene	2015/05/01	116	50 - 130	112	50 - 130	<0.050	ug/L	NC	30
4006353	Naphthalene	2015/05/01	90	50 - 130	88	50 - 130	<0.050	ug/L	3.1	30
4006353	Phenanthrene	2015/05/01	98	50 - 130	98	50 - 130	<0.030	ug/L	NC	30
4006353	Pyrene	2015/05/01	112	50 - 130	109	50 - 130	<0.050	ug/L	NC	30
4010584	F2 (C10-C16 Hydrocarbons)	2015/05/06	106	50 - 130	102	60 - 130	<100	ug/L	NC	30
4010584	F3 (C16-C34 Hydrocarbons)	2015/05/06	106	50 - 130	107	60 - 130	<200	ug/L	NC	30
4010584	F4 (C34-C50 Hydrocarbons)	2015/05/06	110	50 - 130	109	60 - 130	<200	ug/L	NC	30
4010964	F1 (C6-C10) - BTEX	2015/05/06					<25	ug/L	NC	30
4010964	F1 (C6-C10)	2015/05/06	71	70 - 130	87	70 - 130	<25	ug/L	NC	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 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).

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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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